

## **Agro-Eco Philippines' Communication Dynamics and Farmer's Level of Resilience towards Climate Change Adaptation**

**Kethelle I. Sajonia**

University of Southeastern Philippines, Philippines  
[kisajonia@usep.edu.ph](mailto:kisajonia@usep.edu.ph)

### **Abstract**

One hundred members of the Bongabong Agro-Eco Farmers Association in Pantukan, Davao de Oro, Philippines, examined the connection between Agro-Eco communication dynamics and climate change resilience. Guided by the Inter-Organization Communication (IOC) management framework (Rizal, Nordin, Saad & Wahab, 2014), the study assumed that communication dynamics increases farmer's level of resilience towards climate change adaptation. The findings indicate that despite the high level of communication dynamics with Bongabong Agro-Eco Farmers, farmers' resilience to climate change is not guaranteed. Thus, the hypothesis that Agro-Eco Philippines' communication dynamics increase community resilience to climate change adaptation among residents was rejected, but judgment is reserved. Future research with a bigger sample size, new parameters, and equipment, however, may provide different findings.

**Keywords:** communication dynamics; climate change adaptation; resiliency; NGO

## 1. Introduction

The Philippines has been ranked third among the most disaster-risk countries globally (UNU-EHS, 2012), where a large percentage of the population resides in disaster-prone areas (DILG, 2012). Dilley (2005) has identified the country as a natural disaster hot spot due to climate change. In particular, the Philippines is located within the Pacific ring of fire. It has been classified among the top 10 hazardous countries globally based on the numerous natural geomeeteorological hazards to which it is continuously exposed. Typhoons and tropical storms, floods, and earthquakes continue to cause thousands of human deaths and injuries in the country despite various organizations' efforts to intensify strategies for disaster risk reduction. Asia has had the worst catastrophic events that have affected the region. The National Disaster Coordinating Council (NDCC) has recorded 523 events from 1987 to 2000, with 37 disasters annually (Office of Civil Defense, 2001). An estimated 50.3% of its total area and 81.3% of its population are vulnerable to natural disasters (Dilley et al., 2005).

Climate change can be defined as a statistically significant weather variation that persists for an extended period, typically decades or longer (Solomon, 2007). It is made up of discrepancies in the occurrences and magnitude of sporadic weather events and the concomitant rise in world mean surface temperature. Its effects include, among others, increasing temperatures, decreasing rainfall in the continental interiors, drought, desert encroachment, melting ice, extreme weather, flood, sea-level rise, sinking of islands, water scarcity, health, and agricultural problems (Odjugo, 2010). Climate change is a global concern, and studies show that many people are aware and knowledgeable of the phenomenon (Onyeme&Iwuchukwu, 2012). Changes associated with it have the potential to alter how people live their lives globally. These global changes threaten to deprive farmers of their lands and end the lives of living things that cannot adapt to the chaotic weather conditions the world is experiencing.

The Philippines' climate is influenced by large-scale atmospheric phenomena that bring in substantial rain almost all year round. However, due to the uneven distribution of rainfall concerning time and space and the occurrences of extreme events such as floods and droughts, the country's water resources have, in the past, experienced imbalances in supply and demand (Jose et al. 1999). Climate change leads to typhoons, and tropical storms are the most common disasters experienced in the country (National Disaster Coordination Council, 2012).

Natural disasters have resulted in destructions in lives, infrastructure, agriculture, and properties. It is also evident in Mindanao, where the farming community on its southernmost island is present. A case in point is the geographic structure of Barangay Bongabong, Pantukan, Davao de Oro. With livelihood centered on agriculture, it is essential that farmers and residents are always alert and prepared for disasters. The local government of Pantukan and its various concerned partners like Non-Government Organizations (NGO) should be aware of the Barangay's vulnerability.

An NGO is a legally constituted, voluntary association of individuals or groups that is neither a government agency nor a profitable enterprise. It is a private organization that pursues activities to relieve suffering, promote the poor's interests, protect the environment, provide essential social services, and understand community development (World Bank, 2001). Most analyses of NGO strategies for climate change response have focused on campaigns to educate

individuals and pressure policymakers to mitigate climate change. Some notable exceptions have begun to consider actions to develop community resilience and reduce community vulnerability to climate change (e.g., Rojas Blanco 2006; Fitzpatrick and Molloy, 2014). Communication is understood as a support function of an organization and a central part of organizational strategies and leadership. Good communication calls for a fluent and rapid flow of information between the organization and its stakeholders. It will be essential to know how to meet citizens' expectations and provide articulate details on the crisis at hand (Palttala&Vos, 2011).

Hence, it is essential to examine the communication dynamics on how its partners, such as an NGO, in this case, Agro-Eco Philippines, build community resilience towards climate change adaptation among farmers. When NGOs set up projects in a community, they ensure that a communication system to help less developed communities adapt to climate change is in place. Being close to the people and their constituent stakeholders, Agro-Eco Philippines can help determine the extent of the impact of climate change on local communities as well as their response, for instance, the effects of drought on some farm households, especially in Brgy. Bongabong.

## 2. Research Methods and Design

This study employed a survey research design. Survey research is when a group of people or items is studied by collecting and analyzing data from only a few people or entities considered representative of the entire group. In other words, only a part of the population is studied, and findings from this are expected to be generalized to the whole community (Nworgu, 1991). Similarly, McBurney (1994) defines the survey as assessing public opinion or individual characteristics using questionnaires and sampling methods.

Respondents of the study were the identified Bongabong Agro-Eco Farmers Association (BAEFA) members, consisting of 100 farmers. The respondents were identified as members of the Bongabong Agro-Eco Farmers Association (BAEFA). There were 133 farmers as the total population. With 5% allowable margin of error, the number of respondents was determined using the Slovin formula as follows:

$$n = \frac{N}{1 + Ne^2}$$

### Total Population = 133 Farmers

$$n = N / (1 + Ne^2)$$

$$n = 133 / 1 + (33)(.052)$$

$$n = 133 / 1 + (33)(.0025)$$

$$n = 133 / 1 + (0.3325)$$

$$n = 133 / 1.3225$$

$$n = 99.81 \text{ or } 100$$

Data were gathered using a survey questionnaire adapted from the Inter-Organization Communication (IOC) management framework (Redza, Nordin, Saad&Wahab, 2013). This was

modified to align with the objectives of the study. Communication dynamics consisted of four dimensions: communication willingness, communication behavior, communication quality, and communication commitment. Each dimension consisted of statements that respondents must agree to use a five-point level of agreement with 1 as strongly disagree; 2 as disagree; 3 as somewhat agree; 4 as agree; and 5 as strongly agree. These dimensions looked at the information sharing and communication process of Agro-Eco Philippines and BAEFA when they communicate with one another. To ascertain the community resilience level, CART employed Survey, recognized as an important community tool to assist communities in their resilience-building efforts.

The items were measured using the 'Likert Scale' method as it is suggested to evaluate the range of sample responses to a statement or series of statements (Croasmun and Ostrom, 2011). The scale used was one (1) to five (5), where 1 (one) is strongly disagrees while five (5) strongly agrees. A 5-scale selection of instruments or statements is commonly used by researchers throughout their disciplines (Croasmun and Ostrom, 2011).

Data were analyzed using descriptive statistics. Since the level of data was ordinal, the Mode was used to determine the extent of communication dynamics (communication willingness, communication behavior, and communication quality) and the level of farmers' resilience. To test the relationship between communication dynamics and community resilience, Spearman rho was employed.

### 3. Results

Out of the 100 farmer-respondents, almost 2 out of 3 (65%) were males. This implies that the male workforce still dominates farming as the primary source of income, but females play a larger role and are more than a third of the total. In terms of age, less than the majority (46%) were aged 50-56 years old from generation X. This implies that farmers were relatively young. Almost all (92%) were married. Suffice to assume that farming has become a shared responsibility among farmer communities. It can be further assumed that farming continues to be a potent entry to capacitate households in terms of climate change adaptation practices (Table 1).

Table 1. Socio-demographic profile of the respondents

Characteristics	Frequency n= 100	Percentage
Gender		
Male	35	35
Female	65	65
Age		
38-44	34	34
46-49	20	20

50-56	46	46
<b>Civil Status</b>		
Married	92	92
Single	3	3
Widow	5	5

### 3.1 Communication Dynamics

A survey to determine the extent of communication dynamics employed by Agro-Eco Philippines in the community was conducted. Communication dynamics had four dimensions: communication willingness, communication behavior, communication quality, and communication commitment. Respondents were asked to rate given statements in each dimension using a five-point level of agreement with 1 as strongly disagree; 2 as disagree; 3 as somewhat agree; 4 as agree; and 5 as strongly agree. Specifically, identifying the extent of communication dynamics was through the levels that got the most responses in terms of Mode.

Table 2. Distribution of communication dynamics

<b>EXTENT OF COMMUNICATION DYNAMICS</b>	<b>FREQUENCY</b> <b>n = 100</b>
Very High	<b>100</b>
High	0
Moderate	0
Low	0
Very Low	0
<b>TOTAL</b>	<b>100</b>

#### 3.1.1 Communication Willingness

Communication willingness refers to the understanding built between Agro-Eco Philippines and BAEFA.

As illustrated in Table 2, extent of communication dynamics, in the area of communication willingness, all (100) of the farmer respondents gave a set of responses with a very high rating (5.00) to all five questions about the indicator. This means they perceived general agreement of a very high extent of communication willingness with the Agro-Eco Philippines. Based on the result, it showed that farmers strongly agree that the Agro-Eco Philippines is willing to share climate change information that may be helpful to the community; is not reluctant to engage in communication; has developed proper linkage of information sharing

among the community, provided a technical expert to assist us in resolving problems; and lastly, gave feedback on the climate change and preparedness information we shared to them.

Since communication willingness refers to its openness to communicate relevant information honestly and frequently, according to Peng (2010), some organizations are unwilling to share information. However, sometimes, due to pressure from other partners, they have to share it. But the results show that communication between Agro-Eco Philippines and BAEFA happened most of the time. The communication activities, meetings, training, and seminars were convened and facilitated by Agro-Eco Philippines.

It is also important to consider that none of the respondents gave a low response about communication willingness. The results generated indicate that they did not assign responses under neutral and negative ranges.

Furthermore, The frequency of the five statements under the extent of community willingness. Based on the data, it can be inferred that all five statements garnered a response of strongly agree based on the majority of the respondents. This implied that the farmers viewed that they well received the communication willingness with the Agro-Eco Philippines.

And also, it is prominent from the result that three statements got a very high-level response from all (100%) of the respondents with no other lower ratings. All of them have been highly positive with the willingness of the Agro-Eco Philippines to share about the climate change that can be helpful to the community (100%); to develop proper linkage of information sharing in the community (100%), and to give feedback about climate change and preparedness information they have shared (100%).

Likewise, almost all respondents have very good reception about the willingness of the Agro-Eco Philippines to engage in communication without reluctance (93%) and to provide technical experts that assist them in resolving problems (95%).

### **3.1.2 Communication Behavior**

All respondents gave positive responses about communication behavior. The data revealed that the mode results on the said indicator could only be either very high (48%) or high (52%), in which there was no assigned score for the neutral and negative response.

It is important to notice that the respondents responded mostly of 4.00, which means high to the three questions of the indicator. They highly agree that Agro-Eco Philippines keeps them informed about events/changes that may affect them; information communicated between them and the Agro-Eco Philippines is relevant, and the Agro-Eco Philippines prefer face-to-face communication than other media when exchanging information.

In addition, the result states that they strongly believed or very highly agreed (5.00) that Agro-Eco Philippines frequently sends them information about climate change; it meets them often to resolve problems between them, and it developed proper communication media for their communication.

Having frequent communication by using communication channels could lead to communication effectiveness and efficiency, according to Wenwen&Bayu (2015). Since the function of communication by Agro-Eco Philippines was only limited to monitoring and providing updates, Agro-Eco Philippines provides an avenue for them to discuss matters, conducting training and seminars that would be helpful in their organization through technology. The data shows that Agro-Eco Philippines meets the members of BAEFA to discuss face-to-face to be more aware of their duties because in-depth discussions about the different phases of disaster happen during meetings. Although they were inclined to use traditional mediums, they highly recognize the use of new technologies, the power of social media, messaging applications in terms of instant message delivery. This made the communication more efficient because they communicated with the point of a contact person.

In terms of frequency, the majority (58%) of the respondents gave a mode of very high response (5.00) to three statements and high response (4.00) to the remaining three statements under the indicator of communication behavior. It is evident that they highly recognized those given communication behaviors while dealing with the Agro-Eco Philippines.

More specifically, all of the respondents acknowledged the very high (5.00) perception about the Agro- Eco Philippines as it frequently sends information about climate change (100%) and it develops proper communication media for their communication (100%). And also, 53% of them strongly agreed that Agro-Eco Philippines meets them frequently to resolve the problem between them.

On the other hand, most (78%) of the respondents had concurred high extent (4.00) on the activities of Agro-Eco Philippines in terms of their efforts to visit frequently to discuss problems with the respondents (78%); to keep them informed about the events that may affect them (58%), and to have face to face communication aside from the other media when exchanging information (58%).

### **3.1.3 Communication Quality**

The results elucidate that almost all (93%) respondents gave a very high rating (5.00) for communication quality. Meanwhile, the remaining 7 respondents recognized the same indicator to be in high rating (4.00). No respondent perceived either moderate or negative responses on the communication quality established by the Agro-Eco Philippines.

The results also showed that in communication quality, all questions got a mode rank of 5.0, which means very high in all questions. They agreed that the information communicated between them and the Agro-Eco Philippines was timely, adequate, credible, and relevant. They also confirmed that Agro-Eco Philippines had known them for a while to notice their demand and needs, and it has a strong knowledge of their development. Communication quality dimensions served as the enhancers of the communication process. It looked at the role of communication from Agro-Eco Philippines towards BAEFA in satisfying the demand and expectations.

On the other hand, the frequencies of responses the communication quality indicator. Almost all (95%) respondents gave a very high rating (5.00) on the statement that the information

communicated between them and the Agro-Eco Philippines is credible. This implies that they greatly acknowledge the credibility of the information and sources disseminated to them by the Agro-Eco Philippines about climate change and preparedness.

Similarly, almost all (93%) respondents gave a very high (5.00) rating to the four statements on information communicated between them and the Agro-Eco Philippines. They very strongly believed that the information communicated between them and the Agro-Eco Philippines was timely; they know their demands, requirements, and expectations; it has known them for a while to notice their demands and needs, and it has strong knowledge on their development.

The majority (53%) of the respondents strongly agreed with the two statements that information communicated between them and the Agro-Eco Philippines was adequate and relevant.

### **3.1.4 Communication Commitment**

With the same result, all 100 respondents have perceived a very high (5.00) rating on communication commitment. It implies that they have generally experienced a very high intensive level of communication commitment from the Agro-Eco Philippines based on their interactions related to climate change.

The result determined the success of the communication process wherein Agro-Eco Philippines indeed supports BAEFA. The function of Agro-Eco Philippines revolved around providing and relaying information and monitoring the programs initiated by the NGO. They served as the "eye" of the whole organization. They created a harmonious working environment for all farmers.

On the other note, almost all (93%) of respondents have strongly agreed (5.00) to the five statements under communication commitment by the Agro-Eco Philippines. This denotes a very high extensive effort by the organization in establishing commitment with their communication to the respondents.

The highest frequency was observed on the three statements, where all of them gave a very high reception when it comes to commitment. All respondents very highly agreed that Agro-Eco Philippines supported them in getting the rightful information on matters related to improve easiness on running tasks; support them in getting the appropriate information on issues related to technology development, and the information they get from the Agro-Eco Philippines support them directly in project success rate.

The second highest frequency that they have a very high rating was on their perception that they got information from the Agro-Eco Philippines, which supports them directly in easiness on running task (95%). The lowest frequency was on the statement that the information they got from the organization supported them directly in technology development (93%). It is



also important to point out that none of them have a moderate to a very low perception of how extensive communication commitment they have experienced.

### 3.1.5 The Extent of Communication Dynamics

Results revealed that three of the indicators of communication dynamics between the Agro-Eco Philippines and the farmers have a mode of 5.00 with a descriptive equivalent of very high. These indicators are the following: communication willingness, communication quality and communication commitment. However, only communication behavior had a mode of 4.00 which means it has a descriptive equivalent of high.

In terms of frequency, the highest frequency with a very high (5.00) description was on both communication willingness (100%) and communication commitment (100%). It is being followed by the communication quality (93%) for the same description. On the other hand, 52 respondents have a high (4.00) description of the communication behavior.

Likewise, the overall Mode on the communication dynamics employed by Agro-Eco Philippines to the community was 5.00, with a descriptive equivalent of very high. This implies that the communication dynamics used by Agro-Eco Philippines to the community of Brgy. Bongabong was strongly perceived and observed. Noted by Johnson 2011; Moser 2010; Nerlich, Koteyko, and Brown 2010, effective communication among stakeholders can help identify problems, raise awareness, encourage dialogue, and influence behavioral change.

The result implies that the Agro-Eco Philippines had achieved significant interaction and communication with the farmers. As perceived by their stakeholders, the dissemination of information coming from Agro-Eco Philippines was effective. Thus, to effectively communicate climate change and appropriate strategies for responding to it, it is essential to understand how differently situated individuals and communities think about, interpret, and discuss its drivers and impacts (Africa Talks Climate, BBC World Service Trust 2010).

**Table 3. Extent of Communication Dynamics**

INDICATORS n = 100	VH	H	M	L	VL	Description
<b>Communication Willingness</b>	<b>100</b>	0	0	0	0	Very High
<b>Communication Behavior</b>	48	<b>52</b>	0	0	0	High
<b>Communication Quality</b>	<b>93</b>	7	0	0	0	Very High
<b>Communication Commitment</b>	<b>100</b>	0	0	0	0	Very High

OVERALL MODE

**Very High**

*Legend: VH-Very High; H-High; M-Moderate; L-Low; VL-Very Low*

### 3.2 Community Resilience

The second survey was conducted to assess the level of community resilience towards climate change of residents of Barangay Bongabong. It utilized the same five-point level of agreement where 5-strongly agree, 4-agree, 3-somewhat agree, 2-disagree, 1-strongly disagree.

Table 5 shows that there was a very high level of community resilience among respondents. All (100%) respondents displayed very high community resilience on climate change preparedness and adaptation. It is also very important to note that nobody from the respondents provided a lower rating in the said variable.

Table 4. Distribution of community resilience responses

LEVEL OF COMMUNITY RESILIENCE	FREQUENCY n = 100
Very High	<b>100</b>
High	0
Moderate	0
Low	0
Very Low	0
<b>TOTAL</b>	<b>100</b>

Based on the results gathered, Table 5 presents that out of 21 questions, 19 had a mode of 5.00, which means that almost all respondents answered strongly agree. The farmers responded very high on the following areas: people in my community feel like they belong to the community (100%); people in my community have hope about the future (100%); my community works with organizations and agencies outside the community to get things done (100%); people in my community communicate with leaders who can help improve the community (100%); people in my community are aware of community issues that they might address together (100%); people in my community discuss issues so they can improve the community (100%); people in my community work together to improve the community (100%); my community has priorities and sets goals for the future (100%); my community tries to prevent disasters (100%); my community actively prepares for future disasters (100%); people in my community are committed to the well-being of the community (92%); people in my community help each other (91%); my community has services and programs to help people after a disaster (88%); my community looks at its successes and failures so it can learn from the past (78%); people in my community know where to go to get things done (71%); my community develops skills and finds resources to solve its problems and reach its goals (67%); my community can provide emergency services during a disaster (56%); my community treats people fairly no matter what their background is (55%); and finally my community has effective leaders (55%). Leadership could be something that needs to be addressed.

However, one question has a majority response with a frequency of 100 respondents. It was rated 4.00 with a descriptive equivalent of high where the respondents-farmers agree that their community can get the services they need. The lowest Mode of 2.0, which means low, is shown in the question with the frequency of 78 respondents on the statement: my community has the resources to manage community problems (resources include money, information, technology, tools, raw materials, and services). It means that most of them felt to disagree with that particular area.

Table 5. Respondents' response to statements on community resilience

<b>STATEMENTS ON COMMUNITY RESILIENCE</b> <b>n = 100</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>	<b>RESPONSE</b>
<i>People in my community feel like they belong to the community</i>	100	0	0	0	0	Strongly Agree
<i>People in my community are committed to the well-being of the community.</i>	92	7	1	0	0	Strongly Agree
<i>People in my community have hope for the future</i>	100	0	0	0	0	Strongly Agree
<i>People in my community help each other.</i>	91	8	1	0	0	Strongly Agree
<i>My community treats people fairly no matter what their background is.</i>	55	45	0	0	0	Strongly Agree
<i>My community has the resources it needs to solve community problems (resources include money, information, technology, tools, raw materials, and services).</i>	0	17	8	75	0	Disagree Strongly
<i>My community has effective leaders.</i>	55	45	0	0	0	Agree
<i>People in my community can get the services they need</i>	0	100	0	0	0	Agree
<i>People in my community know where to go to get things done</i>	71	29	0	0	0	Strongly Agree
<i>My community works with organizations and agencies outside the community to get things done.</i>	100	0	0	0	0	Strongly Agree
<i>People in my community communicate with leaders who can help improve the community</i>	100	0	0	0	0	Strongly Agree
<i>People in my community are aware of community issues that they might address together.</i>	100	0	0	0	0	Strongly Agree
<i>People in my community discuss issues so they can improve the community.</i>	100	0	0	0	0	Strongly Agree
<i>People in my community work together to improve the community.</i>	100	0	0	0	0	Strongly Agree
<i>My community looks at its successes and failures so that it can learn from the past.</i>	78	22	2	0	0	Strongly Agree
<i>My community develops skills and finds resources to solve its problems and reach its goals</i>	67	33	0	0	0	Agree

<i>My community has priorities and sets goals for the future.</i>	100	0	0	0	0	Strongly Agree
<i>My community tries to prevent disasters</i>	100	0	0	0	0	Strongly Agree
<i>My community actively prepares for future disasters</i>	100	0	0	0	0	Strongly Agree
<i>My community can provide emergency services during a disaster.</i>	56	44	0	0	0	Strongly Agree
<i>My community has services and programs to help people after a disaster.</i>	88	12	0	0	0	Strongly Agree

### 3.2.1 Level of Community Resilience toward Climate Change Adaptation

The second objective was to determine the level of community resilience towards Climate Change of Barangay Bongabong in terms of ascertained community resilience level. The data on the level of community resilience towards climate change of Barangay Bongabong are presented in Table 6. Shown are the mode rank and the descriptive equivalent of this variable.

Based on the data, the overall Mode of 5.00 revealed that the level of community resilience towards climate change in terms of ascertaining community resilience level was very high. This signifies that the level of community resilience towards Climate Change of Barangay Bongabong was strongly evident. It is pointed out by Palttala&Vos, 2011 that communication is not only a fluent and fast flow of information between organizations, but it should also mainly relate to how response organizations can serve their stakeholders to meet the expectations of citizens and provide reliable information about the crisis.

Table 6. Level of Community Resilience toward Climate Change

INDICATORS n = 100	VH	H	M	L	VL	Description
Communication Willingness	<b>100</b>	0	0	0	0	Very High
<b>OVER ALL MODE</b>						<b>Very High</b>

*Legend: VH-Very High; H-High; M-Moderate; L-Low; VL-Very Low*

### 3.2.2 Relationship between Extent of Communication Dynamics and Level of Community Resilience toward Climate Change

The third objective was to test the relationship between the extent of communication dynamics and community resilience toward climate change in Table 7.

The overall Mode for communication dynamics of the Agro Eco was 5.00, and similarly, the overall mode rank obtained for community resilience toward climate change of the community was 5.00. The Spearman correlation coefficient was  $-.014$ , which means it has a very weak negative correlation between the two variables. Also, using Spearman rho at 0.05 level of significance, it was found that the computed p-value of  $.887$  is greater than the alpha value. Thus, the statement of no significant relationship between the extent of community dynamics and the level of community resilience toward climate change is hereby accepted, but judgment is reserved.

This signifies that the communication dynamics employed by Agro-Eco toward the community have no significant effect on the development of community resilience toward climate change adaptation. The respondents revealed that there is already an established system of communication between Agro-Eco Philippines and Bongabong Agro-Eco Farmers Association (BAEFA). They communicate regularly through meetings, but they also update each other daily with information technologies. They have ways to validate and verify the information. Although some things need to be improved in how the Agro-Eco Philippines towards BAEFA, they are still eager to find ways to improve what communication linkages they have now. Most of them already have an idea of what each side needs to do to communicate better. They need to discuss it among themselves for these ideas to materialize into solutions against communication barriers. Because of awareness and transparency, the organizational structure enabled them to communicate easily among themselves. However, the framework will only ease the confusion and provide people with a structured and straightforward atmosphere to interact. It cannot help in developing a good relationship, which is important in communication as well. Agro-Eco Philippines frequently meets with BAEFA leaders and is open to one another when it comes to group sustainability. However, when the matter at hand is in contact itself, they are somewhat hesitant with each other. Often, they have unarticulated beliefs, one from the other. Yet considering all these factors, both Agro-Eco Philippines and members of BAEFA share reliable information.

Based on Pfefferbaum et al. (2015), resilience can be taught, and it can be learned. Creating awareness of community resilience can be motivating, especially among those who are invested in, or want to become invested in, their community. Ideally, community resilience activities and processes offer opportunities to convene, collaborate, and communicate with other community residents; to identify and affirm shared values, interests, and goals; to engage in critical reflection and skill development; and to join in efforts to build and sustain resilience over time and across adversities.

Also, previous studies have discussed the importance of trust in Inter-Organization Communication (IOC) management framework. According to the literature, trust can be strengthened by respecting each other's autonomy and maintaining cross-boundary information sharing. On the contrary, trust depreciates when information is misused and loses autonomy (Yang & Maxwell, 2011). The means of communication for Agro-Eco Philippines and Bongabong Agro-Eco Farmers Association became increasingly dependent on information and communication technologies. According to Crozier (2012), communication and information technologies complicated communication, although it was not easily noticeable. As much as it

helped the faster exchange of information and communication be more accessible to people, it opened new information dynamics in an organizational setting. Efficient communication is a fluent and rapid flow of information between organizations; it should mainly relate to how organizations can respond to their stakeholders: meeting citizens' expectations and providing reliable information about the crisis (Palttala&Vos 2011, 317). It could also be that Filipinos, by nature, are resilient or can adapt easily to any condition.

Table 7. Significant Relationship between the Communication Dynamics and the Developing Community Resilience

Variables	Over- all Mode	Spearman Correlation Coefficent	Values		Decision
			p- value	α- value	
<b>Communication Dynamics</b>	5				
<b>Developing Community Resilience</b>	5	-0.014	0.887	0.05	Ho is Accepted

#### 4. Discussion

The study's primary purpose was to determine the extent of communication dynamics employed by Agri-Eco towards the farmers in terms of the four indicators, namely: communication willingness, communication behavior, communication quality, and communication commitment based on the Inter-Organization Communication (IOC) management framework. Also, it aimed to determine the resilience level of the community toward climate change adaptation. The communication dynamics were correlated with the community's resilience level toward climate change adaptation among the Agro-Eco farmers.

Through a survey, the study was conducted among 100 randomly sampled farmers of BAEFA in Brgy. Bongabong, Pantukan, Davao de Oro. Two sets of questionnaires were administered to assess the extent of communication dynamics and the resilience level toward climate change. Data gathered were statistically treated using mode and Spearman rho. The mode ranks for the four indicators of communication dynamics were as follows: communication willingness and communication commitment tied to have the uppermost Mode of 5.00. It is followed by communication quality with data having a mode of 5.00. Lastly, communication behavior also has a Mode of 5.00.

All indicators mentioned have a descriptive equivalent of very high. The overall Mode on the communication dynamics employed by Agro-Eco Philippines to the community was 5.00, with a descriptive equivalent of very high. On the other hand, the overall Mode of 5.00 revealed

that the level of community resilience towards climate change adaptation in terms of community resilience level was very high. Using Spearman rho at 0.05 level of significance, it is found that the computed p-value of .887 was greater than the tabular alpha-value of 0.05. Thus, the statement of no relationship between the extent of communication dynamics and the level of community resilience toward climate change is hereby accepted, but judgment is reserved.

## 5. Conclusion

Agri-Eco Philippines' extent of communication dynamics was found highly effective, and the farmers' community resilience toward climate change was also highly evident. However, these were not significantly correlated. These results signify that even though there is a very high result of communication dynamics towards Bongabong Agro-Eco Farmers, it is not guaranteed that the farmers will be resilient towards climate change. Furthermore, one of the challenges in community communication is that awareness and knowledge do not always translate into action; thus, the hypothesis is that Agri-Eco Philippines' communication dynamics increase community resilience towards climate change adaptation of residents in Brgy. Bongabong, Pantukan, Davao de Oro was rejected but judgment is reserved. It could also be that Filipinos can bounce back easily by nature, culturally, or simply relentless. However, future studies with a larger sample, different parameters, and instruments may yield different results.

The following recommendations are suggested:

1. In the context of communication dynamics, a different study should consider its usability. A study on communication dynamics using in-depth interviews to evaluate the impact of communication dynamics on community resilience among Agri-Eco Philippines' members;
2. Communication dynamics help Agri-Eco Philippines realize what needs to be done to enhance the current conditions of their communication. It will help them achieve their objectives and to have a much more fruitful collaboration of its members. For instance, they can hold a general meeting to talk about communication-related issues and how they can improve the exchange of information between their organization;
3. Since communication is important in their work, improving the way they communicate would be beneficial to their resiliency operations. They were facilitating more communication-related activities that could improve how Agri-Eco Philippines communicate with their members;
4. IOC management framework could be tested with a larger sample; and
5. Climate change adaptation study using culture as a lens may be able to explain resiliency.

## References

- Dilley, M., Chen, R. S., Deichmann, U., Lerner-Lam, A. L., & Arnold, M. (2005). Natural disaster hotspots: a global risk analysis. The World Bank.
- Hall, N. L., Taplin, R., & Goldstein, W. (2010). Empowerment of individuals and realization of community agency: Applying action research to climate change responses in Australia. *Action Research*, 8(1), 71-91.

- Jose, A. M., & Cruz, N. A. (1999). Climate change impacts and responses in the Philippines: water resources. *Climate research*, 12(2-3), 77-84.
- Moser, S. C. (2010). Communicating climate change: history, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change*, 1(1), 31-53.
- Odjugo, P. A. (2010). Regional evidence of climate change in Nigeria. *Journal of geography and regional planning*, 3(6), 142-150.
- Onyeme, N. F., &Iwuchukwu, J. C. (2012). Responsiveness of extension workers to climate change in Anambra State, Nigeria. *Journal of Agricultural Extension*, 16(1), 88-102.
- Palttala, P., &Vos, M. (2012). Quality indicators for crisis communication to support emergency management by public authorities. *Journal of Contingencies and Crisis Management*, 20(1), 39-51.
- Pfefferbaum, R. L., Pfefferbaum, B., Van Horn, R. L., Klomp, R. W., Norris, F. H., &Reissman, D. B. (2013). The communities advancing resilience toolkit (CART): An intervention to build community resilience to disasters. *Journal of public health management and practice*, 19(3), 250-258.
- Redza, A., Nordin, S. M., Saad, S., &Wahab, H. (2014). Inter-organization communication management between organizations in a subsidized fertilizer market in Malaysia. *UMK Procedia*, 1, 33-41.
- Rizal, A. R. A., Nordin, S. M., Saad, M. S. M., &Wahab, H. (2014). Inter- Organization Communication Management between Organizations in Subsidized Fertilizer Market in Malaysia. *Global Business & Management Research*, 6(3).
- Solomon, S., Manning, M., Marquis, M., & Qin, D. (2007). Climate change 2007-the physical science basis: Working group I contribution to the fourth assessment report of the IPCC (Vol. 4). Cambridge university press.
- Zalameda, V. (2015). Climate Change Adaptation Strategies in the Philippines-a Case Study within the Leyte Region.