BELIEFS ON NATURAL DISASTER AND MITIGATION PRACTICES OF ILOKANOS IN SANTA MARCELA, APAYAO

Abstract

Ilocanos in the Philippines have their unique beliefs and practices to withstand its vulnerability to the fast-changing climate conditions. This study documented the different beliefs and mitigation practices of the Ilocanos in Santa Marcela, Apayao on natural disasters. The researcher utilized a phenomenological research design using the interview and documentation as methods. The findings revealed that the ilocanos have numerous beliefs and mitigation practices. The inhabitants depend on the environment by observing natural phenomena like plants clouds and animals. They also greatly believe in the beliefs or traditions of the elders.

In the light of the findings and conclusions, the following are forwarded as recommendations: conduct more studies regarding disaster mitigation practices; further investigation, analysis, and documentation to value the importance of indigenous knowledge when it is being combined in policymaking and curriculum development; and the beliefs and practices that have scientific basis should be identified so that this can be employed with Disaster Risk Reduction.

Keywords: beliefs mitigation practices, and natural disasters

Introduction

The Philippines, located along the Pacific Ring of Fire, is one of the most disaster-prone countries in the world. Its geographic location exposes it to frequent and intense natural disasters such as typhoons, earthquakes, volcanic eruptions, and phenomena like El Niño and La Niña. These disasters result in significant economic losses and the destruction of lives and infrastructure, underscoring the urgent need for effective disaster risk reduction and management (DRRM) practices from the national level to the grassroots【1】【2】.

The Cordillera Administrative Region (CAR), situated in Northern Luzon, is no exception to these calamities. Known for its rich cultural heritage and mountainous terrain, it is highly vulnerable to typhoons, landslides, and flooding. In 2009, Typhoon Pepeng caused widespread devastation in the region, resulting in 309 deaths and over ₱1.298 billion in damages to infrastructure and agriculture【3】. Similarly, the province of Apayao has repeatedly experienced severe disasters, including the onslaught of Typhoon Lawin (Haima) in 2016 and Typhoon Ompong (Mangkhut) in 2018, which left extensive damage to livelihoods, public facilities, and agricultural lands【4】【5】.

Amid these challenges, Filipinos have long relied on traditional knowledge systems to adapt to and mitigate the effects of disasters. Communities across the country develop localized

strategies rooted in their cultural practices and cumulative experiences. In rural areas, such as the Ilokano communities of Apayao, indigenous knowledge plays a critical role in disaster preparedness. Ilokanos, for example, use "weather lore" — a practice involving careful observation of natural phenomena such as cloud movement, wind direction, and the behavior of animals and insects — to predict weather changes and impending disasters (Galacgac & Balisacan, 2009)【6】. This knowledge, often transmitted through generations, is integral to their resilience against calamities (Burghart, 2000)【7】.

Beyond prediction, Ilokanos employ various mitigation practices to withstand disasters. These include storing food supplies, preparing shelters, and engaging in community cooperation to fortify structures or manage water resources. However, these practices remain undocumented and are at risk of being forgotten due to modernization and the increasing reliance on technology【8】【9】.

To address this gap, the Department of Education (DepEd) has issued guidelines integrating DRRM education into the school curriculum, as mandated by the Philippine Disaster Risk Reduction and Management Act of 2010. Despite these efforts, indigenous knowledge, such as that of the Ilokanos, remains underrepresented in formal disaster education programs【10】. A deeper understanding of Ilokano beliefs and practices can offer valuable insights for creating inclusive DRRM strategies that blend traditional and scientific approaches.

This study, through an ethnographic method, aims to document and analyze the disaster-related beliefs and practices of the Ilokano community in Santa Marcela, Apayao. The findings will provide a basis for integrating these cultural practices into the DepEd curriculum, science education, and policy frameworks to promote more comprehensive and culturally sensitive DRRM initiatives.

Statement of the Problem

This study generally aimed to document the different disaster risk reduction management and mitigation beliefs and practices of Ilokanos in Santa Marcela, Apayao.

Specifically, it aimed to answer the following questions:

1. What are the beliefs of Ilokanos on the occurrence of natural disasters?
2. What are the mitigating practices of Ilokanos on the occurrence of natural disasters?
3. What are the lessons learned from Ilokanos on the occurrence of natural disasters?
4. What Information Education and Campaign material can be developed to promote the beliefs on Natural Disaster and Mitigation Practices of Ilokanos in Santa Marcela, Apayao?

Theoretical and Conceptual Framework

This study was guided by Edmund Husserl's **Phenomenological Theory**, which seeks reality in individuals' narratives of their lived experiences of phenomena. While it has been interpreted in various ways by notable philosophers such as Kant, Hegel, Heidegger, and Husserl, phenomenology can broadly be understood as a means of exploring personal experiences, beliefs, and practices [11]. The term "phenomenology" originates from the Greek word *phainein*, meaning "to appear," and was first introduced by Immanuel Kant in 1764. Kantian phenomenology aligns with constructivist philosophy, emphasizing that phenomena are constructed by cognitive subjects—humans—who perceive and interpret their experiences [11].

At the heart of the studies, Cilesiz (2009), Husserl (1970), and Moustakas (1994) describe phenomenology as a methodological framework that seeks to understand individuals' lived experiences without invalidating indigenous perspectives and worldviews. Its emphasis on human experience provides a lens for exploring indigenous knowledge systems, offering an opportunity to inform research practices effectively. The phenomenological attitude facilitates a deeper understanding of the essence of human experience by setting aside biases and assumptions [12].

Phenomenological research views participants as co-researchers because of their in-depth knowledge and interpretations of their lived experiences. This characteristic makes phenomenology particularly well-suited for investigating indigenous knowledge, especially in areas such as disaster risk reduction (DRR). By focusing on the life-world as experienced by participants, phenomenology bridges the gap between scientific inquiry and indigenous narratives, enabling a comprehensive approach to research in this field [13]. This is particularly relevant in the context of DRR, where local knowledge and cultural insights can significantly contribute to understanding and managing the impacts of disasters. The integration of indigenous knowledge into DRR frameworks has been shown to enhance community resilience and promote culturally sensitive disaster preparedness strategies [14][15].

Research Paradigm

The major concern of the study is to identify the disaster-risk reduction and mitigation practices and beliefs of Ilokanos in Santa Marcela, Apayao.

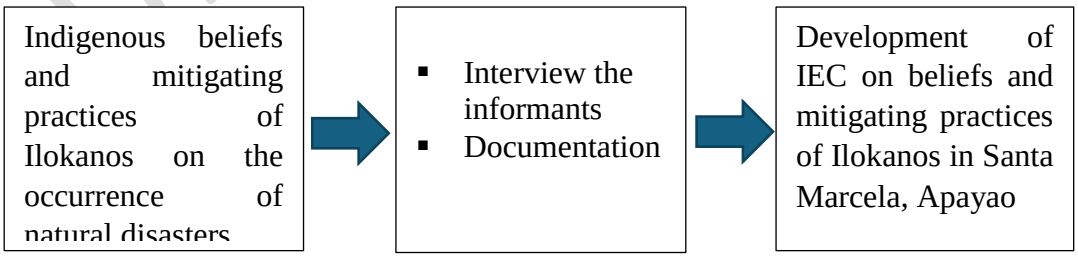

Figure 1. A research paradigm showing the process flow of the study.

Research Design

This study employed an ethnographic research design using non-participant observation, Key Informant interviews, and documentary as methods. According to Schumacher (2005), the qualitative specific procedures are identified during the research rather than specified ahead of time. In an ethnographic study, the research relies on observation, interviewing, and document analysis, or a combination of these, to provide an in-depth understanding of what is studied. It begins with a planning phase, in which general research questions, the kind of site, and the types of participants needed are identified.

Locale of the Study

This study was conducted in Santa Marcela, a municipality in the landlocked province of Apayao, located in the northern Philippines. It encompasses 13 barangays and covers an area of 196.32 square kilometers (75.80 square miles), representing 4.36% of Apayao's total area.Santa Marcela is home to a population of approximately 13,317 residents, primarily composed of the Ilokano people, who are deeply rooted in traditional practices. The municipality is characterized by its rich cultural heritage and agricultural economy, set against a backdrop of mountainous terrain.

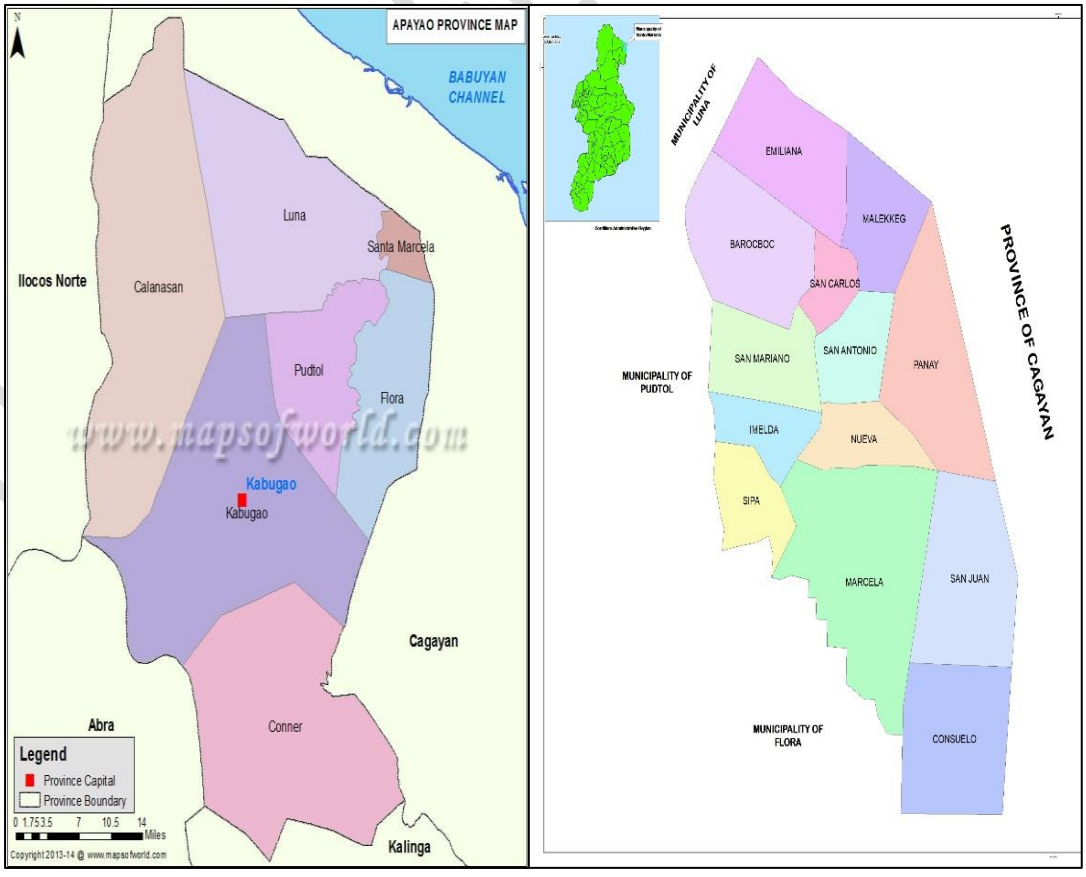

Figure 2: The Map of Apayao and Santa Marcela

Participants and Sampling Procedure

Slovin's Formula was utilized in this study to determine the appropriate sample size for participants. Purposive sampling was employed, focusing on Ilokano elders in Santa Marcela, Apayao. The selection process involved collaborating with the Punong Barangay of each barangay to identify potential participants based on specific criteria established for the study. Participants were required to be Ilokano residents of Santa Marcela, aged 30 years or older, and knowledgeable about their cultural beliefs and practices. This approach ensured that the selected informants were well-informed and representative of the community's cultural heritage.

List 1-: Profile of the Informant

Informant	Code	Age
Informant #1	A01	32
Informant #2	A02	40
Informant #3	A03	38
Informant #4	A04	40
Informant #5	A05	59
Informant #6	A06	30
Informant #7	A07	33
Informant #8	A08	57
Informant #9	A09	49
Informant #10	A10	63
Informant #11	A11	34
Informant #12	A12	39
Informant #13	A13	34
Informant #14	A14	52
Informant #15	A15	37
Informant #16	A16	39
Informant #17	A17	43
Informant #18	A18	63
Informant #19	A19	71
Informant #20	A20	34
Informant #21	A21	39
Informant #22	A22	42
Informant #23	A23	45
Informant #24	A24	49
Informant #25	A25	81
Informant #26	A26	62

Data Gathering, Instrument, and Procedure

The study utilized diverse approaches such as open interviews and group discussions in collecting data. A guided interview and a community field walk were used to guide the discussion, and a digital recording was also used to document the responses of the participants in the study.

The researcher obtained permission from the proper authorities such as the head of the community or the captain of the area and the municipal mayor before conducting the study. After the interviews conducted by the researcher, the information gathered was examined.

Qualitative Data Analysis

The narratives and experiences of the informants were coded and analyzed to identify the themes that gradually emerged. The lived experiences of the informants are guided by Colaizzi's procedural steps (Colaizzi, 1978 in Speziale& Carpenter, 2007 as cited by Castro, 2010) revealed the nature of the phenomena being studied. Colaizzi emphasized the following procedural steps: 1) Describe the phenomenon of interest; 2) Collect the participants' descriptions of the phenomenon; 3) Read all participants' descriptions of the phenomenon; 4) Return the original transcripts and extract significant statements; 5) Try to spell out the aggregate formalized meanings into clusters or themes 7) Write an exhaustive description; 8) Return to the participants for validation of the description, and; 9) if new data are revealed during the validation, incorporate them into an exhaustive description.

Rigor in Qualitative Research

After analyzing the data being collected, the researcher went back to the informants to validate the result.

Ethical Considerations

The researcher observed ethical considerations by keeping the confidentiality of the informants. The researcher considered securing free prior informed consent and attached the PI form in the appendix.

RESULTS AND DISCUSSION

Beliefs of Ilokanos on the Occurrence of Natural Disasters

Table 1: Beliefs of the Ikocanos on the Occurrence of Natural Disasters

Belief of Ilokanos		Corresponding Natural Disaster
Local Terms	**English Translation**	
a. *Nu makita dagiti lumugar nga ti nangisit nga ulep ket alistu iti panagkuti na manipud load nga agpadaya, adda bagyo a dumteng,*	When the inhabitants observe that the color of the cloud is turning black and moving fast from West traversing East, they expect that a disaster will occur.	Typhoon
b. Nu dagiti sallapingaw (maysa nga klase ti tumatayab) ket nababati panagtayab da, adda umasideg nga dakes a tiyempo.	When they observe that *sallapingaw,* a kind o bird, are flying low above the ground, a bad weather is expected to come.	Typhoon
c. *Nu dagiti tuwato ket nababa ti tayab da nga kasla agabal-abal, umasideg ti tudo.*	When dragonflies are flying low, rain is expected to come.	Typhoon
d. *Nu nagiti kuton ket agkarayam da nga agpangato nga bagkabagkatda ti kanen da, adda napisa nga tudo nga pagtaudan ti layus.*	When they observe that small ants go to higher ground carrying their food, they believe that heavy rain will come and can cause flood.	Typhoon
e. *Dagiti kuryat ket tumagari, adda umasideg a didigra.*	Disaster may come if crickets that usually live in the trees produce weird sounds.	Typhoon
f. *Nu dagiti pusa ket mabasa, agtudo. Nu met agkarainom da, agtikag.*	Cats are ordinarily seen in the community. When cats got wet, they are expecting a flood and when they drink water several times, they expect a drought to happen.	Typhoon and drought
g. *Nu agsabong ti kawayan, agtikag*	If the bamboo grass bear flowers, drought is expected to come.	Drought
h. *Nu ti gingined ket mapasamak iti parbangon, agtudo. Nu met ti gingined ket*	If earthquake happens in the early morning, it will rain but if this happens at dusk, drought is expected to happen.	Rain and drought

mapasamak ti sardam, agtikag		
i. *Nu dagiti ngilaw ket kumagat idi alaldaw, adda umay a madi a tyempo*	If houseflies suck during daytime, a bad weather is expected to come.	Typhoon
j. *Nu rumwar dagiti Alinta manipud idi daga, adda madi a tiempo nga mapasungad*	If earthworms come out from the soil, expect a bad weather.	Typhoon

Table 1 presents the beliefs of the Ilokanos in Santa Marcela, Apayao on the occurrence of natural disasters. It shows the local name of the beliefs, its English translation, and the corresponding natural disasters. It is revealed that they have numerous beliefs based on the changes in nature. Dark, fast-moving clouds from west to east signal impending disasters, while flowering bamboo predicts drought, and earthquakes are believed to bring rain if in the morning or drought if at dusk. Animal and insect behaviors are also indicators: low-flying birds and dragonflies, ants moving to higher ground, houseflies sucking during the day, earthworms surfacing, crickets making unusual sounds, and wet or water-drinking cats are all seen as signs of bad weather, rain, flooding, or drought.

One of the verbalizations of the informants is as follows:

Ilokano Female, 43 y/o: *Adu ti sinyales ti iyuumay ti didigra. Nu tay kuton ket agkakarayam nga mapan ti nangatngato nga daga, nu han manggeg uni ti billit, ken nangisit ti kulay ti ulep, kayat na saw-en, agtudo.* (There are many signs for us to know the occurrence of disasters. If ants are moving to a higher ground, birds can't be heard, and the color of the clouds is dark, there will be a typhoon or a heavy rain).

In earlier times, when the community lacked access to modern technologies such as radios or televisions to provide updates on weather conditions, the Ilokanos relied on their innate ability to observe natural signs for predicting calamities. This aligns with findings by IFAD, which emphasize that indigenous communities depend on changes in the environment, such as the behavior of plants, clouds, winds, and animals, to anticipate weather events [16]. For example, the Ilokanos believe that vast black clouds moving swiftly from the west to the east are an indication of an impending typhoon. This belief is consistent with the study of Irfanullah and Motaleb, which documented that prolonged eastward winds are perceived by the indigenous people of West Mamprusi, Ghana, as an indication of rainfall [17]. Similarly, Hiwasaki reported that communities in Timor Leste and Indonesia observe cloud and wind patterns as reliable predictors of heavy rain [18].

Animal behavior also plays a significant role in the Ilokanos' disaster prediction practices. The absence of birds or their sudden silence is regarded as a sign of an approaching typhoon. This is similar to findings from Timor Leste and Indonesia, where indigenous people use unusual bird behavior as indicators of storms or droughts [18]. Cats are also considered harbingers of natural events. When cats remain still or act unusually, it is believed to signal an impending typhoon. This belief stems from the idea that animals have heightened sensory perceptions that allow them to

detect changes in the environment. Research conducted in Ghana supports this, showing that bird movement into or out of a community often signals the onset or absence of rain [17].

Insects, particularly ants, are another source of environmental indicators. The Ilokanos observe that when black ants ("taggam") climb to higher ground or enter homes, it signals an approaching typhoon or heavy rains. This belief mirrors findings by Irfanullah and Motaleb, who documented that ants moving upland from streams indicate imminent rainfall and potential flooding [17]. The survival instincts of these insects make them a key natural indicator for communities like the Ilokanos.

Plant behavior, specifically the flowering of bamboo, is also believed to predict natural disasters. The Ilokanos associate bamboo flowering with the onset of drought or "tikag," explaining that the plant dies off after flowering and regenerates over the next three years. This observation is consistent with studies in northeastern India, where bamboo flowering is viewed as a precursor to famine and other natural calamities [19].

These traditional practices demonstrate the Ilokanos' deep understanding of their environment and their ability to utilize natural signs for disaster preparedness. Similar practices worldwide highlight the universality of indigenous knowledge as a complement to modern meteorological tools. The Sendai Framework for Disaster Risk Reduction emphasizes the integration of indigenous knowledge with scientific methods to enhance disaster resilience [20].

The Ilokanos have another belief that when they observe small black ants, locally known as "taggam," moving up to houses or higher ground, it signals the onset of the rainy season or a coming typhoon. These ants are commonly seen in the community, and like birds, the residents attribute survival instincts to them, believing that they move to higher ground for safety from the anticipated disaster. This belief is supported by the study of Irfanullah and Motaleb (2011), which revealed that when ants leave the highland areas and move to lowlands near streams or rivers, it indicates little rain and no flooding, whereas their movement upland signifies heavy rainfall and potential flooding [21]. Thus, the movement of ants is viewed as a dual indicator of both impending rainfall and drought conditions.

Additionally, the Ilokanos associate the flowering of bamboo plants with the occurrence of "tikag," or drought. According to the informants, when drought is imminent, bamboo shoots will die, and the flowers will fall to the ground after approximately three years, at which point new bamboo shoots will emerge. This belief is consistent with the study of Naresh (2019), which reported that bamboo flowering is considered an omen of natural calamities, including droughts and famines, in several northeastern states of India [19].

Mitigating Practices of Ilokanos on the Occurrence of Natural Disasters

Table 2: Mitigating Practices of the Ilokanos in Santa Marcela, Apayao on the occurrence of natural disasters

Natural Disasters	Mitigating Practices	Local Term	English Term
All types of disasters	The Ilokanos strongly believe that the one who can protect them during calamities is the Lord.	*Dagiti ilokano ket dakkel pammatida nga ni Apo ti mangisalakan kanyada nu adda ti didigra.*	Praying to the Lord
Typhoons	During typhoons, Ilokanos sprinkle vinegar or holy water inside their house to prevent being hit by lightning	*Nu adda bagyo, iwaris da ti suka wennu nabenditaan nga danum iti uneg ti balay da tapnu haan da a makimat*	Sprinkling vinegar and holy water
All types of disasters	If they heard or knew that a typhoon will come, they will instantly store their food. Foods that can easily cook are being prepared by the families of the community such as banana, sweet potato cassava, and other root crops.	*Nu mangngeganda nga adda ti bagyo, agisaganada dagus ti kanenda nga alistu lang a maluto kas saba, kamute, kahoy, ken dadduma pay a bagbagas.*	Storing food and emergency supplies
Thunderstorm	During Typhoons, Ilokanos burn used clothes to stop thunder and lightning	*Nu adda ti bagyo, agpuorda ti anglem kas pagpasardeng ti kimat ken gurruod*	Burning used clothes
Thunderstorm	They don't wear red clothes when it is raining because they might get stike by lightning	*Saan da agusar iti nalabbada nga bado nu agtudtudo tapnu haan da makimat*	Avoid using red clothes because it attracts the lightning
All types of disasters	When they expect a calamity to come, they help	Agtitinnulongda nga agurnong ti danum a	Storing water

	each other in storing water to be used in cooking and cleaning themselves	panglungto kanenda ken pagbuggoda.	
Lightning	The ilokanos pick or uproot a *talahib* or wild sugarcane leaf and tie around their head to protect them from being harmed by lightning.	*Pumarot dagiti ilokano ti lidda sada iparaut ti ulo da tapnu haan da makimat/magurruod.*	Use talahib and wild sugarcane as protection
drought	They bath their cats so that it will rain	*Padigusen da ti pusa tapnu agtudo*	Bathing cats
Rain	Hanging the cloth of a recently deceased person on a pole outside the house is believed to stop the rain.	*Panangibitin ti nagbugsutan nga kawes ti natay iti kayo sa ipan ti ruwar ti balay ket mausar a pangpasardeng iti tudo*	Hanging a deceased person's cloth outside the house

Table 2 shows the practices of the Ilokanos in Santa Marcela, Apayao, to mitigate the effects of natural disasters, rooted in faith and traditional beliefs. The local terms of their practices with English translation are also provided. They rely on prayers and seek divine protection during calamities. Practical preparations include storing food and water, prioritizing easily cooked items like bananas and root crops, and cooperating as a community. Superstitious practices include sprinkling vinegar or holy water to prevent lightning, burning old clothes, and avoiding red clothing during storms. Unique rituals, such as tying talahib leaves around their heads for protection, bathing cats to induce rain, or hanging a deceased person's cloth to stop rain, reflect their deep connection to nature and cultural traditions.

Some of the verbalizations of the informants are as follow:

*Ilokano Male, 81 y/o: Nu adda ti natay ket saan nga agsardeng iti tudo, mangibitin kami ti nagpugsutan nan ga lupot iti ungkay ti kayo sa mi ipatakder iti ruwar iti balay tapnu sumasaat ti tiyempo. (*If someoine died and the rain won't stop, we hang his/her clothes in a pole and place it outside to stop the rain.)

Ilokano Female, 63 y/o: *Agparut kami ti lidda sa mi iparaut ti ulo mi tapnu haan kam makimat/magurruod*. (We pick or uproot a *talahib* or wild sugarcane leaf and tie around our head so we won't get strike by lightning.)

The Ilokanos in Santa Marcela, Apayao, have developed a unique system of beliefs and mitigation practices to protect themselves during natural disasters. Central to their survival strategy is a profound belief in divine protection, with the community trusting that the Lord can safeguard them from calamities. This aligns with the findings of Biermann et al. (2017), which emphasized the importance of spiritual beliefs in shaping the disaster preparedness strategies of indigenous communities worldwide [22].

In response to typhoons, the Ilokanos practice specific rituals that reflect both their spirituality and their practical knowledge of disaster management. For example, they sprinkle vinegar or holy water inside their homes to prevent lightning strikes, which is an act of invoking divine protection. Similarly, burning used clothes is believed to stop thunder and lightning, a practice observed in other cultures where fire or smoke is thought to serve as a protective force against natural hazards [21]. Moreover, avoiding the wearing of red clothes during rainstorms reflects their understanding of the natural forces at work, further aligning with similar beliefs in other cultures where certain colors are associated with attracting negative energies or disasters (Biermann et al., 2017) [22].

The Ilokanos also engage in food storage practices in preparation for incoming typhoons, a form of mitigation that underscores the importance of immediate food security during disasters. They store root crops such as bananas, sweet potatoes, and cassava, which can be easily prepared in case of emergencies. This practice is common in indigenous communities worldwide, where the preservation of food is a vital survival strategy in times of crisis [16].

In addition to food security, the Ilokanos demonstrate strong communal cooperation in times of disaster. When a calamity is expected, they assist each other in storing water for cooking and hygiene purposes, highlighting the collective nature of disaster preparedness. This communal approach to disaster risk reduction is consistent with studies by Hiwasaki (2014) and Nakashima et al. (2012), which report that indigenous communities frequently engage in collective efforts to mitigate disaster risks, especially in the face of extreme weather events [18][23].

Lessons Learned from the Ilokanos on the Occurrence of Natural Disasters

Table 3: Lessons Learned from Ilokanos on the Occurrence of Natural Disasters

Beliefs of the Ilokanos on Natural Disasters		**Mitigating Practices of the Ilokanos on Natural Disasters**	
Beliefs	**Lesson Learned**	**Mitigating Practices**	**Lesson Learned**
a. If the color of the cloud is turning black and moving fast from west traversing east they expect that a	The rapid movement and color of clouds can be a reminder to stay alert and observant in our	a. The Ilokanos strongly believe that the one who can protect them during calamities is the Lord.	This belief teaches us the power of faith and trust in times of crisis. While practical preparations are

disaster will occur.	environment. Whether in nature or in life, when we notice sudden changes or unusual patterns, it's important to take them seriously. Recognizing these signals early allows us to prepare and act before a crisis hits.		important, having a strong sense of spiritual or emotional support can help people face difficult situations with greater courage and resilience.
b. When they observe that *sallapingaw*, a kind o bird, are flying low above the ground, a bad weather is expected to come.	The behavior of animals can teach us to tune in to subtle shifts around us. Listening to these "signals" helps us avoid larger problems down the road.	b. During typhoons, Ilokanos sprinkle vinegar or holy water inside their house to prevent being hit by lightning	This practice reflects the importance of using rituals or symbolic actions to instill a sense of control and safety during unpredictable events.
c. When dragonflies are flying low, rain is expected to come.	Dragonflies flying low are often a sign of high humidity levels and air pressure changes, which typically precede rainfall. This belief emphasizes the accuracy of local ecological knowledge regarding weather patterns.	c. If they heard or knew that a typhoon will come, they will instantly store their food. Foods that can easily cook are being prepared by the families of the community such as banana, sweet potato cassava, and other root crops.	Preparation is key to handling uncertainty. Whether it's for a natural disaster or a personal challenge, planning ahead and ensuring that we are ready for the unexpected can reduce stress and provide us with a sense of security.
d. When they observe that small ants go to higher ground carrying their food, they believe that heavy rain will come and can cause flood.	Ants demonstrate the value of preparation and adaptability. They instinctively know when to move and adapt to circumstances. In life, this is a	d. During Typhoons, Ilokanos burn used clothes to stop thunder and lightning	It’s a reminder that sometimes, we may need to take steps—whether logical or symbolic—that help us feel empowered in the face of

	reminder to be proactive—whether that means saving for a rainy day, moving away from harmful situations, or making early adjustments to avoid potential setbacks.		uncertainty. Even when things seem out of control, having a ritual or action to turn to can help calm our fears and provide reassurance during difficult moments.
e. Disaster may come if crickets that usually live in the trees produce weird sounds.	Sometimes, when things feel off or uncomfortable, it's not a cause for panic but a signal to pay attention. Just as crickets' unusual sounds warn of changing weather, in life, when something feels out of place or when you encounter unusual behavior in a person or situation, it's often a prompt to reassess, adjust your approach, or prepare for changes ahead.	e. They don't wear red clothes when it is raining because they might get stike by lightning	In life, it's often helpful to follow cultural or personal practices that provide comfort and safety, even if they seem unusual, as they can offer psychological relief and build collective trust during times of uncertainty.
f. Cats are ordinarily seen in the community. When cats got wet, they are expecting a flood and when they drink water several times, they expect a drought to happen.	The behavior of animals in response to environmental changes teaches us to observe and adapt to shifts in our own lives. If we notice certain "signals" in our relationships, health, or work (like a recurring problem or a sudden increase in stress), it's a	f. When they expect a calamity to come, they help each other in storing water to be used in cooking and cleaning themselves	This reminds us that collaboration and helping one another can make a challenging situation more manageable. Whether it's pooling resources or sharing knowledge, working together strengthens resilience.

	reminder to take action.		
g. If the bamboo grass bear flowers, drought is expected to come.	Be cautious of all warning signs	g. The ilokanos pick or uproot a *talahib* or wild sugarcane leaf and tie around their head to protect them from being harmed by lightning.	It's a reminder that we can find strength in rituals, objects, or practices that offer us comfort, helping us to feel more prepared and less vulnerable.
h. If earthquake happens in the early morning, it will rain but if this happens at dusk, drought is expected to happen.	The timing of events can hold deeper meaning. Being aware of the right time to act or rest is crucial in making the most of opportunities or avoiding unnecessary stress.	h. They bath their cats so that it will rain	It teaches us the importance of taking action, even in small ways, to influence the outcomes we desire. In life, taking proactive steps—no matter how small—can lead to a greater sense of control and influence over our circumstances.
i. If houseflies suck during daytime, a bad weather is expected to come.	The smallest details can often reflect larger shifts happening around us. Just like observing a fly's behavior can alert us to upcoming changes, paying attention to minor issues in life—whether it's a slight decline in motivation, minor health complaints, or a change in someone's attitude—can signal that bigger changes might be on the way.	i. Hanging the cloth of a recently deceased person on a pole outside the house is believed to stop the rain.	The lesson here is about honoring traditions and the power of symbolic gestures, whether it's for protection or seeking guidance. It teaches us that rituals or symbolic actions—especially those tied to memory or heritage—can offer us comfort and a sense of agency in the face of natural forces.

j. If earthworms come out from the soil, expect a bad weather.	This reminds us to pay attention to the early signs—whether it's in a project, relationship, or personal well-being—so that we can respond before problems grow larger. Being in tune with the "small things" can be the key to long-term success and preparedness.		

Information Education and Campaign Material of the Beliefs on Natural Disaster and Mitigation Practices of Ilokanos in Santa Marcela, Apayao

An educational video was conceptualized based on this study that can serve as Information Education and Campaign Material on the Beliefs on Natural Disasters and Mitigation Practices of Ilokanos.

The video presents the different beliefs and mitigation practices of Ilokanos on the occurrence of natural disasters to reduce its impact. It was taken in Santa Marcela, Apayao. Four elders participated in the video as representatives of the group of Ilokanos and they shared their general beliefs and practices as their guide whenever there are disasters.

The educational video can be accessed through the link below:

https://drive.google.com/drive/folders/1pBYGGLCSkBgyd1c4Rcl2pgCO2b4VrXvf?usp=sharing

Summary of Findings

The researcher aimed to find out the various beliefs and practices of the Ilokanos in Santa Marcela, Apayao on natural disasters. In-depth interviews and group discussions with the elders

of Ilokanos were the instruments used by the researcher. It was revealed that Ilokanos have numerous disaster-related beliefs based on their observation of the changes in nature and behavior of animals. Moreover, they also have mitigating practices for survival that were not scientifically proven yet including burning fern plants and using coarse plants or sugarcane as protection from lightning but they still practice these in the present since they survived various disasters in the past by doing these.

Conclusions

This study documented the beliefs on natural disasters and mitigation practices and beliefs of Ilokanos in Santa Marcela, Apayao. From the findings of the study, the following conclusions were drawn:

1. Ilokanos are well-heeled in terms of the uniqueness of their beliefs. They have their ways of predicting disasters by observing changes in their environment and the behavior of animals;
2. Ilokanos have various mitigation practices. They make adjustments to ensure their survival. Some of their practices are not scientifically proven as effective but Ilokanos trust their elders as their source of these practices; and
3. there are many life lessons from the beliefs and practices of Ilokanos in facing disasters.

Recommendations

Based on the findings and conclusions, the researcher recommends the following:

1. All members of the community should become aware of their elders' beliefs on natural disasters and mitigation practices
2. School administrators should consider the mitigation practices of Ilokanos in planning a program that prepares both teachers and students for potential disasters.
3. Barangay officials in the community should plan mitigation practices for better management to reduce the risk and impact of disasters.
4. Disaster Risk Reduction Practitioners should consider integrating their knowledge with the knowledge of local communities when dealing with hazards and disasters including early warnings so that the two types of knowledge can complement each other
5. Curriculum Planners should integrate DRR Education, particularly on hazards, hazard maps, and disaster mitigation practices in the curriculum for basic education for both basic and tertiary levels, especially in Science and Araling Panlipunan learning areas.
6. More studies about disaster risk reduction and mitigation should be conducted to highlight its potential which can be transferred and adopted by the communities with a similar situation.

7. Future researchers should conduct disaster-related research with more informants to have more sufficient findings. The beliefs and practices on disasters that have a scientific basis should be identified so that they can be employed in disaster risk reduction.

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