


Disaster Preparedness and Climate Change



The Indigenous Knowledge of
Selected IP Groups in Davao Region



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Foreword



SENADO NG PILIPINAS

Hon. Loren Legarda
SENADOR

FOREWORD

Climate change is now in our midst and has borne countless tragedies and losses all over the country from recurring impacts of extreme weather events. The Philippines is among the most vulnerable to climate change and disaster risks, thus, the need to strengthen resilience efforts.

Indigenous peoples (IPs) are not immune to the impacts of climate change. In fact, they are among the most vulnerable as most of them live in fragile ecosystems. As a result, they look at adaptive strategies to increase resiliency in the face of catastrophes.

The country's disaster risk reduction (DRR) programs have largely employed knowledge from science but have failed to fully utilize indigenous and local knowledge in building resilience of communities.

This publication on Indigenous Knowledge Systems and Practices on Climate Change and Disaster Risk Reduction of Selected IP Groups in Davao Region aims to bring to the attention of various concerned agencies and stakeholders the value of incorporating local knowledge into disaster management planning and climate change adaptation.

Moreover, it takes a deeper look into the capacity of the people from the IP groups – Tagakaulo, Mandaya, Obu Manuvu, Ata Manobo, Blaan, Dibabawon and Manguangan – to respond to climate risks and develop adaptation measures, as well as their understanding and perceptions of climate change and disasters.

I thank the team from the University of Southeastern Philippines and the Davao Oriental State College of Science and Technology for undertaking this project, which will be a valuable contribution to our efforts in building disaster and climate resilience.

Looking back at the traditions of our ancestors, we realize how much they valued nature and culture – to be one with the community and one with the Earth. Fast forward to the modern present, we find that the old ways are the very foundation that will guide us through our way to progress. The knowledge systems and practices of indigenous peoples are the same solutions that will help us address the challenges of modern times, including natural hazards exacerbated by climate change.

SEN. LOREN LEGARDA
Chairperson, Senate Committee on Climate Change
UNISDR Global Champion for Resilience



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The men and women of the Ata-Manuvo, Blaan, Dibabawon and Mangguangan, Mandaya,

Obu-Manobo and Tagakaulo, who shared their time and knowledge for the accomplishment of this book; and

Our family and loved ones for their unending love and support.

To God be the Glory!

Message from the President

I consider it a great honor on the part of the University of Southeastern Philippines to have played a significant role in the promotion and preservation of the indigenous knowledge system and practices on climate change and disaster risk reduction through this publication.



This engagement of the University is a proof of the academic institution's commitment to empower our IP brethren by way of acknowledging their contribution to the society in addressing threats caused by the changing environment; and by way of bringing to the fore their concerns and issues on disaster preparedness.

I believe that this book will serve as a significant reference material for individuals and organizations that need valuable information on indigenous and local knowledge and practices on disaster preparedness.

My commendation to all the men and women who caused the realization of this intellectual resource.

LOURDES C. GENERALAO

President

University of Southeastern Philippines

Message from the Vice President for Research, Development and Extension

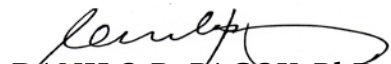
This Publication on the Indigenous Knowledge System & Practices on Climate Change and Disaster Risk Reduction of Selected IP is a strong expression of the University of Southeastern Philippines' continuing commitment to advance the frontiers of knowledge on indigenous and local knowledge and practices in climate change resiliency.



It is with great honor that this University, by means of this publication, has taken a step towards recognition of the contributions of indigenous and local knowledge systems towards a better understanding of Climate Change and Disaster Risk Reduction.

We expect that this book will inspire future researchers, students and, subsequently, policy-makers, to help advance knowledge and develop policies that would accommodate indigenous knowledge and practices in the course of building foundation for understanding local-level climate change adaptation and disaster risk reduction management.

Our sincere gratitude and appreciation to all those who made this publication a success.


DANILO B. PACOY, PhD.

**Vice President for Research, Development and Extension
University of Southeastern Philippines**

Message from the President

MESSAGE



Davao Region is truly a domicile of diverse cultures, traditions, and idiosyncrasies. It houses a rich variety of picturesque sceneries that entices a number of tourists from the different parts of the world.

Nowadays, people around the universe have been bombarded with the different news brought by inevitable circumstances and natural calamities which result to the eventual obliteration to some of the wondrous places. These adversities are undeniably being aggravated by the transgressions of the inhabitants, most especially, the community – without minding the aftermaths of the things that we are doing.


Climate change has long been experienced across the globe. As caused by the human activities which are changing the natural greenhouse, we are witnessing its manifold impacts that could absolutely undermine sustainable development. Hence, it can never be repudiated that this affects everyone. Nevertheless, working hand-in-hand might alleviate, if not thwart its catastrophic effects.

Issues on disasters and climate change are attracting the attention of the academics, politics, businesses and even the media. But its impact on minorities and tribal groups rarely gets a mention, even though these groups are among those who are worst affected.

More recurrent typhoons and droughts, sweltering temperatures, new plagues and diseases, worse floods and devastating earthquakes are among those characterized effects of changing climate. But the failure to respond and to recognize the impacts of climate change in the tribal groups greatly exacerbates their suffering.

Furthermore, being a melting pot of sundry cultural groups is closely related to its being a predominantly agri-based economy. The region is now developing into a center for agro-industrial business, trade and tourism which is directly affected by the disasters and calamities.

In some cases, their ways of life and their existence are threatened by climate change. Thus, this publication on risk disaster and climate change of tribal groups in Davao Region is a comprehensive exposition that heightens attention to the close relationship of the tribal groups with their natural environments which makes them very sensitive to the effects of global warming.


EDITO B. SUMILE, PH.D.
SUC President III

Message from the Regional Director



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MESSAGE



Mal'leng Od'dow!

In behalf of NCIP Region XI, I would like to convey my congratulations to the Indigenous Cultural Communities / Indigenous Peoples (ICCs/IPs) belonging to the Mandaya of Cateel, Davao Oriental; Obu-Manuvu of Baguio District, Davao City; Ata of Sto. Tomas, Davao del Norte; Tagakaulo and Blaán of Malita, Davao Occidental and Dibabawon and Mangguangan of Compostela Valley for the vigorous effort in completion of the study on Indigenous Knowledge Systems and Practices on Climate Change and Disaster Preparedness conducted by the University of Southeastern Philippines (USEP).

The study shows the genuine desire of the ICCs/IPs in attaining your aspirations in life to protect and preserve the environment as one of the IPs' responsibilities as stipulated in Section 9 of the Republic Act 8371 or IPRA of 1997. This will serve as a guiding force to prepare for calamities and adopt climate change using your indigenous knowledge, systems and practices that are tested through time. Taking cognizance of your inter-generational responsibility, this will further help you to properly implement, develop and protect your ancestral domains' natural and mineral resources without neglecting your customs and traditions.

I am also grateful for the financial support and partnership of the University of Southeastern Philippines which played a vital role in the formulation process. The persistence is recognized of our NCIP-Provincial Office personnel for their competence in assisting the tribe in all endeavours and activities leading to the completion of the study.

Polivud to riyot Monama kos langun nò kod dayan. Dak'kon Solamat.

ATTY. GERONCIO R. AGUIÓ, CESO III
Regional Director

"Forging partnership for rights-based development of the Indigenous Peoples"



Table of Contents

Foreword	1
Acknowledgement.....	3
Messages.....	5
About the Book.....	10
Definition of Terms.....	11
Chapter 1 – Introduction.....	13
Chapter 2 – Ata Manobo.....	19
<i>Joy R. Risonar</i>	
Chapter 3 – Blaan.....	33
<i>Lilibeth A. Cenojas</i>	
Chapter 4 – Dibabawon and Mangguangan.....	45
<i>Gladys Florangel I. Ortiz</i>	
Chapter 5 – Mandaya.....	61
<i>Lilibeth S. Galvez</i>	
Chapter 6 – Obu Manuvo.....	79
<i>Sajed S. Ingilan</i>	
Chapter 7 – Tagakaulo.....	97
<i>Mary Grace Z. Agbas</i>	
Chapter 8 – Conclusions and Recommendations.....	111
References.....	115
Appendices.....	121

About the Book

We can see foreign social scientists crisscrossing our archipelago doing research on the Philippines. It has been like this since the arrival of the western powers and up to this day wherein we leave the burden of the search for indigenous knowledge and wisdom to the foreign scholars. Setting the foreign researchers' feat aside, doing social science research with this type of result in view is an insurmountable task that has been adequately accomplished by the team of faculty members from the University of Southeastern Philippines and Davao Oriental State College of Science and Technology with the generous support of Senator Loren Legarda. From the first four pages bearing the introduction, it can be deduced right away that this manuscript is a product of an exciting fieldwork and rigorous ethnography –a commendable endeavor indeed. Reassuringly, I am making it clear that this breakthrough research should be continued for it is time that the local academia must take into its hands the thrust of documenting and preserving indigenous knowledge systems within its geographical vicinity. The familiarity and the proximity of the academic communities with the indigenous communities do not only project the idea of awareness, but also the degree of interest and intellectual curiosity that will facilitate in the tapping of the indispensable communities for the enhancement of the existing education policies, research agenda, and pedagogical endeavors among others. With the great merits this book has and the use of English language in its text, I am sure that this book will not be only used in the local academic communities, but it will find its way into the many libraries and university holdings in the country and abroad.

Associate Professor Rodney C. Jubilado, Ph.D.

Head, Filipino Studies Program

University of Hawaii at Hilo



Definition of Terms

<i>abyan</i>	guardian spirit
<i>agipo</i>	ember
<i>Al'lang</i>	captives of war from other tribe
<i>anitoan</i>	a person who possesses the spirit to warn people of a disaster
<i>bai</i>	an honorable woman
<i>bagani</i>	warrior
<i>bukawi</i>	or <i>Dinochloa scandens</i> , a type of tree with vine-like characteristics. It belongs to the bamboo species
<i>burakan</i>	an indigenous variety of wild creeping vine with plate-size leaves resembling a camote
<i>datu</i>	a chieftain
<i>dulun</i>	a locust
<i>fulong</i>	Blaan Tribal Leader
<i>iliyan</i>	a cave that serves as the evacuation center when disaster strikes
<i>kaingin</i>	slash and burn farming
<i>kal'lep</i>	traditional law of the Tagakaulo people
<i>karumaan</i>	set of followers of Dibabawon and Mangguangan bagani
<i>kasili</i>	a type of eel found in fresh water
<i>landang</i>	or true sago palm, a species in the palm family native to Southeast Asia
<i>limukon/alimukon</i>	a white-eared brown fruit dove
<i>Magbabaya</i>	the Supreme Being worshipped by the Obu-Manuvus

<i>matikadong</i>	an elder person
<i>pama</i>	a ritual done by an old folk to predict the coming of a disaster
<i>panuvad-tuvad</i>	a kind of ritual done by the Obu-Manuvus
<i>tuburan</i>	a source of water
<i>tuog</i>	or bishopwood
<i>Tyumanem</i>	the God “the Provider” of the Tagakaulo
<i>uyon</i>	a kind of disease that struck the Obu-Manuvu tribe

Chapter 1

Introduction

Long before the various scientific and technological advancements came into picture, (there was the indigenous knowledge that) humanity all over the world depended on indigenous knowledge for all things: understanding of and survival in this world (Steiner, 2008). Indigenous knowledge was what communities in the past had that enabled them to achieve stable livelihood and harmonious living with the environment. Accumulated over generations of living in a specific environment, indigenous knowledge shaped skills, practices, and beliefs of human beings with and towards the environment and natural resources. Apart from agriculture, fishery, medicine, and spirituality, this knowledge also includes disaster management: preparation, response, and recovery. For the past millennium, indigenous peoples all over the world have relied heavily on indigenous knowledge to prepare, cope with, and survive disasters (Scott, et.al, 2013).

However, the use of indigenous knowledge on disaster management has declined due to institutional mainstreaming of disaster management, external influence and short-term humanitarian aids, and disregarding elders of indigenous communities who die without passing on their knowledge to the next generation (Scott, Llamas, & Brittner, 2013).

While it is well understood that scientific and technological advancements are useful, the survival of indigenous communities from various disasters in the past millennia implies the potential of indigenous knowledge in complementing institutional efforts in disaster reduction (Shaw, Takeuchi, Uy, & Sharma, 2009). In fact, in 2007, the United Nations International Strategy for Disaster Reduction, together with Kyoto University, European Commission, Disaster Reduction Hyperbase Asia, Sustainable Environment and Ecological Development Society (SEEDS), and other Asian role players conducted a series of events and published about indigenous knowledge as well in order to better understand them. Some of the main events in this regard are: Transferrable Indigenous Knowledge Meetings in Delhi in February 2007 and February 2008, Indigenous Knowledge Good Practices Document from November 2007 to June 2008, Transferrable Indigenous Knowledge for Disaster Reduction Hyperbase and Beijing Workshop in February 2008, Indigenous Knowledge Workshop in July 2008 in Kyoto University, SAARC Disaster Management Center Study on Indigenous Knowledge for Disaster Risk Reduction in South Asia, and Third Ministerial Meeting in December 2008 (Shaw, et.al, 2009). Also, “communities in Kenya, South Africa, Swaziland, and Tanzania have evolved indigenous knowledge technologies, beliefs, and experiences that aid them not only in predicting disasters but also in devising techniques and coping mechanisms to deal with disasters.

All these measures enabled the communities to live with” the climate change hazards (Mwaura, 2008).

Given the capacity of indigenous knowledge as a readily and locally available resource for the reduction of communities’ risks and vulnerabilities to disasters, indigenous knowledge, therefore, must be integrated with scientific knowledge (Mercer, Kelman, Taranis, & Suchet-Pearson, 2010).

Before it can be integrated, however, this indigenous knowledge must be well-documented before it is eventually lost with the passing away of its custodians—a passing that has long been eroding the knowledge long before it is even noticed.

This publication is an attempt to contribute to this much needed documentation. This is a result of the combined efforts of the Philippine government through the initiative of Senator Loren Legarda in partnership with the research team composed of faculty from the University of Southeastern Philippines and Davao Oriental State College of Science and Technology with a specific focus on the select indigenous peoples in Region XI.

Like most of the indigenous peoples in the Philippines, the select tribes of Region XI in this publication—the Ata-Manobo of Davao del Norte, the Blaan of Davao Occidental, the Dibabawon and Mangguangan of Compostela Valley, the Mandaya of Davao Oriental, the Obu-Manuvu of Davao City,

and the Tagakaulo of Davao Occidental—all “play a major role in the protection and preservation of the country’s rich and vast biodiverse areas since they live in or near these areas” (Environment and Natural Resource Management, 2001).

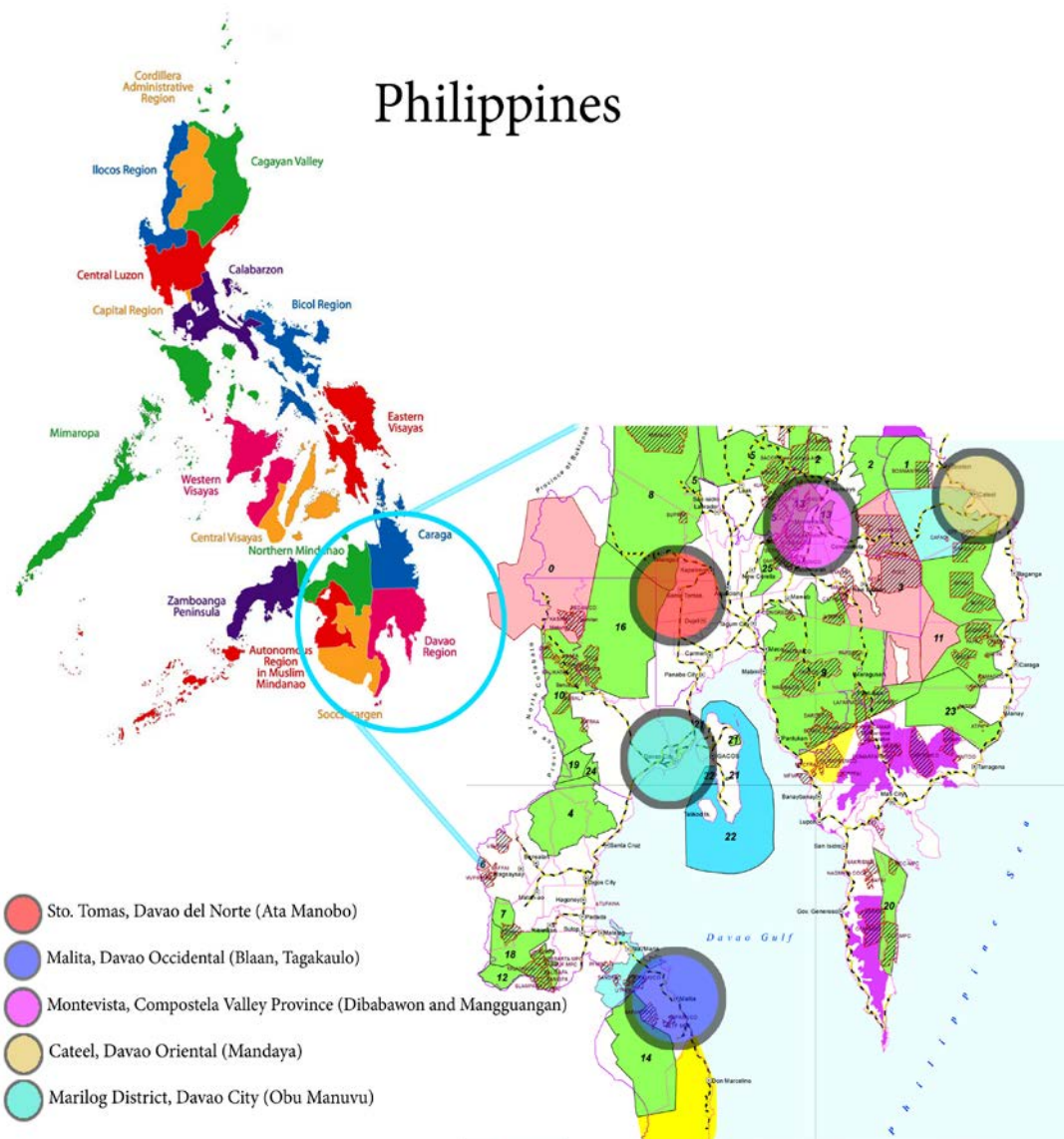
Unfortunately, these indigenous peoples as well as the poor and marginalized, are ones most vulnerable to natural hazards and climate change related disasters. This is due to the fact that the country is located in the Pacific Ring of Fire, making it prone to many types of disasters. Also, as an archipelagic country, most of its economic activities, like farming and fishing, are heavily dependent on natural resources making them all the more susceptible to the harsh impacts of climate change.

“Although there have been equitable and inclusive mechanisms that have been designed to protect people from the harmful effects of disasters and to build their resilience and capacities to confront daunting challenges brought about by natural hazards, the inevitable disasters still are a major restraining factor in the development process of the country and are capable of eradicating years of local development years. In order to devise mechanisms that foster social protection to groups that are vulnerable to the devastating effects of disasters, the Philippine government approved the Philippine Disaster Risk Reduction Act of 2010 which gives protection to vulnerable and marginalized groups particularly women, children, differently-abled persons and ethnic minorities” (Espesor, 2014).

The ethnic minorities or the indigenous peoples in the Philippines have a wealth of indigenous knowledge for providing solutions to global problems of increasing disasters and climate change impacts (Shaw et al., 2008). For instance, the Subanens of Zamboanga del Sur have shown how their indigenous knowledge and practices have helped them cope with previous natural disasters in their community (Mabini et al. 2014).

Not much is known about the indigenous knowledge and practices in response to natural disasters among the indigenous groups in the Philippines despite it being frequented by typhoons. This is especially true in the Davao Region which fell victim to the wrath of Typhoon Bopha (local name Pablo) in 2012. Hence, this documentation of the knowledge systems and practices of IP groups in Davao Region namely, the Ata-Manobo of Davao del Norte, the Blaan of Davao Occidental, the Dibabawon and Mangguangan of Compostela Valley, the Mandaya of Davao Oriental, the Obu-Manuvu of Davao City, and the Tagakaulo of Davao Occidental, was initiated. This study includes brief historical information of the respective tribes, their specific knowledge on disaster preparedness, the disasters they experience and their preparedness for these disasters, the effects of these disasters on their livelihood and their social networks on disaster preparedness. To achieve these, methods used in the study were key informant's interview (KII) and focus group discussion (FGD).

The study also made use of literatures as secondary source of data. In the course of the investigation, the procedures stipulated in Administrative Order No.1 Series of 2012 of the National Commission on Indigenous Peoples were followed. Furthermore, data gathered were validated by the respondents.



Philippine map from <http://thephilippinearchipelago.com/wp-content/uploads/2015/09/Philippine-map.jpg>

Chapter 2

Ata Manobo

of Sto. Tomas, Davao del Norte

Joy R. Risonar

History and Background

The “Ata” name for a group of people first appeared in an account of a missionary in Mindanao in 1881 (Gloria and Mapayo in Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) of Ata ICCs/IPs). Then it appeared again in a 1940 anthropological study where the name is used to refer to those who dwell in the uplands (Cole in ADSDPP of Ata ICCs/IPs). Some Atas were also found to dwell near rivers (NCIP-PAMANA Funded Survery in 2014). The Ata people refer to mountains as “manobo;” to rivers, “matigsalog.” Therefore, the Atas who dwell in the mountains are called Ata-Manobo and those who dwell near rivers are called Ata-Matigsalog. The Atas in the Davao Region do not seem to form a single tribe although some various elders claim that their original settlement was along the river Mapula and that their members moved to nearby places when their population grew big. These nearby places include the whole stretch of Paquibato District and a certain portion of Santo Tomas, Davao del Norte.

Based on the NCIP-Panama Funded Survey in 2014, the available data on Atas cover 18 barangays of Davao City and 4 barangays of Santo Tomas, Davao del Norte. The latest survey indicates that there are more than 3,000 Ata households and more than 14,000 Atas in the region; 116 of these households or 681 Atas are in Santo Tomas specifically in the following barangays: New Visayas, Bubongon, Tulalian, and Balagunan (ADSDPP of Ata ICCs/IPs).

These Atas in Santo Tomas, Davao del Norte call themselves Ata-Manobo even though they do not necessarily live near rivers anymore given several circumstances that forced them to transfer locations. Like most tribes, they also have a tribal council or a council of elders whose head is referred to as the Baylan. The Baylan is believed to have been chosen by their god (Personal Interview, July 2016). “*Gigasa sa atoang Ginoo sa ako unya murag gitaha sa ko* (This is a blessing from God and it seems like I was assigned [to do this]),” said Datu Doming.

A review of related literature indicates that the Baylan is the doctor of the community but a personal interview with the members of the tribal council of the Ata-Manobo tribe in Santo Tomas reveals that their Baylan is their leader, someone who personally receives various messages such as warnings, rules or decisions to make from their Magbabaya, an omnipotent being who has, under his authority, other deities. Datu Doming explains further,

“Kining Baylan man gud, mao nay konsultahon sa unang panahon pananglit kung nay katingalahan. Ang Baylan pud, siya ra po’y makabalo kung unsa ang moabot, pareha anang kagubot o kung unsa pa mang katalagman ang moabot, ang Baylan gyuy unang makabalo. Unya itapok dayon niya iyahang mga tao para maproteksyonan, pareha aning ritwal, para masumpa [ang katalagman].

(This Baylan is the one being consulted first for something mysterious. The Baylan also is the only one who knows about things that will happen, like troubles or whatever disaster is going to come. The Baylan is the first to know of things to come. So, he will gather his people in order to protect them through a ritual that will stop the disaster from happening.)

One deity who is of specific importance to the Ata-Manobos in Santo Tomas is Kagokgok who commands the winds and the storm that can destroy their livestock, farms, houses, and lives (Personal Interview, July 2016). The current generation of the Ata-Manobo Tribe in Santo Tomas, Davao del Norte including the oldest living member, their Baylan Datu Doming, claims to have no other knowledge on how their tribe arrived in Santo Tomas except that all of them have been born and have spent their lives there. In Datu Doming’s words, “*Diri naman jud ko natawo sa Sto. Tomas* (I was born here in Sto. Tomas).” The elders have also witnessed how their population grew bigger through intra- and inter-marriages. The elders have also witnessed the geographical spreading

of their members usually to the lowlands because of various reasons such as employment, education, and marriages (Personal Interview, July 2016).

The primary source of living of the Ata-Manobos in Santo Tomas is farming. Their secondary source is domesticating pigs and chickens. They plant paddy, sweet potato, and other vegetables. Their reliance on farming makes them vulnerable to climate changes but takes their fate in farming as the Magbabaya's mercy.

The primary source of data for the writing of this book is the purposively chosen group of elders of the Ata-Manobo Tribe in Santo Tomas, Davao del Norte. The researcher-writers of this book secured permission from the Region XI National Commission on Indigenous Peoples for the conduct of this study. Under the supervision of Emmanuel Cacal, Provincial Officer; Rhodora Braganza, Free and Prior Informed Consent (FPIC) Focal Person; Danilo Amban, FPIC Team Member; and, Atty. Ariel Montaña, FPIC Team Member, the researcher-writers secured a Free and Prior Informed Consent or FPIC from the informants. The tribal council decided to have four elders to participate as informants for this endeavor. The identified elders are Datu Dominador "Doming" Tumaytay, Bae Merna "Merna" Ompocanon, Datu Lito "Lito" S. Aquino, Sr., and Datu Fernando Dumait.

The first informant is Datu Doming, the tribe's Baylan. He is 75 years old and his primary source of living is farming. He says that has never been to school. The second informant is Datu Dumait, aged 55. Like Datu Doming, he is also a farmer, but was able to study and graduate from elementary school. The third informant is Datu Lito who is 53 years old. He is also a farmer and has also finished elementary education. The fourth informant is the only woman chosen by the tribal council to join the interview: Bae Merna Ompocanon. She is not sure about her age but she approximates herself to be 70 years old. Her major source of living is farming and she says that she has never been to school. She is the younger sister of Datu Doming who is the leader of the tribal council of the Ata-Manobo tribe in Santo Tomas, Davao del Norte.

After securing the FPIC, the researcher-writers proceeded with the semi-structured interview to determine the tribe's knowledge on disasters and their practices to prevent and/or prepare for these disasters. The interview was transcribed and thematically analyzed in order to determine the indigenous knowledge of the tribes on disasters, the disasters they experienced and preparedness for the same, and the effects of these disasters. After the data was analyzed, these were presented to the tribe under the supervision of NCIP representatives for the purposes of validation. The validated data are the ones appearing in this discussion with supporting literature reviewed for this publication.

Indigenous Knowledge and Practices on Disaster Preparedness and Their Experiences

The knowledge of Ata-Manobo about the cause of the disasters dictates their practices in terms of preparing for them. Their preparation for these disasters also has direct implication on their experiences. Central to their knowledge is their belief in their Magbabaya, their god who they sometimes call “Ambyan.”

The Baylan receives climate warnings from the Magbabaya through the sound and behavior of turtledoves, which the Ata-Manobos call alimukon, and through the appearance of the sun. The warning of the Magbabaya for an incoming typhoon is sent through the Alimukon’s sound that is different from the usual and through flying away together as a flock. Datu Doming explained:

“Kanang alimukon, mao nay mohatag. Ug kanang langgam, mo-signal sila ana labi na kadtong mga nay mga tag-as na langgam. Basta molupad na sila, daghan nay moabot nga katalagman. Pero wala ko kahibalo kung unsa ang katalagman nga moabot. Basta kay ang pahimangno lang sa akoa nga ipatapok ang mga tawo. Ang panubad-tubad ra gyud atong depensa. Moingon sa akoang Ambyan nga ugma, tan-awon nimo ang adlaw. Inig tan-aw nako, murag ang bulan, magtongtong siya sa adlaw. Murag naghilak siya kay wala daw siyag isampit. Human isa ka semana, [nay moabot nga katalagman.

(It is the turtledoves that will give the signal. Those birds that fly high, when they fly together, disasters are expected to come. But I don't know what exact disaster will come. The message that comes to me is just to gather the people. Prayer is our defense. The Ambayan will tell me to look at the sun the next day. When I do look at the sun, there would appear to be an image of the moon on top of the sun. The sun would seem like it's crying because he is not called upon by the people. After a week . . . [a disaster hits]).”

Bae Myrna explained that *Magbabaya* has assigned *kagokgok* to rule over the wind. She said that *kagokgok* only allows his wind to hit lands where people are sinful. “[*Kanang nay sala*], *didto ra paagi-on ang hangin* ([Where sinful people are], that is where the wind passes),” added Bae Myrna.

The *Magbabaya* also makes use of the sun as a sign. If the sun would appear to have less heat than usual, this means that there is an incoming heavy rain. The *Baylan* is chosen and trained by an older *Baylan*. This indigenous knowledge about incoming typhoon is therefore studied and experienced by the *Baylan* of the tribe.

As soon as the *Baylan* receives these signs, he summons all the members of his tribe for a prayer ritual they call *panubadtubad* together with other offerings such as drinks, *mama* (betel chew), and chicken. The prayer ritual can also be a means to curse the impending disaster.

They refer to the curse as *sugkang* that aims to stop an incoming disaster.

The Ata-Manobos think of disasters as part of nature and a punishment from their *Magbabaya* as well. It is a punishment if tribal members commit sins such as stealing or mockery of nature such as animals, logging, and failure to pray. During the research's validation period, the Ata-Manobos even added that the September 23, 2016 heavy rains that resulted in a landslide in their place, as well as the September 24, 2016 earthquake that followed, was caused by a member of their tribe who played with a janitor fish a day before the disaster. The act was a misbehavior that must have angered the *Magbabaya*, therefore, to punish them, he sent rains and earthquakes. Although there was no damage to lives, the landslide partially blocked a main road they usually take when they go to the lowlands. This was immediately cleared through the combined efforts of the male members of the tribe who helped clear the road under the supervision of Datu Doming, their *Baylan* and leader.

The current oldest living Ata-Manobos in Santo Tomas claim that because of their prayer ritual called *panubadtubad*, the *Magbabaya* spares them from extreme calamities thereby remembering only a few of these such as droughts and typhoons. They believe that with disobeying *Magbabaya* and forgetting to pray, they are bound to be punished through the calamities that will come to their land (Personal Interview, July 2016).

Datu Doming enumerates, “*Gi-bawal sa atong Ginoo ang kaning pagpangawat, ang pagpanapaw, tamay-tamayon ang kauban ug ang paghukom sa kauban.* (It is prohibited by God to steal, step on others, disrespect others, and judging others.)”



Datu Dominador “Doming” Tumaytay conducts a Panubad-tubad, ritual of prayer, before the conduct of the interview.

Effects of Disasters Experienced

Santo Tomas was typhoon-free until 2012 when Typhoon Pablo hit the municipality resulting in damages to houses, livestock, farms, and lives. The Ata-Manobo informants recalled that they suffered from this typhoon during this year but thanks the Magbabaya for not killing any one of them. They believe that the main reason the land is hit is the sin of the people.

“Ayaw mo’g samok-samok. Ayaw mo’g mangawat kay mao ray kaluwasan ninyo, ingon ang Ambyan (Don’t wreak havoc. Don’t steal because that is what will save you),” enumerated Biyo Myrna. Datu Doming further added, *“Gibawal sa atong ginoo kaning pagpangawat, ang pagpanapaw, ug tamay-tamayon nimo ang isip kauban nimo. Kanang maghukom sa isip kauban nimo nga patyon nimo siya (The Lord prohibits stealing, disrespecting others, abusing others, judging others and wanting to kill them).”*

Datu Dumait further added:

“Ang hinungdan, ang tawo kung masobrahan sa pagyagayaga, kataw-an ang mananap, makilatan siya. Kanang pareha anang kabukiran karon nga wala nay kakahoyan: usa na siya [hinungdan] sa kalamidad. Kanang baha, kining landslide ug kining huwaw, pag wala nay kahoy, wala nay mosuporta sa ulan so mao na nahitabo.

(The reason, they believe that when a person makes fun of animals or laughs at animals, a thunder will hit him or her. For instance, the mountains that do not have trees anymore: that is one cause of disasters like floods, landslides, and drought. If there are no trees, there will be nothing to support the rain and that is what happens.)”

They also claim to have suffered from drought that damaged their palay and other crops. “*Pero kadtong babae, mao to ang pinakagrabe (That girl-typhoon, that was the most damaging)*,” recalled Datu Doming who referred to Typhoon Yolanda, a name he did not remember exactly except that it is a name of a girl. Typhoon Yolanda hit Tacloban hardest in 2013. Nearby places also suffered from heavy rains brought by the typhoon (<http://www.gov.ph/laginghanda/updates-typhoon-yolanda/>). “*Yolanda, mao jud ng naka-apekto sa among kabukiran. Kanang Yolanda, kanang gilimpyo jud niya ang [kabukiran]* (Yolanda, that [typhoon] really affected our forest. That typhoon cleaned up our forest),” added Datu Doming.

“*Mogamay gyud ang among ani sa uma* (Our harvest was severely reduced),” said Datu Lito.

The damages range from reduced amount of harvest to no harvest at all. Because their houses are made of light materials, the damage to this property includes destruction of their roofs and/or destruction of the entire house.

The chickens and pigs that they usually domesticate either disappear or are killed. “*Pwerting hilak sa tag-iya kay dili na mabuhi ilang alaga* (The owners of the livestock just resorted to crying over the death of their animals),” added Datu Doming.

Records show that this municipality has also suffered from various disasters such as earthquakes in 2015, which recorded a magnitude of 4.6, landslides due to heavy rains in 2013, floods due to continuous rains in 2012, and drought in 2010 that made them be placed under a state of calamity. This long dry spell condition affected agricultural productions such as rice, corn, fruits, flowers, and livestock. There was also a tornado that hit the land in 2007 (Earthquake Information Number 4, 2015; Serrano, B., 2007; NDRRMC Update, 2013; Davao del Norte, 2013).

Social Networks

In terms of social networks, the Ata-Manobo tribe in Sto. Tomas is closely working with the National Commission for Indigenous Peoples through the active participation of their Indigenous Peoples Mandatory Representative (IPMR) (<http://ncipr1.com/wp-content/uploads/2014/11/IPMR-ncip-adm-ord-no-001.pdf>). Based on Republic Act 8371 or the Indigenous Peoples Rights Act of 1997, their IPMR shall participate fully in all matters concerning the IP's rights, lives, and destinies.

When asked about their view regarding the government's ways in preparing for disasters, their idea was into the new technology that will be shared to them. *“Kung ang bag-ong teknolohiya makahatag ug kaayuhan, wala’y katarungan nga dili nato [dawaton]. Ang among tradisyon, ang among kultura, makit-an jud nato nga maayo kung maayo sab ang among makita sa bag-ong teknolohiya, ato na siyang tumanon* (If the new technology can provide betterment, there is no reason not to accept it. Our tradition and our culture are good for us. If we see that from the new technology, we will accept [that new technology]);” Datu Lito expressed.



The Ata-Manobo informants with the researcher-writer during the interview (from left to right : Datu Fernando Dumarit, Datu Lito Aquino, Sr. , Bae Myrna Ompocanon, and Datu Dominador Tumaytay. The interviewer: Joy R. Risonar)

Chapter 3

Blaan

in Brgy. Little Baguio, Malita, Davao Occidental

Lilibeth A. Cenojas

History and Background

The word “Blaan,” which means “exchange,” was said to have originated from their ancestors’ first means of livelihood which was bartering. Their ancestors bartered their jewelry, abaca, coffee, and root crops in exchange for livestock or other farm products (Peralta, 2000). The Tribal Chieftain of Barangay Little Baguio in Malita, Davao Occidental, recounted, “*Kanang sa una, hilig kay among mga ninuno anang mga barter-barter kanang kumbaga pa sa tribung Blaan kanang makabatong ba. Kabatong is kanang mga elders, mga royal blood mag-istoryahay tas magbaligya-ay* (Long ago, our ancestors were into bartering. In the Blaan tribe, elders from royal lineage engaged in barter and trade with other people of royal lineage.”)

Most of the ancestors of Blaans engaged in bartering before they ventured into *kaingin* (clearing), a system of cutting down trees for cultivation purposes. Blaans are said to be nomads, thus, *kaingin* is said to be the result of the Blaans’ nomadic lifestyle of moving to places they perceive will not require them to put up permanent farm lots.

However, nowadays Blaans take good care of their own farm lots. One of the key informants said, “*Ang panginabuhi-an karun kasagaran kay farming na. Hinay-hinay na sila og tuon sa bag-ong teknolohiya sa pag-farm. Naa na sila sa modernized na panginabuhi* (Most Blaans nowadays are into farming. They have also slowly adopted the modern way of farming through the use of technology.”)

The Blaan tribe is classified into three major groups based on location: the Davao Blaan, which was the focus of this study; the Koronadal Blaan; and, the Sarangani Blaan. Blaans use modern technology in farming which was introduced to them by the Philippine government. Farming is their primary source of livelihood, mainly because of their geographical location, which is on the hills or mountains.

Blaan communities are ruled by a datu or village chief known as *fulong* which means “wise.” Usually a *fulong* is the oldest and the wisest man in the village with a substantial amount of wealth in the form of gold and other cultural materials. It has been long established that a Blaan *fulong* does not require his people to pay tribute to him. However, by virtue of love and respect, the people give him gifts or offerings. Moreover, a wealthy *fulong* could have as many wives as he could support. The *fulong* is looked upon as the leader, protector, mediator, and solution giver (Avancena-Arcenas, 1993).

One of the *bais* (women) who served as informant for this study had narrated that her father who had been a *fulong* had to settle disputes between or among Blaans in their barangay. She recalled:

“Tung una naay mga away sa lugar, dili sila mag-pasulod, naa silay gusto na ilaha gyud na domain nila, na walay makasulod diha kay ilaha gyud na. Pero sa karun wala na kay akong amahan man gud murag sya’y peace negotiator, nag husay sa tanang mga bangi sa yuta, bangi sa pamilya. Mao na murag gibuhath syang fulong.”

(In the past, there were disputes about land ownership. However, these disputes have been settled by my father who helped in solving family feuds on land ownership. He acted as a peace negotiator. Hence, he became a *fulong*.)

Rulership of a *fulong* is not determined by selection of the people in the tribe. In some instances, a person becomes a *fulong* by virtue of physical superiority in being a champion warrior or by being endowed with wisdom that the Blaans deem is a gift from *D’wata* or God. Blaans believe in the existence of a supreme being known as *D’wata* (God). He is the *Mele*, the planter of *Langit* (heaven) and *Tana* (earth) and everything on earth (The Monograph Series: *Blaan Tribe*, 2008).

Indigenous Knowledge on Disaster Preparedness

The Blaan tribe has developed indicators of coming calamities such as heavy rains, drought, or earthquake. One key informant said, “*Daghan kaayu mi mga tinuohan kung katalagman nga muaabot. Mga bagyo, ma-lindol, ma-huwaw naa gyud mi tilumad-on ana* (We have beliefs about the coming disasters. We have indigenous ways of knowing the coming disasters such as heavy rains, earthquakes, or drought.)”

Espesor (2014) claimed that “like many traditional communities in the Asia Pacific Region, the Blaan community has developed, since time immemorial, indigenous knowledge that has been tested by time and proven effective in reducing disasters and managing unavoidable calamities.” Blaans take these indicators seriously so they can make the necessary preparations to survive the disaster. Key informants have shared these indicators on the coming calamities or disasters:

1.) Drought:

“Kung huwaw, kung El Niño naa gyud mi langgam nga ginasubay ana nga tingog so pasabot nga nay dakong huwaw na muabot so mangandam na. Kini nga langgam mao ang ‘tiya-haw,’ brown ang color. So kung maglupad-lupad na siya, nya mag-tingo-tingog tiliman-on na nay dakong huwaw.

(We take as an indication that a long drought is coming from a bird called 'tiyahaw' (brown dove), so we make ourselves ready. If this bird flies around restlessly and makes a sound, then we would know that we will experience a long drought.)

2.) Heavy Rains

“Kung bagyo ang muabot sa isa ka area ang mutingog ana kay manok. Tas kanang iro pud mu-tuwaw sila, musaba sila. Isa pud kining mga baki nga mutingog pud na sila. Pananglitan kung alas tres sa hapon matingala ka nganong magtingog man ning baki sa ato pa dili normal. Naa gyud ulan na tulo (3) ka adlaw ani ba.

(Heavy rains are coming in the area if chickens cluck and dogs howl. We also take indications from frogs. If frogs croak at 3pm, which is not normal for frogs to croak at this hour in the afternoon, we would expect that heavy rains will last for three days.)

3.) Earthquakes

“Ang sa linog, pananglitan naay ibid, katong taas na brown. Kining ibid makit-an namo sa sa yuta maglakaw-lakaw, manggawas gikan sa ilalom sa yuta, pasabot naay linog na muabot

(“On earthquakes, we take indications from brown millipedes that come out of the soil.”)

Whenever these indications are manifested from the mentioned animals, the tribal chieftain will beat on the *gong* for all the people in their area to gather in a safe place to avoid casualties. “Despite numerous natural disasters that have constantly confronted the upland communities, the Blaans have learned various survival mechanisms and most of which are taught by their ancestors” (Espesor, 2014).



Bai Visitacion San Ricanor (first from left) and Bai Bethel Irene Ricanor Itliong (rearward) of Blaan Tribe from Brgy. Little Baguio, Malita Davao Occidental share their knowledge on disaster preparedness during the interview conducted by the study leaders Prof. Sajed S. Ingilan (second from left) and Ms. Lilibeth A. Cenojas (third from left) on July 11, 2016.

Disasters Experienced and Their Effects to the Blaan Tribe

Most Blaans in the Southern part of Davao suffer from landslides and flashfloods. Blaans experience these at least once a year due to strong typhoons and massive floods. These lead to the destruction of houses, farm lots, crops, livestock, and loss of clean water supply. An informant narrated:

“Kadtong bagyong Titang tung 1970 nakasinati ang mga Blaans sa Davao del Sur ug Cotabato ug baha ug landslide naanod among kabayo ug kabaw. Ang mga tanom kay nahapla, ang mga balay naanod. Pero ang nakaayo wala’y kinabuhi na nakalas.

(In 1970 when typhoon Kate hit the Blaans in Davao del Sur and Cotabato we experienced floods and landslides. The typhoon was so strong that a number of farm animals died, plants and trees were uprooted, houses were swept away by the floods. However, not a single life was lost.”)

Moreover, according to key informants, Blaans also experience drought twice in five (5) years especially in Barangay Lagumit in Malita, Davao Occidental. They said, *“Usahay sa kagrabe sa huwaw makasinati sila ug kakulangan sa pagkaon ug kagutom* (Sometimes drought is severe that those who live in this area suffer from food scarcity and hunger.”)

“More frequent and prolonged droughts cause the disappearance of plant and animal species that have sustained indigenous peoples as subsistence food sources or as essential to their ceremonial life” (<http://whatdoino-steve.blogspot.com>). Hence, taking lessons from these experiences, the fulong will encourage all members of the tribe to gather and store up food in a small nipa house whenever he sees these indicators of an oncoming drought so they will have food to share in the event that their farm products are destroyed. However earthquakes, have not yet stricken a bad experience among the Blaans.

Social Networks

The lumad communities in Malita had organized themselves into the United Tribes of Malita (UTOM). One of the aims and objectives of this organization is to give assistance in times of disasters, calamities, or any untoward incident. UTOM is composed of the tribes of Blaan, Tagakaulo, Kagan, and Manobo in Malita, Davao Occidental. Also, the Local Government Unit (LGU) under leadership of the incumbent mayor had created programs in 2016 to help lumads in Malita especially in times of disasters and calamities.

The informants elaborated:

“Mao na ang mayor namo sa Malita kay gipatapok niya ang mga lider diri sa United Tribes of Malita kay ang ilang mga lider sa ilang lugar naay mga tingog kay unsa istorya nila didto mao man puy tuohan sa ilang mg aka-tribu.

(“Our mayor called for a meeting with all the leaders of the United Tribes of Malita because people in their tribes only acknowledge the voices of their leaders.”)

Furthermore, the National Commission in Indigenous People (NCIP) is also extending their help to different tribal groups in Malita in many ways.

Some churches in the locality help them in times of disasters, too.

Erosion of Indigenous Knowledge

Dekens as cited by Espesor (2014) emphasized that the “traditional knowledge on flood preparedness of rural communities in Pakistan and Nepal, is getting eroded due to rapid changes in environmental and socio-economic context which highlight the utility of external and scientific knowledge.” The emphasis on the erosion of indigenous knowledge is also true in the case of the Blaan tribe in Barangay Little Baguio in Malita, Davao Occidental. An informant admitted that their collective knowledge on disaster preparedness is slowly eroding due to the influence of modern technology and mass media.

It was emphasized by an elder in Little Baguio in Malita, who is also one of the study’s key informants, that there is a diminishing interest among younger generations of Blaan in their community to learn about indigenous knowledge especially on disaster preparedness. One of the informants , who is an elder, stressed:

“Importante gyud na ma-transfer ang among nahibal-an sa mga sumusunod na henerasyon mahitungod sa mga umaabot na katalagman Kay kung ato man gung subayon ang kultura ug tradisyon sa kada tribu kay murag nangawala na gani. Bisan sa amo-a karun sa amo na tribu kung dili kami ang mangusog wala na kay na-modernize na sila.

(It is important that there is a transfer of knowledge to younger generations. If I were to assess, the indigenous knowledge of every tribe is slowly eroding, even with our own tribe. If we will not stand strong about these, the indigenous knowledge we take hold will all be in oblivion because of modernization.”)

She further stressed that no matter how she tried to pass on their indigenous practices and knowledge, most of the younger generations would not even care to believe her. This claim was strengthened by a young informant, who is in her mid 20s, when she said that most of the present generation of Blaans in Malita, Davao Occidental are no longer aware of these indigenous knowledge of their tribe. “Most families are not knowledgeable of these traditional ways of dealing with disasters and therefore these practices are not exhaustively transmitted to younger generations of the tribe (Espesor, 2014).”



Bai Visitacion San Ricanor validate the data on indigenous knowledge on disaster preparedness of Blaan Tribe presented by Ms. Lilibeth A. Cenojas on September 21, 2016.

Chapter 4

Dibabawon and Manguangan

of Montevista, Compostela Valley Province

Gladys Florangel I. Ortiz

History and Background

The Dibabawon and Manguangan share a similar origin. Macario Tiu (2005), citing Garvan's classification, placed the Dibabawon under the Manobo. Garvan stated that the Dibabawon and the Manobo have similarity in "language, general culture, and religious belief" and by genealogy, "they belong to the Manobo tribe. On the other hand, the Manguangans are, most likely, a branch of the Ata Manobo and, by extension, also of the Manobo (Ancestral Domain Sustainable Development and Protection Plan of the Dibabawon and Manguangan Tribes).

The Dibabawon was simply "differentiated from the Agusanons (referring to Manobo) by their place of residence. Dibabawon originally meant "dibabao" or upland dwellers. Therefore, they are the people who dwell on the mountain (ADSDPP) or people from the mountains (Tiu, 2005).

According to Tiu (2005), the Dibabawon's main center was Monkayo located near the confluence of the Manat and Agusan Rivers. Monkayo is the neighboring municipality of Montevista where the claim for ancestral domain is located. Monkayo used to be called Dagohoy, after its *bagani* (warrior), Dagohoy.

Monkayo was said to be the main center of the Dibabawon, a detail disputed by the Montevista Dibabawon; Monkayo, they say, is a melting pot of four tribes. These tribes are Dibabawon, Mangguangan, Mandaya and Manobo (ADSDPP). The creation of several towns in the Davao Province caused the Dibabawons to scatter in different towns. At present, Dibabawons can be found in Monkayo, Laak and Asuncion. Unknown to previous studies, they are also located in Montevista, a municipality adjacent to the aforementioned areas (ADSDPP). During the Spanish period, the Dibabawons continued to settle in various mountain ridges of now Laak, Compostela Valley as well as Asuncion, Kapalong and San Isidro of Davao del Norte. These areas were referred to by Mandabon as their land and territory (Institute for Indigenous Peoples' Education, 2008).

On the other hand, data from the ADSDPP (n.d.) showed that Mangguangan came from the root word guangan or those who lived in the forest. Their traditional territory used to be upper Agusan, a range between Salug and Agusan, and bound by Tagum River, Hijo River, Totoy River and Simulao River. They were said to have waged war with nearby tribal territories like Mansaka to the northeast, Mandaya to the southwest, and Dibabawons and the Manobos in the northwest. Tiu (2005) theorized that this decimated their population. From 10,000 in 1900 (Garvan,), the Mangguangans' present population is estimated between 3,000 to 4,000 (ADSDPP).

Constant contact (by marriage, trading relation or warfare) blended the culture of the two tribes that was affirmed by their insistence to make the title of their ancestral claim as both owned by Dibabawon and Mangguangan. The Saug River is the boundary of the Dibabawon and the Mangguangan tribe of Montevista, Compostela Valley [Institute for Indigenous Peoples' Education (IIFE, 2008)].

The Dibabawon ancestors maintain a good and harmonious inter-tribal relationship and religiously-observed natural territorial boundaries. According to one of the tribal elders of Laak, the Anahawan River that flows down to Omayam and Agusan River traversing the municipalities of now Monkayo, Compostela Valley and Veruela and Loreto of Agusan del Sur were the territorial boundaries between the Dibabawon and Manobo tribes in Asuncion, while the Magdao River is the common boundary between the Dibabawon and Manguangan tribe of Compostela Valley.

The Mangguangan and Dibabawon Tribes were the original inhabitants of the eight municipalities and one city covering the area of Tagum City, Asuncion/Asuncion (KAMADI District) KADIMA, New Corella, Laak/Kapalong, Mawab, Nabunturan, Montevista, Compostela, and Monkayo in the province of Compostela Valley.

According to Tiu (2005), the Dibabawon is a branch of the Agusanon Manobos, with the Dibabawons differentiated from the Agusanons by their place of residence. They live in *dibabao*, that is, in the uplands, hence the name Dibabawon, or people from the mountains.

As stated in the ADSDPP, “both Dibabawon and Mangguangan communities are ruled by a “maniguon”. The maniguon is assisted by a set of elders in the community. As an ascribed status, the maniguon comes from the lineage of *bagani* (warrior) or *baylan* (healer). The selection for the maniguon is less on ascribed status but more on proving one’s ability to lead and help people in need, albeit the capacity to win battles. It is also required that he displays wisdom in his decisions”. The *bagani* also command authority and spells fear among neighboring tribal villages. He becomes one if he proves himself in fights. He plays the military arm of the tribal village. Thus, “the potential *bagani* has to be brave, a willing warrior, trained for war and possess a battle record” (ADSDPP). He is assisted by the “*karumaan*” (set of followers) and “*Al’lang* (slaves, or the captives of war from other tribes). The Dibabawons\ favorite *bagani* was Apo Mandabon and Cae for the Mangguangans. The *baylan* (healer) complements the secular role of the *maniguon* and *bagani*.

As the spiritual leader of the tribe, the *baylan* provides the connection between the world of the people and the world of the spirits. “Rituals for good harvest and burial are facilitated by the *baylan*”. The baylan also acts as the healer of the community with the help of his *abyan* (guardian spirit)) who uses the *baylan* as a medium to cure diseases.

Furthermore, “both tribes rely on farming as the main basis of existence. They plant upland rice (*omay*), corn (*bataad*), cassava (*balanghoy*), *ube* (taro plant) *gabi* (taro plant), sweet potatoes (*dawa*), banana (*saging*) and vegetables. They transfer from one place to another after one or two harvests to allow the soil gets back (sic) to its original state” (ADSDPP). Slash and burn farming (*kaingin*) is used to clear the farm lot. They settle from one place to another. In the past, they had no concept of securing titles for the land.

Indigenous Knowledge on Disaster Preparedness

Dibabawon

The Dibabawons have developed indicators of coming calamities such as heavy rains, drought, or earthquake.

They claimed to know when a typhoon is about to strike their area. When dogs and crows make a lot of noise, a disaster is imminent.

This is believed to be especially true when a dog howls. The flowering of the “tuog” tree (bishopwood, which they consider sacred) and the “bukawi” (*Dinochloa scandens*) plant is also interpreted as a sign of an impending typhoon. The simultaneous flowering of a hundred of these trees, for example, is considered unusual and therefore, a sign of an impending typhoon.

As an informant said, “kay ingon pa sa aking lolo sauna sa akong amahan, mao nay gitawag diri nga silot sa unang panahon, kay nangatumba ang kuryente so bagyo na ‘to. Wala pa toy ngalan tong bagyoha tong 1912. Sa kaniadtong panahona, nakit-an nila didto sa ilang bukawehan namulak to pag-abot sa Pablo tong 2012

(As my grandfather said (my father’s father), that is what we call punishment; since the utility poles have fallen, that is a typhoon. The typhoon that occurred in 1912 had no name yet. In 2012, they were able to confirm the veracity of the simultaneous flowering of the trees: typhoon Pablo struck the area afterwards.

There are other warning signs. When frogs croak incessantly, it is a sure sign of heavy rains. Even when this occurs on a sunny day, rains will surely come later in the day. Also, the sound made by a tala and a *mangloy* also predict rains accompanied by strong winds. A *mangloy* is a snake-like creature who makes whistling sounds. An informant recalls his father’s experience at a time when the *alimukon* still abound in the area. When the *alimukon* start making a lot of noise, his father would immediately prepare for home: the *alimukon* served as a warning device.

Centipedes suddenly making their way inside their homes is also a sign. During the last typhoon experienced in the area, they recall seeing centipedes inside their homes prior to the typhoon.

Moreover, Dibabawons would know that a drought will hit their area by observing certain signs. Sounds made by the bird “*kwahaw*”, and the insect *gangis* (cricket) are considered as omen of an extensive drought. Disappearing leaves of the narra tree – and the tree itself (*mangilis*) is also considered a sign. If the sky looks reddish, one should expect an extremely cold weather the morning after. Worms also start coming out of their hiding places when drought is about to commence.

Landslides are considered imminent when the Dibabawons see several stones sliding down a hill. Heavy rains, *buhawi* (twister), and earth cracks are also causes of alarm over a possible landslide.

Heavy rains could also be foreseen. Incessant croaking of frogs drives them to prepare for rain. The same is true when they hear a sound similar to the hissing of snakes. One informant recalled his father telling them to prepare for any event when the bird *alimukon* makes a lot of noise as it is a warning sign. The *tukong* tree is also observed for signs of the season; the absence of leaves is a sign of the rainy season while the appearance of *salingsing*, of the dry season.

Moreover, earthquakes are considered imminent when there is sudden silence in their surroundings. Worms, who Dibabawons say usually make noise,

suddenly turn silent, leading the elders to proclaim that an earthquake is about to occur. Per experience of the informants, an earthquake does occur after the worms stop making noise. They consider the worms as good predictors because of their close and constant contact with nature.

Observation of these signs drives them to prepare for what is about to happen. Droughts are prepared for by planting drought-resistant crops. These crops include the *wakag-gabi* nga pugtong (a type of taro plant). Also, *landang* (from the sago palm or *lumbia*), which they consider as a “first class na *kan-on sa tao*” or a premier food for humans. This, they say, is the reason why indigenous groups plant sago: it is their staple food. The *lumbia* is processed to extract *landang*. *Natad*; Planting *lumbia* also helps them prevent disaster since *lumbia* prevents landslides and its *palwa* (frond) could be used as material for roofs and floors.



The Dibabawon Council of Leaders with the Study Leaders during the consultation and validation of data.

Manguangan

On the other hand, the Manguangans have similarly identified some signs that indicate an impending disaster. The noises made by the crows and the *tumaban* alarm them as it is a sign of disaster, more so when their dogs howl in consonance with the crows and the *tumaban*. One informant recalled the story told by his paternal grandfather about a typhoon that occurred in 1912, yet unnamed. His grandfather said that before the typhoon struck, he noticed that about a hundred *bukawe* trees flowered at the same time. At the time, his generation interpreted the typhoon as God's punishment to His wayward people. In 2012, he remembered his grandfather's story when he saw several *bukawe* trees flowering at the same time. True enough, a few weeks after, typhoon Pablo struck their town.

However, the crowing of the *kwahaw* (hornbill) is interpreted as a sign that the dry season has started, a time for harvest; it is not a sign of an impending disaster. Nor is the ants' behavior of stocking up on food supply an adverse sign; it indicates the start of the rainy season. Other signs of the rainy season are the following: thunder at noontime on a bright, hot day and the ricefield looking reddish. Heavy rains are expected when there is no wind and when there is an eerie silence.

Finally, the cackling of chickens between 9 to 10 in the evening foretells the onset of illnesses in the community. An informant shared that his elders

told him that when the entire trunk of the *tuob* tree is wet, they prepare for a disaster. Also, they should heed the sign given when the *alimokon* bird crows just as they are about to leave the house. It prompts them to stay home instead since it is a sign of danger. The crowing of the *kwahaw* indicates the start of drought. The “chirping” (the sound produced when they rub the upper and lower parts of their wings) of the crickets, the loss of the narra tree’s leaves, as well as the onset of an afternoon red sky in the south followed by a chilly morning are seen as signs of a drought. The sight of soil moving away from foundations and rocks falling from slopes warn them of a landslide.



The Mangguangan Council of Leaders during the validation of data at MITA Office in Montevista, Compostela Valley

Disasters Experienced and Their Effects to the Tribes

Most Dibabawons and Mangguangans in the area suffer from landslides and flashfloods. Montevista was relatively typhoon-free, until typhoon Pablo struck the area in 2012. It destroyed most of their crops and killed their farm animals such as horses and goats. Many of them lost their houses which were made of light materials. Several families suffered from hunger and sickness; however, there were no deaths in their area. Another typhoon, Agaton, struck in 2013 with less devastation to the tribe. Drought took a heavy toll in March and April of 2015. Most of them lost their primary means of livelihood as their crops either died or were destroyed by pests such as rats and dangan (stem borer). In 2013, typhoon Agaton struck Montevista which led to landslides. A small amount of crops were destroyed and a few houses made of light materials were damaged. Some families did not have enough foods.

In January of 2014, residents of flood-prone barangays in Montevista had to be rescued and evacuated after five days of continuous rain. Eighty percent of Barangay Banagbanag, for instance, have reportedly been submerged with flood waters. The waters came from Manat River in nearby Nabunturan, flowing over the bridge along the Montevista-New Bataan highway.

Two individuals from Barangay Dauman in Montevista were reportedly electrocuted (MindaNews, Over 1,000 flee floods in ComVal, January 2014). Severe flooding in January 2017 led to the relocation of forty-two families or 161 individuals to the evacuation center at the elementary school in Barangay Banagbanag, Montevista. Heavy rains due to the tail-end of a cold front drenched the area (“Rains due to ‘tail-end of a cold front’ flood Davao provinces”, 2014).

As a result of the disasters experienced, Dibabawons and Manguangans have learned to engage in activities to prepare for disasters. They construct a *kob* where they could run to for shelter during a typhoon. Stocking up on root crops and water, some spare blankets, basic medicines and clothes is also resorted to. The *sawong* or *bulitik* is also prepared and kept in a conspicuous place, ready for grabbing in emergency cases. However, they share that the *bulitik* has become extinct so they use *lawaan*, instead. Important documents are gathered and wrapped in plastic and kept in a safe place.

In preparation for a drought, Manguangans plant more root crops for food and plant trees to protect springs and rivers. Landslides are prepared for by leaving landslide-prone areas for the lowland areas. This is done when they experience either two successive days of rain or when heavy rains persist for 5 hours which by then, a landslide is deemed imminent.

To counter a lightning strike, they mix agipo with some hair strands of the person who made fun of an animal.

In the long term, the natives have recognized the value of planting more trees to protect them during disasters. Graduating students are required to plant 300 trees before graduation. Most of them plant falcata, a soft wood specie which can be sold easily since it is used in the manufacture of plywood and paper. When they do cut one falcata, they replace it by planting ten of the same kind. Some also plant the hardwood, narra, as it takes several years before it is fully grown; hence, a big help during disasters.

Social Networks

In Montevista, each of the 18 barangays has a Barangay Tribal Council of Elders and Leaders (BTCEL). Each BTCEL is composed of the following: Barangay Tribal Chieftain, four members of the Council of Elders, Secretary, Treasurer, Auditor, IP Youth Representative, IP Women Representative, and IP Professional Representative. The BTCELS are the direct indigenous peoples organization in the barangay level tasked to manage and administer the affairs of the ancestral domain within the context of the vision, mission and goals of the Dibabawon and Mangguangan tribes following the implementation of programs projects and activities reflected in the ADSDPP Investment Plan and enforce policies and guidelines formulated, passed and approved by the Municipal Tribal Council of Elders and Leaders (MTCEL) in coordination and partnership with the Ancestral Domain Management Office (ADMO).

In accordance to the customary practices of the tribe, selection for the composition of functionaries with a seat at the BTCELS shall be through a community consensus process or as that adopted by each community concerned. The federation of the 18 BTCELS resulted to the formation of the Municipal Integrated Tribal Association, Inc. (MITA). It is registered with the Department of Labor and Employment (DOLE) with No. D1999-00125 on February 10, 1999 chaired by Datu Herminio T. Opa,

with No. D1999-00125 on February 10, 1999 chaired by Datu Herminio T. Opao, It is an association of leaders, elders and members belonging to the Mangguangan and Dibabawon Tribe. MITA primarily functions as a policy-making body representing the Dibabawon and Mangguangan tribe, governing the entire affairs of the ancestral domain

The BTCLs have developed a system before, during, and after a disaster. Each BTCL must create their own *kuratong*. It is a node-length bamboo pole with a rectangular opening along its length that increases the sound by beating it with a stick. This is used for communicating coded messages from one person or group to the other (Bukidnon, n.d.). A slow beating of the *kuratong* made by the Barangay tribal chieftain during a typhoon means that the storm is either identified as Signal No. 1 or No. 2. This could be time for the residents to prepare the *takob* and to stay indoors. A faster tempo means that the storm is either identified as Signal No. 3 or No. 4. This means that the residents have to evacuate from their respective areas. Five fast, continuous beats mean that the residents have to run to the *tambolong* for shelter. Ten beats, mean that all (i.e., the storm) is clear, so to speak, has passed. It is now safe to come out of the shelter and start cleanup activities. Later, the residents assemble at the tribal hall to assess the damage for reporting purposes to the municipal government of Montevista and the local office of the NCIP. A *panawag-tawag* or calling of the good spirits is also held to give thanks when there are no casualties.

Erosion of Indigenous Knowledge

Members of the Pacific community recognize that with time, traditional knowledge is eroding due to a combination of factors such as migration, urbanization, and the passing away of elders (Berrel and Philips, 2013.) Traditional coping strategies were important to help communities cope with the effects of disasters and this is indeed true among both Dibabawons and Manguangans.

Chapter 5

Mandaya

of Cateel, Davao Oriental

Lilibeth S. Galvez

History and Background

The Mandaya are the dominant indigenous people (IP) that abound in the province of Davao Oriental. For Sibayan (2006), these are the IPs who donned in colorful attire since their clothing is adorned with embroidery and beads and wear lavish accessories from the head down to their foot.

For Sillada (2013), the Mandaya are the greatest and the best tribe in Eastern Mindanao, considered as a people of superior race. They live to hunt and rely solely on soil as this provides their means of livelihood. Maso as cited by Ompang (2015) mentioned that the word Mandaya means “inhabitants of the upland”. The local word “daya” implies mountain; hence, the Mandaya are people who are from the mountains. The Mandaya people traditionally inhabit remote mountain clearings, gathering mountain products and hunting and fishing with poisonous roots, fish traps and nets. Today, they are *kaingin* farmers and many have moved to the eastern shores of Davao Gulf (Handbook Hilltribes of the Philippines).

According to Asia Mission (AMNET) in an article, the Mandaya are believed also to be part of the Manobo group.

However, they became distinguished because of their sharp Spanish features with generally good-looking individuals, also are peace-loving and of the honorable kind (Joshua Project, 2017).

Another article further states that the Mandaya are great shifting cultivators who depend on slash-and-burn way of farming. They are contented with their harvest from fishing and hunting animals and by planting abaca as cash crop. In terms of the traditional family structure, they believe that the father is the head and sole provider of the family while the mother takes care of the children and sees to the needs of every member of the family including her husband. Teaching the Mandaya traditions and beliefs is also believed to be one of the role of the mother, inculcating it to the mind of her children (Bigornia, 2011).

At present, they are among the ethnolinguistic groups in the province who are also displaced with the influx of local migrants coming from Visayas and some parts in Mindanao. Other tribes may have infiltrated them but their language remains distinct as they speak their vernacular, which is Mandaya. Just like any IPs in the country, this tribal group possesses a kind of culture worth documenting and preserving for the next generation as this becomes extinct with the contamination from the other tribes.



Photo Credit: GHA Discovery

The Locale of the Study

Cateel is a second-class municipality in the province of Davao Oriental in Region XI that belongs to the Mindanao group of islands, Philippines. Towards the end of 2007, Cateel is home to 33,109 residents. It has infrastructures and facilities such as the municipal gym, public market, concrete roads and highways, wifi zone municipal complex, public parks, bus terminal, jail, fire truck and station, nature parks, (specifically the Aliwagwag Falls, considered to be one of the tourist destinations in the province of Davao Oriental), a municipal hall, and a police station (PPDO, 2006).

Cateel is the intersecting municipality going to Davao via Mati City and Compostela Valley and is accessible by land and water transportation. By land, it can be reached by van or bus from Davao City and by water, it can be traversed via Baganga Wharf.

The Ancestral Domain Sustainable Development and Protection Plan (ADSPP) of the Mandaya tribal group characterizes the locality as having extreme plains endowed with irrigable vast tracts of land, uneven distribution of mountains and hills, long rivers, numerous streams, and a couple of swamps. The southern and middle part of the municipality is classified as mostly plains among the lowland barangays consisting of Poblacion, San Vicente, San Miguel, San Rafael, Alegria, Baybay, San Alfonso, and Taytayan; with slightly rolling and hilly barangays of Magalhus, Aliwagwag, and Malibago with an elevation that ranges from more than 100 meters above sea level (masl) to 756 maximum sea level (SL) at the highest point.

Climate and Rainfall

The ADSPP describes the climate in Cateel as fair with two seasons: rainy, or *tag-ul'lan* in November to late March or early April; and, dry or *tagsuga* in May until August. January is the month with the most incidences of rains while the months of May to September have occasional rain showers. When the ITCZ moves south in November and December, it brings northern and westerly winds that cause heavy rains and cool nights in the northern areas of the province.

The municipality's geographical location manifests that the area belongs to Type II of the climate classification according to the Philippine Atmospheric Geophysical and Astronomical Services Administration or PAGASA, the Philippines' weather bureau. Cateel has two prevalent types of seasonal winds that occur every year: *amihan* (from November to March) and *batukan* (from August to October).

Indigenous Beliefs and Practices in Fishing

The Mandayas observe certain rituals and practices for various reasons. Some rituals are performed to ensure a bountiful harvest for they believe that the degree of steps in rituals that are followed will have a great impact on the effectiveness of their livelihood. Other rituals are performed prior to the use of some resources or at the beginning of an activity, most of which relate to fishing. Offerings are also likewise made to ensure that they can catch more fish. Among the rituals they perform are:

1.) *Paubol'l* (purifying with smoke)

The Mandaya believe in the existence of sea spirits so they call on them when bad weather occurs and when they have no catch after having been on anchor for long hours. This ritual is done by creating smoke made from a mixture of grasses like *amorseko*, (lovegrass), *sampinit* (wild raspberry), and *kamanyan* (incense) left to burn over coal. Smoke is wafted around the fishing boat to ward off evil spirits that cause misfortune. With the practice, the Mandayas hope for the *bungsod* (fish cage) to attract fish and prevent its escape in a manner similar to an *amorseko* and *sampinit* are stuck on fabrics.

2.) *Panawag-tawag* (calling on gods and other spirits)

This is a ritual performed for a newly-built fishing boat. In performing this ritual, the Mandayas slaughter an animal, particularly a white male duck, with the belief that this symbolizes their keeping afloat even when submerged in water. They believe that the boat would never capsize or sink even if it encounters big waves in the middle of the sea. This ritual is also performed when the Mandayas experience successive misfortune of having no catch despite numerous attempts in fishing.

3.) *Panabi-tabi* (requesting for permission)

There are instances when the Mandayas hear a rooster crowing or a hen clucking as they are out to sea. The Mandayas believe this to be the doing of a sea spirit so they immediately utter a request or permission to fish in the area then remain quiet so as not to disturb these spirits. This also implies asking for forgiveness believing they have violated some rules of the underwater spirits.

4.) *Pagpadul'lod* (reciprocation)

This is an act of throwing coins, candy, cigarettes, and liquors as an (specifically Mallorca brand) offering to *kataw* (mermaid) and other supernatural beings or underwater spirits who would give them abundant catch in return. This is done when they feel goose bumps as they anchor in the area.

5.) *Tawu-an* (community sharing of harvest)

This is an observance in the community or neighborhood for all the harvest during the maiden voyage of a newly-built boat. It is a practice that the first harvest of fish with a new fishing boat is not to be sold but to be partaken by the people in the community. They believe that any blessing, when shared, will give back in many folds.

6.) *Pag-ampo* (praying)

There is no substitute in praying to God and asking for abundant catch. Before they leave their homes, they would always say a silent prayer or make the sign of the cross to avoid accidents while on sail and above all to have enough harvest for the family's sustenance.

This was also supported by Ohira (n.d.), emphasizing that religious activities like praying have been part of the everyday life of the ancestors. Even Hawaiian culture believes that marine life also has ears and that an offering is to be made to have bountiful harvest when fishing.

The Mandayas also believe in other signs that pertain to their luck or fate. Some of these are:

1.) *Damgo* (dream)

If their dream is *maraat* (not good), they would not pursue fishing the following day. Certain numbers in dreams mean bad luck, like the number 13. Murky waters, hazy images, and anything that does not appear clear also are considered as bad omens.

2.) Cooing of *alimokon*

The cooing of an *alimokon* bird before they sail to fish implies bad luck. When this happens, the Mandayas will no longer pursue fishing to avoid possible dangers.

3.) *Paghatsing* (sneezing)

Sneezing before fishing indicates bad luck which prompts the Mandayas to stop fishing. This is remedied by letting a few more minutes pass before proceeding, with the hope that such bad luck would just pass.

4.) *Labungan* (stepping over)

A woman on her menstrual period stepping over fishing gears is also believed to cause bad luck. Hence, women are forewarned not to be near the fishing gears. On hindsight, this might also show the gender bias of the tribe as they demonstrate patriarchal tendencies in their bearing.

5.) Jackfruit wood as bow, hull, and stern of fishing boat

The Mandayas believe that the bow, hull, and stern of the fishing boat should be made of a jackfruit wood as the latex and inviting smell of the fruit would also attract the fish and get stuck to the boat as soon as this is used for fishing.

Indigenous Knowledge on Climate Change

In a case study conducted, it was reported that every indigenous people or community has observed impacts from temperature changes (McLean, 2010). Rajabali (2017) even cited that the indigenous people are prone to the effects of climate change since they have closer connection with the environment in terms of their livelihood, culture, social system, and spirituality. Due to a longer period of living in this kind of setting, indigenous people had been able to adapt in every environmental change that comes. Accordingly, this adaptation somehow became their way to respond to the impact of climate change.

Mc Klean (2010) mentioned in a study conducted by the United Nations University that many indigenous community observed the changes in temperature, although degrees vary and is more apparently in different seasons.

Even if climate change is a global phenomenon, the Mandayas do not have any idea about it. This is supported by the survey conducted by ADSPP among residents in Cateel which revealed that 84.1 percent have no knowledge on climate change. It is just but unfortunate that for these IPs, who often live close to natural resources and have observed all the changes around them but do not consider these as climate change but as a curse from God for their misdeed.

Salick and Byg (2007) stated that the “knowledge and practices of indigenous people gained over time through experience and orally passed on from generation to generation - has over the years played a significant part in solving problems, including problems related to climate change and variability.”

The Mandayas can only base their knowledge of the weather from their observation on the amount of rainfall recently and in the past. Back then, rainy days can be predicted and had been observed to affect all the municipalities of Cateel during the wet season. Today, it has become unpredictable as rainfall can be felt in some parts of the locality while the other parts experience sunny days. Extreme heat like *huwaw* or drought strikes any time of the year even if the months are supposed to be wet seasons.

They concluded that the pattern of rain has become erratic nowadays. In the past, the seasonal calendar follows either *amihan* or *batukan*; now, wet and dry seasons are observed to be happening in any month of the year. Even during *amihan*, they cannot go fishing as the increasing temperature causes big waves that pose great threat to their lives.

During a full moon or *bul-lanon*, the Mandaya observe scarcity of fish and they attribute this to high salinity of seawater while during *ting'luman* or *ting-dangan*. This is the period when there is abundance of catch and considered this as a fortunate time for fishing. *Ting-dangan* results from bringing suga or torch to attract (*pagpadul'lod*) fishes.

Indigenous knowledge on natural phenomena

With collective knowledge of the land, sky and sea, these indigenous people are excellent observers and interpreters of change in the environment (Reid & Taylor, 2015). Other indigenous observations on natural phenomena are also being noted; such as:

1.) *Linu'ug* (earthquake)

The Mandayas believe that when a cat climbs a tree, an earthquake is sure to happen after five minutes. It is noteworthy that their belief of a coming earthquake is not only based on the behavior of a cat but also on occurrences when an eel fish is said to be caught between the pincers of a crab.

2.) *Panag-huy* (whistling)

If extreme humidity is experienced whether they are inside or outside the homes, the Mandayas would have to whistle. This symbolizes a “calling of the wind.” Either by fate or coincidence, a soft breeze often comes in.

3.) *Tambunakawa* (eclipse)

For the Mandayas, an eclipse is nothing more than a *tambukunawa* or a giant crab swallowing the moon to seek revenge.

Effects of Climate Change to Fishers

Climate Change is apparent even from a global viewpoint. In the United States, part of its economy depends on the total income of the fishing harvest. Accordingly, this contributes to as much as \$1.55 billion to the economy annually (as of 2012). Several marine species, most of which are significant to the economy, had migrated northward from the Northeastern United States and this was all blamed on the changing climate. Thus, many marine lives can find colder streams and lakes up north or along the coasts or in the ocean. Somehow, marine disease outbreaks had been linked to climate change. These add further stress to fisher folks and worse, to the US economy (EPA, 2017).

Similarly, the effects of climate change have also reached national concern in the United Kingdom. The Food and Agriculture Organization (FAO) of the United Nations had reported that the marine fisheries production way back in the 1980s had reached the maximum capacity. However, this had approximately declined by half in the recent years (Daw, 2007).

In Coromandel Coast India, a study was conducted to analyze the impact of climate change on the fishermen's livelihood. From there, it was found that since fishing is a human activity that serves as a border between human society and sea, the sea is deemed as an abundant source of marine life that fills 15 percent of the protein requirement of the diet of three billion people (Johnson, 2012).

This gives many important reasons why human activities will be affected by environmental changes. For instance, both temperature and wind are climate-related. This alone can be considered as a huge factor to the change in numbers of marine life in a particular area. Suffice to say, a change in climate could mean a change in fish production as well (Shanmugarajah, 2013).

On the other hand, in a study conducted in Alaska, it was reported that the effects of climate change include changes in productivity since there already is a sudden rise on the intensity and occurrence of weather events and that bad weather is not favorable for fishing activity. Great storms as an effect of climate change also damage low-lying inhabitants through flooding, erosion, and other forms of storm damage. Eventually, these storms interfere in the supply distribution, transportation of supplies and products, and price structures of inputs such as fuel, making fishing operations unprofitable or impossible. This also leads to a decrease in food and water security that affects societies at all levels (Johnson, 2012). This effect will be worsened even more as the melting of glaciers and thermal expansion of water continues, resulting to rising sea levels. The ocean's pH level will decline because of greater absorption of carbon dioxide, as cited by Mohammed (2013).

Going back on the local perspective, even if the Mandayas have no idea about climate change, they observe the changes in the climate nowadays,

especially after experiencing typhoon Pablo that devastated the municipality and its neighboring areas in Davao Oriental on December 4, 2012.

Receding shorelines are also inevitable in the area due to climate change. The shoreline along the municipality of Cateel has gone farther while there are also shoreline areas that have now become submerged in water. These incidents point to a rising sea level along the coastline. They even feared that continuing changes in the climate may cause slumping of waves anywhere which would eventually endanger the lives of residents living near the shorelines.

As climate change greatly affected the marine resources, a big impact is felt on their livelihood as well and this, the IPs can only attribute to fate. The abundant catch they had was gone. Nowadays, they have to resort to performing different rituals so they can bring home sufficient harvest enough to sustain the family's daily needs.

Adaptation to Climate Change

Adger, Armwell & Tomkins (2008), pointed out that “adaptation involves changes in social and environmental processes, perceptions of climate risk, practices and functions to reduce potential damages or to realize new opportunities”. Increasing air temperature prohibits fishers from their tasks since it would be harmful for them to cross the sea because of the big waves.

The threats from nature have now become greater: almost uncontrollable range of rain, storm, extreme heat and cold temperature, more frequent hot days and nights, rising sea levels, and warming global temperatures are among those they experienced as effects of climate change.

For Salick and Byg (2007), the indigenous peoples offer alternative knowledge about climate variability and change based on their own locally developed knowledge and practices of resource use. The Mandayas have also shown their traditional ecological knowledge in adapting to changing environmental conditions. For instance, when they catch fish in the middle of the sea, they wear a *sambra* (jacket) to protect their bodies from extreme heat. They also use sunglasses to protect their eyes since too much exposure to the heat of the sun causes sore and reddish eyes. Another recourse made is through *kanlup* or by dipping in waters to avoid extreme exposure of their skin to the sun.

As fish becomes scarce nearby, the Mandayas go beyond the municipal waters in the hope of catching more harvest, even reaching as far as the waters of adjacent municipalities of Baganga and Boston.

Mitigation on Climate Change

The aim of mitigation is to prevent hazardous human interference with the climate system. Also, it aims to stabilize greenhouse gas levels in a time frame enough to allow ecosystems to adapt naturally to climate change. Finally, it warrants that food production is not threatened, and enable economic development to proceed in a sustainable manner (Shaftel, 2013).

The Intergovernmental Panel on Climate Change (IPCC) in 2007 defines mitigation as the technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce GHG emissions.

The Mandayas have their own peculiar ways on mitigating climate change. These are:

- 1.) *Dul'lukan* (countering thunder, lightning, and storms)
This ritual is performed by burning the leaves of red pepper and *bal'lante* tree and smoldered with a knife. It is believed to stop heavy rains, thunder and lightning.

2.) *Pagpaul'law* (stopping heavy downpour of rain)

This is a kind of ritual done to stop a heavy downpour. This is done by pounding and squeezing a sugarcane stem until the sap comes out which is then poured in a glass. A *panawag-tawag* is then executed.

Another method to stop heavy downpour is by throwing a handful of ashes around, accompanied by reciting, "*Ul'law da kayompo* (Please let the rain stop").

3.) *Pagpau'uan* (asking for rain)

On the other hand, there are also instances when the Mandayas sense a coming long drought that will affect them. They counter this by performing any of these three things in asking for rain:

- 1.) Soaking the feet of a Sto. Niño statue in water;
- 2.) Throwing a cat in a river while laughing out heartily; or,
- 3.) Going to Aliwagwag Falls and bursting into a deep hearty laugh before its ravishing flowing water.

Chapter 6

Obu Manuvu

of Marilog District, Davao City

Sajed S. Ingilan

History and Background

Even before the Spaniards colonized the Philippines, the Obu-Manuvus were already living peacefully in their respective territories. From the account of the elders, the Obu-Manuvu came from Bukidnon, North Cotabato, and Davao City. In North Cotabato, they lived in Arakan, Kidapawan, and Roxas, while in Davao City, they had settled in Marilog. They considered Tuwaang as their ancestor.

Originally called Tahaurogs, the Obu-Manuvu is a sub-tribe of the Bagobos. The tribe's compound name is derived from what is ascribed to it by the other two sub-tribes: Bagobo Klata (or Jangan) and Bagobo-Tagabawa and by its self-ascription, both ascriptions being combined. In Davao City, the Obu-Manuvu can be found in all highland areas north of Tammuhan (now Tamugan) River and west of Davao. Particularly, these areas are: Dalag Lumot, Magsaysay, Salaysay, Marilog Proper, Bantol, Malamba, Suawan, Tamugan, Tambobong, Carmen, Tawantawan, Baguio, Malagos, and Gumalang.

Presently, the ancestral domain of the Obu-Manuvu tribe of Baguio and Marilog Districts in Davao City has a total land coverage of 36,713.52 hectares awarded by the National Commission on Indigenous Peoples, through the Commission En-Banc Resolution No. 73-2008-AD. Of the total area, 32,627.73 hectares are forestlands. It is worthy to note that the two major watersheds in Davao City namely, Talomo-Lipadas and Tamugan-Panigan, are located inside the territory of the Obu-Manuvu (The Ancestral Domain Sustainable Development and Protection Plan of Obu-Manuvu Tribe, n.d.).

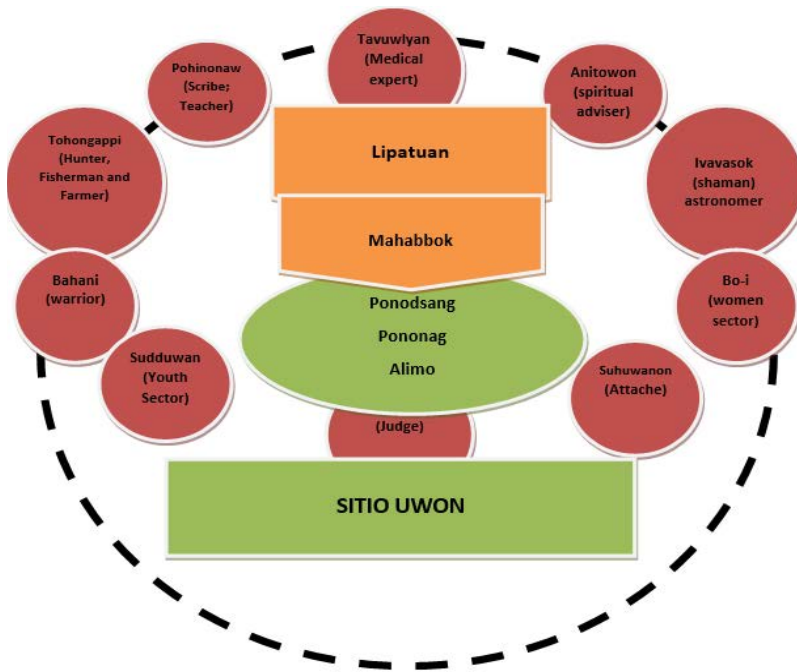
All of the barangays covered by the ancestral domain are accessible to the public. They can be reached via public vehicles like motorcycles, buses, and jeepneys. However, some of the remote areas can only be reached by foot. As for telecommunications, Smart and Globe antenna lines serve the residents with cellular phones. For electricity, majority of the barangays are serviced by the Davao Light and Power Corporation and a few by the Cotabato Electric Cooperative. Some residents are also recipients of solar lamps distributed by non-government organizations. As to water utilities, not all areas are served by the Davao City Water District. However, the Local Government Unit's potable water system with a Level 2 capacity serves the rest (The Ancestral Domain Sustainable Development and Protection Plan of Obu-Manuvu Tribe, n.d.).

Seen in Table 1 is the Obu-Manuvu population in Davao City taken from The Ancestral Domain Sustainable Development and Protection Plan of Obu-Manuvu Tribe.

Table 1. Obu-Manuvu Population in Davao City

	Name of Barangay	Population
1.	Marilog Proper	5,740
2.	Tambobong	4,290
3.	Salaysay	2,798
4.	Magsaysay	1,965
5.	Suawan	1,944
6.	Dalag Lumot	1,936
7.	Tamugan	1,223
8.	Malamba	1,106
9.	Bantol	972
10.	Carmen	412
	TOTAL	22,386

Even before the Philippine government came into existence, the Obu-Manuvus have already occupied North Cotabato, Bukidnon, and Davao City. All decisions and instructions emanate from Obu-Manvu ancestral domain Council of Elders and Leaders or known as Minonuvu No Boyo to Od Possopong-Ngoy. Hence, the indigenous political structure of the Obu-Manuvu tribe reflects a top-bottom approach (The Ancestral Domain Sustainable Development and Protection Plan of Obu-Manuvu Tribe, n.d.) as seen in Figure 1.



The Council of Elders and Leaders is the highest policymaking body composed of traditional and authentic elders and leaders of the tribe. The *lipatuan* takes the next lead being symbolic in nature. In the Obu-Manuvu community in Davao City, Lipatuan Joel Unad takes this position.

In terms of decision making and conflict resolutions, the *buyyahon* is equal in rank with the *lipatuan*. A *buyyahon*, equivalent to the Muslim title *datu*, should be a leader with integrity and an impressive track record since he gives pieces of advice and imposes discipline whenever necessary to the members of the tribe.

Both the *lipatuan* and *buyyahon* facilitate the procedures and standards referred to as *pooviyon way gontangan* of the Obu-Manuvu tribe.

The next significant figure in the political structure of the Obu-Manuvu tribe is *mahabbok*, the administrator of the tribe. He enforces plans and programs necessary to the development and progress of the tribe. Presently, the *mahabbok* of the Obu-Manuvu tribe is Mahabbok Luis A. Lambac, Sr.

In running the administrative and technical affairs of the ancestral domain, the *ponodsang* or the Vice-chairman helps the *mahabbok*. In the absence of *mahabbok*, the *ponodsang* cannot sign documents or decide on his own without the consent of the *buyyahon*. Currently, Omelis Duyan is the *ponodsang* of the Obu-Manuvu tribe.

Another important leader in the Obu-Manuvu tribe is the *pononag*, the peace keeper of the people and the ancestral domain. He makes sure that the members of the tribe are free from harm and can exercise their roles and responsibilities over their ancestral domain and their environment in general. Pononag George “Binggala” Mandahay is the current peace keeper of the Obu-Manuvu tribe.

Just like any political structure, the Obu-Manuvu tribe has an *alimo*, the secretary of the tribe. As custodian of all documents, the secretary must undergo trainings and have the needed experiences to effectively carry out his or her duty. The secretary’s appointment is through the resolution by the Obu-Manuvu Council of Elders and Leaders. Allan Joy Sumandong is the current *alimo* or secretary of the Obu-Manuvu tribe in Davao City.

There are also positions that tribe members believe are God-given and do not require applying for the position in order to serve better the Obu-Manuvu tribe. These positions pertain to special abilities which will only surface depending on one's God-given destinies as described below:

1.) *Anitowon* is a relevant position in the tribal council as the Obu-Manuvus believe that the physical world is affected by the spiritual realm. Known as the healer of the tribe, the *anitowon* has the ability to predict future events and catastrophes.

2.) *Bahani* is considered as the warrior, defender, protector, and peace-keeper of the Obu-Manuvu tribe. Military training is not required to be a bahani. They will use *bangkaw*, *kalasag*, and *taming* as their armor.

3.) *Bai*, a woman, is considered to be a neutralizer during mediation and conferences of the tribe.

4.) *Ivavasok* is the agricultural expert of the tribe. He interprets the stars and other heavenly bodies and informs the tribe of the best time to plant and harvest. Aside from these, he also has the ability to stop the pests from attacking the plants.

5.) *Pohinonaw* is in charge of the preservation of the Obu-Manuvu culture. During childhood, some children will listen to their parents during night time. They will store those inputs in their memory and the moment they mature, they will share what they have learned to the other members of the tribe, especially the young generation, thus, making them *pohinonaw*.

6.) *Sudduwan*, consisting of the *konokanon* (young males) and *mongovayon* (young females), are the future descendants in leadership. They are expected to take over the tribal council when they age in accordance with their expertise and experience.

7.) *Suhuwanon* is the representative of the Obu-Manuvu tribe in inter-tribal affairs. However, he still needs to refer to the *buyyahun* in making decisions relating to the tribe.

8.) *To-usoy* takes control of dispensing the *gontangan* or justice. Justice is primarily dispensed through the employment by the parties of a fellow who will talk among themselves the best way to settle disputes so that the plaintiff will be recompensed and the defendant will be made to pay for the restoration of peace in the community.

Aside from their political and administrative structure, the Obu-Manuvus are also particular about their means of livelihood. Farming is the most common occupation among the Obu-Manuvu tribe as told by the elders during the focus group discussion. Crops like cassava, cacao, corn, and rice grains are their agricultural products. They also plant fruits like durian, lanzones, banana, and avocado. The Obu-Manuvu farmers deliver their agricultural products directly to Bankerohan Public Market in Davao City to gain high profit. Oftentimes, owing to higher expenses, some members of the tribe just sell their products in Calinan, Davao City.

Some of them are also employed as workers since there are companies in the area such as the Davao City Water District, Vitarich, and the newly operated Kennemer Foods International which recognizes the Indigenous People as their priority working force.

Indigenous Knowledge and Practices on Disaster Preparedness and their Experiences

The Obu-Manuvu tribe in Davao City use their indigenous knowledge to prepare for and cope with natural disasters. “Belief systems shape people’s understanding, perceptions, and responses to natural disasters. These perceptions are mediated by cultural interpretations, in combination with a range of other factors proper to each community and household at a specific time and place which will influence how people are going to prepare themselves or not” (Dekens, 2007).

The indigenous knowledge of the Obu-Manuvu has been maintained and passed down over generations. In an interview conducted last July 2016 with the five elders of the Obu-Manuvu tribe in Davao City, the elders shared the natural calamities that they experienced and their indigenous practices surrounding these phenomena. The five male key informants were selected on the basis of their position in the community (*lipatuan*, *mahabbok*, or *datu*) and by their being true-blooded Obu-Manuvu. The key informants, who are knowledgeable on their beliefs and practices, have some elementary and secondary education and their ages range from 49-75 years old. All the informants believe in *Magbabaya* as evident in the conduct of a ritual known as *panuvad-tuvad* during the site visit.

In the local history of Obu-Manuvu, the elders recalled that they experienced natural calamities and one of them was landslide. This was because some people were discourteous to the animals. They explained that animals must be respected and they should not be played with. Lipatuan Joel Unad shared that in 1983 in Tambobong from where he hails, some workers of a mining company, who were drunk that time, forced a dog to act as if it were dancing. This was a sign of disrespect to the creatures of God. So as punishment, a landslide hit the area and was experienced by the people. By midnight, a heavy rain fell. A hut where 15 people lived was swept away by the landslide, taking the residents inside it. The workers in the mining company and the Obu-Manuvu felt the heavy rain.

Respect for the animals was also emphasized by Datu Yulu Nugan when he recalled that in the 1990s, the members of the tribe caught an eel, locally known as *kasili*, from the river and had it for lunch and dinner. A landslide struck the place after the people feasted on the *kasili*. The elders are firm that this kind of fish should not be eaten because it is considered to be sacred. Datu Nugan narrated that their community experienced heavy rains as well because someone shot a monkey. Again, this was taken as a sign of disrespect to the animal. In 2011, the Obu-Manuvu experienced another landslide and one of the nephews of Lipatuan Joel Unad died.

His nephew lived near the river and there were no trees to protect the house from the landslide.

Landslides in the Marilog District usually last for only a week based on the experience of the Obu-Manuvu tribe. During landslides, the people stayed in an *iliyan* or cave that serves as their evacuation center. Before the disaster, they already stocked on food and other essentials in the *iliyan*.

Drought is also one of the calamities experienced by the Obu-Manuvu of Baguio District, Davao City. Mahabbok Lambac Sr. recalled that in 1983, the people of his tribe felt the long dry season. Their crops and animals were affected.

Aside from landslides and drought, the Obu-Manuvu in Baguio District, Davao City experienced epidemic diseases like dengue, diarrhea, and cholera. Mahabboc Lambac Sr. sadly shared that most of his family members, young and old, died in 1995 because of dengue.

The two datos contracted a disease, locally known as uyon, that struck the entire tribe as well. Even though one is considered healthy and nourished, he might be able to contract fever until he feels weak and eventually dies once this disease strikes. This disease is deemed a curse from God once the community violates the norm.

The informants believe that numerous reasons could have caused these natural disasters. One of these is religion as the informants view natural disasters to be part of the will and the punishment of *Magbabaya*. *Magbabaya*, the Supreme Being among Obu-Manuvu, has control over all of his creations, including nature. People are said to be punished by *Magbabaya* because of their sins and their disrespect to the animals. This is similar to the experience of the people in South Africa, in which the people believe that disasters are released by specific deities in response to human misbehavior (Mwaura, 2008). In the Philippines, this belief is shared by the Subanen in Zamboanga del Sur who believe that natural disasters happen as a form of punishment of *Magbabaya* because of the wrongdoings of the people (Mabini et al., 2014).

Practical explanations constitute the Obu-Manuvu's explanation of natural disasters. Indiscriminate cutting of trees is one of the reasons why there are landslides. Disasters are also seen as a natural phenomenon as there are rainy and dry seasons.

The Obu-Manuvu of Davao City believed that there are signs which served as omens of a coming natural disaster. These warnings are in the form of changes in the environment, omens, and unusual animal behavior. From the account of the elders, they learned these beliefs from their ancestors and directly from their observations.

There are signs in nature which the Obu-Manuvus interpret as warning of a coming disaster. Datu Benito Paundag said, “*Kana bang mag pula ang langit ug tanawn nimo ang palibot lahi kay murag ga ulan ginagmay taligsik, ug mag bangaw. Unya lahi ang palibot murag ga-yellow. Nagpasabot nga naay linog duha o tulo ka adlaw gikan karon* (The sky is red. It’s raining though it is sunny, then there is a rainbow. And you will see that the environment turns yellow because of the reflection. It means that there will be an earthquake two to three days from then”).

Lipatuan Joel Unad further added, “*Kung mag-yellow na ang mga dahon, sabot kana nga naay huwaw. Kung muhubas ang tubig sa sapa o sa balon, naay apan kana, naay huwaw muabot* (If the leaves turn yellow, it means there will be drought. If the water level in the river or well goes down, there is something wrong. It means there will be drought”).

The Obu-Manuvus will sense if a disaster is coming through the weather condition. When they do, they will perform the ritual *pama*. This is done by hanging a piece of fire wood. Facing the fire wood, they will mention a disaster, for example, typhoon, and if it moves, it means that a typhoon is coming. But the *pama* is performed only by the old folk who have access to the spirit.

This indigenous practice of the Obu-Manuvu is also manifested in the indigenous communities in some parts of the world.

In the Nenets Autonomous Okrug and Kamchatka regions of the Russian Federation, the natives use the appearance and color of the sky as early warning signs of natural disasters. In Aceh, Indonesia, it has been reported that a foul odor emanating from the sea signified the coming of a storm or typhoon (The Traditional Knowledge Advantage, 2016).

In the Philippines, some indigenous peoples, like the Obu-Manuvus, have the same practice of reading signs in nature. The Subanen of Zamboanga learned to read the signs in the river, the rain, the clouds, and the wind to predict natural disasters (Mabini et al., 2014).

Aside from signs in nature, the Obu-Manuvu elders also believed that dreams will give signs of a coming disaster. Before typhoon Pablo struck Davao Region, one datu dreamed that he was riding a *banca*. In his dream, he reached Talomo River and he interpreted that to mean that there will be a typhoon. True enough, Typhoon Pablo was experienced by the people even though it did not bring much damage to the community.

In the study of Mabini et al. (2014), the Subanen believed that their Balyan has the power to foresee upcoming natural disasters so he gives warnings before these disasters occur through dreams or omens.

Other forms of warning could be manifested in animal behavior. Lipatuan Unad shared, “*Kung madungug nimu ang tingug sa insekto nga ‘tong kong’ sa gabii, dunay mahitabu nga katalagman parehas*”

sa linug apan dili nimu masulti kung unsa dyud nga katalagman kung linug o landslide ba kaha (If you hear the sounds of an insect ‘tong kong’ at night, it means there is a disaster but we cannot predict specifically if it will be an earthquake or a landslide.”)

Some indigenous groups also see animal behavior as an important indicator of natural disasters. “In Raimea and Lau-Hata, Timor-Leste, leeches and caterpillars have been observed to appear before a storm occurs. Birds, usually migratory, are seen as important indicators of changing seasons and their duration, as well as of impending heavy rains, storms or droughts in Raimea and Maluru-Beaço in Timor-Leste, and in Sayung and Lipang in Indonesia” (The Traditional Knowledge Advantage, 2016).



(From left) Obu-Manuvu Leaders Lipatuan Joel Unad and Datu Paulino Landing of Marilog District, Davao City share their knowledge on disaster preparedness in the interview conducted by study leaders, Asst. Prof. Sajed S. Ingilan and Ms. Joy R. Risonar (partially hidden) on July 29, 2016. (Photo credit: W. Morado)

Effects of the Disasters Experienced

Landslides, drought, and epidemic diseases brought about destruction to the lives of the Obu-Manuvus, as well as to their crops and livestock.

Only few human lives were lost, as revealed by the elders. Mahabbok Luis Lambac Sr. explained that the Obu-Manuvus seldom experienced landslides because their area has many trees. Datu Benito Paundag added that since 2012, he and his people have seldom experienced landslides. The elders added that they are always alert especially now that it was reported in the Ancestral Domain Sustainable Development and Protection Plan of Obu-Manuvu that Barangay Marilog, Davao City is highly susceptible to landslides. Some remote barangays of Magsaysay, Dalag, Lumot, and Salaysay are also highly susceptible to landslides as well.

In the historical account of Obu-Manuvus, the long dry spell they experienced caused great famine that even the Tammuhan (Tamugan) River was not spared. Because of this phenomenon known as *kayamat*, they were forced to eat *burakan*, an indigenous variety of wild creeping vine similar to a *camote* with plate-sized leaves. Not minding its poisonous content, they will slice the meat of the *burakan* and allow it to be submerged in the water overnight. In the morning of the following day, they will cook the *burakan* in an effort to satisfy their hunger.

Datu Manuel Lawingan added, “*Ang mga hayup sama sa kabaw, manuk, ug babuy kay nangamatay sab kadtung grabe nga baha sa tuig 1996* (Animals like carabaos, chickens, and pigs were also victims of the landslide in 1996”).

The epidemic diseases were not just felt by the tribe but by animals such as goats, pigs, and chickens in their locality as well. These animals suddenly died and if cooked for food would not taste any good.

Social Networks

The tribal leaders namely Lipatuan Joel Unad and Mahabbok Luis Lambac Sr. take the lead when a disaster strikes in the Obu-Manuvu community. When there is a disaster, the information is disseminated by word of mouth and by using the *agong*. Ominous dreams or signs of a coming disaster are first shared with family members then to the members of the tribe after being summoned by the tribal leaders.

Support given by the government is appreciated by the tribe. They believe in the reports of PAGASA and other government agencies. Lipatuan Unad remarked, “*Walay dautan kung mutuu kita sa ilaha* (There is nothing wrong if we believe in them”).

The members of the tribe found the use of technology useful in disseminating information on disasters. However, there is a problem when it came to understanding technical terms as most of them are not well-versed in jargons. Additionally, when an impending typhoon is reported on the radio or television, the tribe validate it first with their elders according to their tribal beliefs.

Presently, the Obu-Manuvu are not using modern methods in predicting disasters but they are open-minded as to its use. They insist on the merging of indigenous and modern practices in predicting natural disasters.

They contend that indigenous practices must be observed so that the younger generation will know their culture. Datu Paundag expressed, “*Kasagaran sa mga kabatan-unan karon kay dili na gahatag ug bili sa amung lumadnung kaalam tungud sa impluwensya sa ilang pagtuun didtu sa siyudad* (Most of the young Obu-Manuvus now are no longer concerned with indigenous practices due to the influence of their school in the city.”)

The Obu-Manuvus are calling for the government and other social networks to conduct seminars and training on disaster preparedness so that they will also be aware also as to what to do in times of calamities.



(From right) Datus Manuel Lawingan and Yulu Nugan validate the data on indigenous knowledge on disaster preparedness of the Obu-Manuvu presented by Asst. Prof. Sajed S. Ingilan (standing) with the assistance of co-study leaders, (seated from left) Dr. Mary Grace Agbas and Asst. Prof. Lilibeth Cenojas on September 26, 2016 in Marilog District, Davao City. (Photo credit: Ingrid Gallogo)

Tagakaulo

of Malita, Davao Occidental

Mary Grace Z. Agbas

History and Background

The name Tagakaulo denote “inhabitants of headwater or sources of rivers and streams” (Baumwoll, 2008) as the name Tagakaulo is derived from “*taga*” meaning from and “*ulo*” meaning head. According to Tiu (2011), the original place of the Tagakaulo people is in Davao Oriental and they crossed Davao Gulf, reaching the area of Malalag, Davao del Sur and Malita, Davao Occidental. The Tagakaulo live in the interior areas of Malita in Davao Occidental, Malalag in Davao del Sur, and in different places in San Agustin, Davao Oriental. One informant from Barangay Talogoy, Malita, Davao Occidental narrated: *Ang puluy-anan sa tribong Tagakaulo kay naa sa kinabukiran karaan nga lugar, tuburan sa tubig ug lugar na gilibutan sa bukid* (“The Tagakaulo live in mountainous, remote areas, in the head of stream and valley.”).

At present, the Tagakaulos also dwell in the coastal areas of Barangay Lais in Malita Davao Occidental. They live in different locations: lowlands, coastal areas, riversides, valleys, mountains, highlands, and the plain.

A large number of the Tagakaulo people are found in Malita, Davao Occidental specifically in Barangay Demoloc and Barangay Datu Danwata. The Tagakaulo who reside in some *sitios* are still pure-blooded natives (Paluga, et. al., 2013). The Tagakaulo have their own dialect, and the native speakers are estimated at 80,000 by the Summer Institute of Linguistics in 2016.

According to the Joshua Project (2016), the “arrival of Islam in the 1500’ split, the Kalagan into two groups:” the Kalagans who converted to Islam and the Kalagans who remained animists. The animists were known as Tagakaulo. The religious beliefs of the Tagakaulo focus on the concept that many unseen spirits interfere in human activities. They believe that these spirits can enter the human body to accomplish their desires. The spirits are also believed to have common characteristics with humans. They are both good and evil in nature and can be evoked to both anger and pleasure (Masendo, 2015). Like other indigenous peoples in the Philippines who have their own term to call the supreme deity, the Tagakaulo named their God “*Tyumanem*”, which means “the Provider.” The Tagakaulo perform a ritual led by a “*matikadong*” (an elder) in the community (The Monograph Series: Tagacaolo Tribe, 2008). The political structure of the Tagakaulo relate to the larger Philippine society through the datu and his council; and, more recently, through the barangay.

The datu and his council serve not only as a link to the non-Tagakaulo and government organizations, but also perform traditional administration and settle conflicts and disputes. One of the key informants and chieftain from Barangay Datu Danwata, Malita, Davao Occidental stated:

“Sa United Tribes of Malita, gibutang ko diha para naay paghusay-husay. Kung unsay maayong buhaton sa tribong Tagakaulo mao ni siya ang akong gibuhad diha, wala na kaayoy mga kaso diri nga gikan sa barangay nga di nila makaya ipasa nila diha sa United Tribes of Malita. Kami ang maghusay, walay mugawas hantod wala pa nahusay”.

(“In the United Tribes of Malita (UTOM), I am designated to settle disputes. Whatever is good for the tribe, I have to do it... There are no more cases that the barangay cannot settle because we have already settled them before... and no one can go out if the problem is not yet solved.”)

In conflict resolution in the Tagakaulo community, the chieftain or the datu serves as a mediator to settle the dispute. The Tagakaulo people have a process of resolving a conflict which is called Kal’lep. The Kal’lep is a process which seeks the ultimate judgment on the offender to undergo the penalty either by paying (money or valuable properties such as carabao, horse, gun) or by death (The Monograph Series: Tagacaolo Tribe, 2008).

Indigenous Knowledge on Disaster Preparedness

Like many tribal communities in the country, the Tagakaulo people have developed indigenous knowledge in reducing disasters. These knowledge assets are orally handed down from generation to generation through social interactions in the community (Espesor, 2014). Over a period of time, the indigenous knowledge has been practiced in the communities of Tagakaulo. Indigenous knowledge has been effective in the protection of lives and properties of people and communities (Shaw, Sharma, & Takeuchi, 2009).

One of the key informants from Barangay Lagumit, Malita, Davao Occidental said:

“Ang sa ako kanang katalagman dili jud na siya minugna sa tao, kung dili sa mga kinaiyahan jud na nga panghitabo. Ang kana pong mga Tagakaulo naa na silay mga timailhan kung naay mga kalamidad nga muabot. Pananglitan mudag-um ang kalibutan, nagpasabot na nga naay dakong ulan, ug naa bay bagyong muabot.”

(“For me disasters are not man-made but natural. Tagakaulo people have their own signs in predicting an impending disaster. For example, if a cloud is very dark, it means that there will be heavy rains and that a typhoon is coming.”)

The indigenous knowledge of the Tagakaulo is still very evident and has been practiced up to this time.

The Tagakaulo people believe the *anitoan*, a member of the Tagakaulo community who possesses the spirit to warn the people of an impending disaster like earthquakes, typhoons, and floods. The Tagakaulo elders and key informants narrated:

“Para sa amoa ang katalagman, maghisgot napod ta didto sa kanang mga tuo-tuo. Kay ang katalagman sa unang panahon mga katigulangan namo, pag naay daot nga panahon, naay tigmando na magpahibalo sa ilaha, ang tawag ana diri sa amoa anito. Musulti na siya, mura pod na siyag tao pero ang tao sudlan siya sa anito nga musulti. Muingon na siya “Pangandam mo ugma kay naay linog, pag-andam mo ugma kay mag-ulan ug magbaha.” Sa mga Tagakaulo naay tuo-tuo.”

(“For us the disaster, let’s talk about belief, disaster in our olden times, if there’s bad weather, somebody who is an ‘anitoan’ that will inform the people. The ‘anitoan’ will say ‘prepare for tomorrow because there’s an earthquake’ or ‘prepare for tomorrow because there is a strong rain and flood. The Tagakaulo is an animist.”)

The *anitoan* person is believed to possess the spirit to guide and direct the Tagakaulo people if there are disasters. For the Tagakaulo, the anitoan can summon his or her anito through his dreams.

Another belief that the Tagakulo rely on is the chirping of the *limukon*. One of the elders and key informants of the Tagakaulo community recalled that hearing the cries of the *limukon* upon leaving their homes meant that they should not proceed, no matter how important their purpose for going out was. They believe that if the Tagakulo do leave, something unfortunate will happen to them. The cry of the white-eared brown fruit dove or *limukon* is considered as an omen or an indication of danger. During the interview, the key informant from Barangay Kinangan said:

“Sa kung parte kaning maglakaw gani gikan sa iyang balay mam-inaw jud na siya, usa siya manaog sa hagdanan. Unya pagtingog sa limukon ana, nagpasabot nga ayaw pagpadayun og lakaw kay dunay mahitabo sa imo nga dautan. Bisag unsa pa ka importante sa lakaw sa tao, pagmuringog na ang limukon di na siya mupadayun og lakaw.”

(“On my part, before someone leaves his or her home, he or she should listen to the chirping of the ‘limukon.’ This chirping of the bird entails an impending disaster ahead. No matter how important their purpose is for leaving, if they hear the cry of the limukon, they should not go.”)

Moreover, monkeys, as one of the elders narrated, are also considered as one of the predictors of a strong typhoon.

Datu Julio Bagi remarked:

“Usa sa mga timailhan nga adunay kalamidad nga muabot. Kung bagyo makita ninyo ang unggoy, mangalisang na sila sa kalasangan kay mahadlok na sila mapuspusan sa sanga sa kahoy, mangadto na sila sa layo nga lugar. Makita nimo sa tulo(3) ka adlaw, wala nakay makitang unggoy sa maong kalasangan.”

(“One of the signs that there’s an impending calamity is when the monkeys become very noisy and troubled in the forest. We believe this happens because monkeys are really afraid that they might be hit by the broken branches of the trees. Three days before a typhoon, the monkeys are already gone from the forest.”)

Similarly, the elders observe that when ants get preoccupied with gathering their food, a typhoon is forthcoming. On the other hand, cats drink plenty of water before the onset of a drought. Likewise, the worsening of an elder’s health condition indicates a sign of a future disaster.

This indigenous knowledge of the Tagakaulo is also evident in the tribal groups in some parts of the world. In Rajasthan, India, the tribal elders have used their indigenous knowledge in predicting the weather. Some of the manifestations are the appearance of butterflies, ants, and termites and when frogs start to make a lot of noise. These indicate the onset of a heavy rainfall (Pareek, and Trivedi, 2011).

Disasters Experienced and their Effects to the community

The Tagakaulo people faced many natural calamities but the most destructive ones are floods, landslides, droughts, and infestations. In 1970, according to one of the Tagakaulo elders and key informants in the community, Typhoon Titang brought strong winds and heavy rains in the area which led to insufficient food supply for the members of the community and decreased harvest from their farms because of the vast devastation. As the Tagakaulo people recounted, dark clouds surrounded the place. The heavy rains came and floods followed. The Tagakaulo moved to higher places away from the river for the safety of their families. Likewise, as one of the elders narrated, they encountered strong winds and had to run away from big, tall trees so that they would not be harmed by the broken branches of the trees.

“Kasagaran nga mahitabo, kay kung mag-ulan, mag-baha mahitling na sila didto sa layo-layo sa sapa para ma-safety ang ilang mga pamilya. Kung maghangin pod muadto na sila sa lugar nga wala kaayoy kahoy para madepensahan pod nila nga dili sila matumbahan og mga kahoy. Kasagaran jud ing-ana ang mga pangandam sa mga tribong Tagakaulo.”

(“Usually, if it rains and floods come, they will move out away from the river to transfer to higher places for the safety of their family. If there are strong winds, they will transfer to places far from trees so that they will not be hit by the fallen branches of trees. This is usually the preparations done by the Tagakaulo people.”)

Elsewhere in the world, this disaster was also experienced by the indigenous people of Tikopia Island in the Solomon Islands when Cyclone Zoe struck the country in December 2002. The indigenous residents survived using their indigenous knowledge by taking shelter under overhanging rocks on higher grounds (Mercer, et.al. 2010).

Floods and landslides have been the most frequent occurring disasters due to the geographical characteristics of Malita, Davao Occidental. The effects of loose soil and the result of illegal logging from past activities are manifested in frequent landslides and floods that caused destruction of crops, livestock, and houses.

Drought, however was infrequent, typically happening as a result of El Nino. When they did occur, they caused extensive damage to the Tagakaulo people and its agriculture. Lack of water resources had a trickledown effect to the farmers as well, leading to food scarcity. In 1972, according to the key informant and the elders of the community, the season was dry for one whole year. *“Ang hulaw jud gikan sa sinugdanan hangtod mawala, ang mga pananom ato nangadaut ug nangamatay sa kainit unsa pa may pangaunon ato”*. (“From the start up to the end of drought, the livelihood and agricultural products were damaged. Our crops died and we suffered from food scarcity”).

During drought, crops like corn, coconuts, and other agricultural products and livestock died which resulted to food insecurity among the members of the Tagakaulo community. The effect of drought was not only felt by the Tagakaulo people but also by their farm animals like cows, goats, and carabaos as grasses for forage also withered during this calamity.

Furthermore, the Tagakaulo people are not spared from rat and locust infestations. Rats ate farm crops like corn, rice, coconuts and other agricultural products. In 1988, according to the elders of the community, they had to deal with the swarm of *dulun* or locusts that were destructive to farm crops including grasses and bamboo. These infestations resulted to inadequate food supply for both the people and farm animals.

This event is similar to one experienced by the indigenous groups of Rajasthan, India who encountered different natural hazards, the greatest of which are drought and floods. These calamities caused famine, food insecurity, and poverty (Pareek, et.al, 2011).

Disasters Experienced and their Effects to the community

The United Tribes of Malita (UTOM) was created with the objective of providing assistance to the different tribes of Malita during disasters in the locality. The organization is composed of the Sangil, Maranao, Kagan, Tausug, Blaan, Manobo, and the dominant tribe in Malita, the Tagakaulo. The indigenous people and the local government unit also organized the *Gaginaway* which is a gathering of IPs in Malita. This serves as the connection between the indigenous peoples, most especially a number of the Tagakaulo people, to the local government unit.

Moreover, the government plays an important role in the midst of disasters and calamities encountered by the Tagakaulo people in Malita. According to the elders, an example of government intervention is reforestation wherein the local government unit provides seeds for tree planting.

The key informant added:

“Ang gobyerno, para lang sa akong nakita, dako man silag nahimo. Pananglitan diri karon kaning reforestation. Gahatag silag kahoy nga pananom, gawas sa mu-protect na siya sa kinaiyahan, naa pa jud silay panginabuhian sama sa rubber. Mao pod na nga usa sa dugang panginabuhian sa mga taga tribo”.

(“The government, as I observed, has helped the people. One example of this aid is reforestation. They (LGU) give seedlings for planting. This will not just protect the environment but will also give the Tagakaulo people livelihood.”)

The LGUs provide job opportunities for the indigenous people through farming, copra production, and rubber plantation. The government also offers free education for deserving indigenous youth.

Erosion of Indigenous Knowledge

Ansell (2002), as cited by Briggs (2005), stressed that “There is not, nor has ever been, such a thing as a closed society.” This line reveals that the fast erosion of the indigenous knowledge is really inevitable because of the interface between modern sources of knowledge and indigenous knowledge. This plays a significant role in the community to stage an intervention and provide provisional knowledge to improve the disaster preparedness of the indigenous people in the community.

Nowadays, according to an elder and key informant in the community, there are some members of the Tagakaulo community who do not believe in the signs used by the elders in predicting disasters.

This is because the elders admitted that they failed to educate the young generation.

The key informant remarked

:“Ang rason nganong di na kaayo sila makasabot sa tugtog kay wala sila natudluan o na-edukar. Nagatuo jud ko nga ato jud ning itudlo sa atong mga kabatan-onan. Atong iapil sa IP Education.”

(“The reason why the young generation cannot understand the sound or signs is that they are not taught or educated about it. I believe that this indigenous knowledge should be taught to the youth. We have to include indigenous knowledge in the IP Education.”)

For this, they believe that they need to teach their youth and include indigenous knowledge in their education curriculum. According to one of the elders who is also a datu in the tribe, they learned this indigenous knowledge as a form of oral tradition through social activity in the community. And despite changes in the locality and intermarriages, this knowledge can still be passed on.



Acadon Sultan (seated first from right), Doming Vivas (seated second from right), Bai Lolita Labis (seated from first from left), and Bai Carmelita A. Oralde (seated second from left) validate the data on indigenous knowledge on disaster preparedness of the Tagakaulo in Malita, Davao Occidental presented by Dr. Mary Grace Z. Agbas (seated at the center) on September 25, 2016. Photo credit: Miss Ingrid Gallogo



Tagakaulo elders and key informants Datu Julio Bagi (seated second from left), Doming Vivas (seated from fourth right), Bai Lolita D. Labis (seated third from left), and Carmelita A. Oralde (seated second from left) of Malita, Davao Occidental impart their indigenous knowledge on disaster preparedness during the data gathering facilitated by Dr. Mary Grace Z. Agbas (seated from left) and Ms. Joy Risonar (seated third from left) assisted by Mr. Wilfred Morado (seated first from right) on June 18, 2016. Photo Credit: Claveria Agbas.

Chapter 8

Conclusions and Recommendations

The IP Leaders recall of information on disaster management are deeply connected to its environment: animal behavior, movement of heavenly bodies, blossoming of plants, and other parts of the ecosystem. When important elements within their environment are lacking or in excess, they experience the direct effects through calamities and bizarre behavior of living things. This interconnection only emphasized that the IPs have become an integral part of their environment, and their assertion of their ancestral domain is not only political or social in nature, but survival at the very onset.

Moreover, accounts on the observation of some unusual animal behaviors of chickens, frogs, earthworms and centipedes and the sounds made by the *alimukon* or turtledoves (common to many groups) as early warning signs for incoming natural hazards are recommended for further correlation in the field of environmental science. The IP groups believe that acts such as disrespecting animals and cutting of trees are punishable through disaster. Under environmental science, this may mean an imbalance (either *lack or in excess*) of elements in the ecosystem which can trigger natural phenomenon such as flooding and landslides. This needs to be substantiated with thorough research

on the flora and fauna, water system, and vegetation profile of a certain environment.

On the other hand, the IPs social structure reveals that there are persons (i.e. *anitoan*, *baylan*) gifted with skills and can predict the occurrence of a certain calamity. The knowledge that this person has should be documented and subjected to further research and proof gathering. It is also interesting to research how these types of people influence the younger generation's levels of decision making, especially in terms of disaster management and response. It is interesting to know if these persons are respected enough by the younger generations of IPs to warrant specific course of actions. It might explain why there is a continued erosion of indigenous knowledge and why it is not handed down to younger generations. However, IP groups who are organized into associations and organizations have concrete courses of action in responding to and managing calamities.

Results also show information on how to predict an incoming calamity but only a few showed tangible actions on how to respond to it. As recommendation, appropriate response actions should be discussed within the group to prevent further loss of lives and properties. Appropriate prevention and mitigation actions should also be discussed as reference for tribal elders and leaders in managing disaster.

The more concrete question to be asked is this: if it is related to the future and the past; what will they do and what would their ancestors have done to mitigate the impact of an impending disaster?

Furthermore, planting drought resistant crops such as *wakag-gabi nga pugtong*, *sago*, *landang* and *lumbia* by Dibabawons to help prevent landslides should be given attention and recommendations for further research. This basic practice on preventing and mitigating the effects of drought and landslides is neglected and considered with little value. Majority of the people especially lowlanders are heavily dependent on rice and corn as basic food. But if these drought resistant crops are incorporated into peoples' daily diet, famine and excessive demand on rice as a major food will be lessened. More so, it has been consistently emphasized by crop scientists, that crop diversification (e.g. camote) is among the effective ways to cope with climate change. Finally, types of visualization and IEC materials on early warning signs can be posted in the area to mainstream the knowledge and disseminate information to a wider audience.



References

- Adger, Neil W., Armell, Nigel W., Tomkins, Emma L. (2005). Successful adaptation to climate change across scales. *Global Environmental Change*. Vol. 15. Issue 2. July 2005. pp 77-86. Retrieved on October 20, 2012 at <http://www.sciencedirect.com/science/article/pii/S0959378004000901> http://philippinesociology.com/wpcontent/uploads/2014/08/ESPE-SOR_PSSS.pdf
- Arcenas, M. (1993). *The Vanishing Nomads: The Balaan's past, present and future*. Printed in the Republic of the Philippines.
- Baumwoll, J. (2008). The value of indigenous knowledge for disaster risk reduction: a unique assessment too for reducing community vulnerability to natural disasters. Retrieved from: https://books.google.com.ph/books?hl=tl&lr=&id=1jjalLbkJrkC&oi=fnd&pg=PA1&dq=indigenous+knowledge+on+disaster+preparedness&ots=e8TBNkE73l&sig=Q9V8_IMez-b3ylVZFTHu0zHtZKZ4&redir_esc=y#v=onepage&q&f.
- Berrel, J and E. Philips. (2013). Role of traditional knowledge (TK) to address climate change impacts. Tech Rep, climate change & development community of the Pacific Solution Exchange
- Bigornia, Manny (2011). *The Mandaya People-Ethnic Group of the Philippines*, University of the Philippines-Diliman. Retrieved December 16, 2016 at <http://www.ethnicgroupsphilippines.com/2012/04/22/the-mandaya-people/>
- Briggs, J. (2005). The use of indigenous knowledge in development: problems and challenges. *Sage Journals*. Retrieved from <http://journals.sagepub.com/doi/abs/10.1191/1464993405ps105oa>.
- Camposano, S.M. (2006). *The Tagakaulo oral narratives and their educational implications* [Unpublished graduate thesis]. Ateneo de Davao University.
- Davao del Norte submerged in floodwater. (2013, February 22). Retrieved October 30, 2016, from <http://www.rappler.com/nation/22350-davao-del-norte-submerged-in-floodwater>
- Daw, T., Adger, W.N., Brown, K., Badjeck, M.C. (2009). Climate Change and Capture Fisheries: Potential Impacts, Adaptation and Mitigation. In K. Cochrane, C. De Young, D. Soto and T. Bahri (eds). *Climate Change Implications for fisheries and Aquaculture: Overview of Current Scientific Knowledge*. FAO Fisheries and Aquaculture Technical Paper No. 530. Rome, FAO. Pp. 107-150

Dekens, J. (2008). Local knowledge on flood preparedness: Examples from Nepal and Pakistan, good practices and lessons learned from experiences in the Asia Pacific Region, International Strategy for Disaster Reduction, Kyoto University and the European Union, Bangkok, Thailand.

Earthquake Information Number 4. (2015, August 1). Retrieved September 2, 2016, from http://www.phivolcs.dost.gov.ph/html/update_SOEPD/2015_Earthquake_Bulletins/August/2015_0801_1517_B4F.html

Edge Davao. Rains due to tail-end of a cold front flood Davao provinces. January 25, 2014

Ellen and Harris (1996) as cited by Senanayake, January, 2006 The Journal of Agriculture Science, 2006, vol. 2 no.1 Indigenous knowledge as a key to sustainable development, by S.G.J.N. Senanayake Retrieved at December 5, 2016
http://www.sab.ac.lk/journal_agri/papers/agri_vol2_1_2006/agri_vol2_1_2006_article10.pdf

EPA (2017).Climate Impacts on Agriculture and Food Supply.
<https://www.epa.gov/climateimpacts/climate-impacts-agriculture-and-food-supply#fisheries>

Espesor, J.E. (2014). Indigenous Knowledge on Disaster Management and Environmental Conservation of the Blaan Tribe in the Riparian Zone of the Calminda Watershed. Retrieved from:
http://philippinesociology.com/wp-content/uploads/2014/08/ESPESOR_PSS.pdf.

Garvan, John M. (1931). The Manobos of Mindanao from Memoirs of the National Academy of Sciences. Vol 23. Government Printing Office: Washington

Gyampon, B.S. Amisan, M. Tamooa Ana J. Nkem- Using Traditional Knowledge to Cope with Climate Change in Rural Ghana.; FAO Corporate Document Depository; Retrieved on November 17, 2015 <http://www.sab.ac.lk/journal/agri/papers/agri.vol.2>

Hannah Reid, Taylor and Francis (2015). Ecosystem- and community-based adaptation: learning from community-based natural resource management Retrieved January 2, 2017.

Institute for Indigenous Peoples' Education (2008).The Monograph Series: The Manggangan Tribe

References

IPCC, (2007). Climate Change 2007. Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp IPCC (Intergovernmental Panel on Climate Change). A synthesis report posted online
http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html

Johnson, Terry. (2012). Fisheries adaptations to climate change- Alaska Sea Grant Marine Advisory Program; Retrieved on January 1, 2017 at terry.johnson@alaska.edu.

Joshua Project (2017)-Asia Missions (AMNET). Mandaya in the Philippines. Retrieved on January 9, 2017 at https://joshuaproject.net/people_groups/14722/RP.

Kalagan, Tagakaulu in Philippines __ Joshua Project. Retrieved from: https://joshuaproject.net/people_groups/15173/RP.

Masendo, A. L. (2015). The Manobo tribe then and now: an ethnography. International Journal of Scientific & Engineering Research, Volume 6, Issue 4, April 2015 Retrieved from https://scholar.google.com.ph/scholar?q=the+mano-bo+tribe+then+and+now%3A+an+ethnography&btnG=&hl=en&as_sdt=0%2C5

Mclean, K., G (2010). United Nation University; Advance guard: climate change impacts, adaptation, mitigation and indigenous peoples – a compendium of case studies; retrieved January 1, 2017 at <http://www.eldis.org/go/topics/resource-guides/climate-change/key-issues/indigenous-knowledge-and-climate-change&id=59497&type=Document#WHw7kVN96M8>

Mercer, J., et al. (2010). Framework for integrating indigenous and scientific knowledge for disaster risk reduction. Disasters, 34(1), 214-239.

Mercer, J., et al. (2010). Framework for integrating indigenous and scientific knowledge for disaster risk reduction. Overseas Development Institute. USA. Journal. Blackwell Publishing. Retrieved from:
<http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7717.2009.01126.x/epdf>

Minda News: Over 1,000 flee floods in ComVal, January 2017

Mohammed et al. (2013). Impact of Climate Change on Fisheries: Implication for Food Security in Sub-Saharan Africa-Research in Environmental Economics, International Institute of Environment and Development, London; Retrieved on December 10, 2017 at <http://pubs.iied.org/pdfs/G03625.pdf>

Municipality of Sto. Tomas, Davao del Norte. (2014). Retrieved October 30, 2016, from <http://www.stotomas.gov.ph/index.php?link=Profile>

Mwaura, P. (2008). Indigenous knowledge in disaster management in Africa. United Nations Environment Programme: application and use of indigenous knowledge in natural disaster management. Nairobi, Kenya.

NDRRMC Update (14 June 2013). Effects of Southwest Monsoon. Retrieved October 30, 2016 http://www.ndrrmc.gov.ph/attachments/article/2440/NDRRMC_Update_Effects_of_Southwest_Monsoon_14JUN2013.PDF

Ohira, Yvonne Kami- Fishing Kapu & Rituals-their Relationship to Conservation Past and Present; Institute for Hawaiian Culture Studies; Retrieved on January 10, 2017 kumuchunswebsite.weebly.com/uploads/1/3/2/2/13222998/fishing_rituals.pdf

Ompang, Manuel B. (2015). The Mandaya Ethnic Group. Online Publication posted in November 28, 2016 at <http://ncca.gov.ph/subcommissions/subcommissions-on-cultural-communities-and-traditional-arts-sccta/central-cultural-communities/the-mandaya-ethnic-group/>

Paluga, M.J.D., et al. (2013). Phase II Documentation of Philippine Traditional Knowledge and Practices on Health and Development of Traditional Knowledge Digital Library on Health for Selected Ethnolinguistic Groups: The TAGAKAOLo and Sitio Kyasan in Barangay Kilalag; SitioMalandog and SitioKangko in Barangay Dimuluk, Malita, Davao del Sur Retrieved from file:///C:/Users/Faculty/Downloads/10.5.7.2%20Final%20report%20of%20Tagakaulo%20Davao%20del%20Sur%20(1).pdf

Pareek, A. and PC Trivedi. (2011). Cultural values and indigenous knowledge of climate change and disaster prediction in Rajasthan, India. Indian Journal of Traditional Knowledge Vol. 10 (1) January pp. 183-189. Retrieved from <http://nopr.niscair.res.in/bitstream/123456789/11079/1/IJTK%2010%281%29%20183-189.pdf>.

Peralta, J. (2000). Glimpses: Peoples of the Philippines.

Rajabali, Fatima. (2017). Indigenous Knowledge and Climate Change; Retrieved on January 1, 2017 at <http://www.eldis.org/go/topics/resource-guides/climate-change/key-issues/indigenous-knowledge-and-climate-change#WH3ObVN96M8>

Salick, J. and Byg, A., (2007). Indigenous Peoples and Climate Change, report of a symposium held on 12-13 April 2007, Oxford, Tyndall Centre for Climate Change Research. Retrieved January 2, 2017 http://tydall.ac.uk/sites/default/files/Indigenous%20Peoples%20and%20Climate%20Change_0.pdf.

References

Scott, J. C., Llamas, D. C., &Brittner, P. (2013). Study on Engaging Indigenous People More Inclusively in the Disaster Risk Reduction Process (Rep.). New York: United Nations.

Serrano, B. (2007, September 28). Tornado hits 6 villages in Davao Norte. Retrieved October 7, 2016, from <http://www.philstar.com/nation/16927/tornado-hits-6-villages-davao-norte>

Shaw, R., et al (2009). Indigenous knowledge for disaster risk reduction: Policy note. United Nations International Strategy for Disaster Reduction (UNISDR): Kyoto, Japan.

Shaw, R., Sharma, A., & Takeuchi, Y. (2009). Indigenous knowledge and disaster risk reduction: From practice to policy. Nova Science Publishers, Inc.<https://kumamoto.pure.elsevier.com/en/publications/indigenous-knowledge-and-disaster-risk-reduction-from-practice-to>

Shaftel, Holland, Site Editor. (2013). Responding to climate change. NASA Global climate change. Vital Signs of the Planet. Retrieved on November 12, 2016 at <http://climate.nasa.gov/solutions/adaptation-mitigation/>

Shanmugarajah Srikanthan (2013). IOSR Journal of Humanities And Social Science (IOSR-JHSS) Volume 12, Issue 6 (Jul. – Aug. 2013), pp 49-54 e-ISSN: 2279-0837, p-ISSN: 2279-0845. www.iosrjournals.org Ph.D. Scholar, Puducherry Institute of Linguistics and Culture, Puducherry, India

Sibayan, A. (2006). Indigenous Fishing Gears and Fish Processing in Mati, Davao Oriental. DOSCST. Undergraduate Thesis. Pp 8-9.

Sillada, Danny Castellones. (2013). The Quintessence of Being A Mandaya; Retrieved on January 1, 2017 at <http://news.davaooriental.com.ph/index.php/feature-the-quintessence-of-being-a-mandaya-by-danny-castillones-sillada/>;Province of Davao Oriental Official Website.

Steiner, A. (2008). Indigenous knowledge in disaster management in Africa. UNEP: UNEP.

Tagakaulo Phrasebook. (2016). Summer Institute of Linguistics. Second Edition

The Ancestral Domain Sustainable Development and Protection Plan of the ATA ICCs/IPs. NCIP Region XI.

The Ancestral Domain Sustainable Development Protectio Plan of the Dibabawon and Manguangan.

The Monograph Series: The Tagacaolo Tribe (2008). Institute of the Indigenous Peoples Education. Philippines-Autralian Basic Education Assistance for Mindanao

The Monograph Series: The Blaan Tribe (2008). Institute of the Indigenous Peoples Education. Philippines-Australia Basic Education Assistance for Mindanao.

Tiu, M.D. (2005). Davao: Reconstructing history from text and memory. Ateneo de Davao University. Retrieved from <https://scholar.google.com.ph/scholar?q=Tiu%2C+M.D.%282005%29.+Davao%3A>

Appendices



Republic of the Philippines
OFFICE OF THE PRESIDENT
NATIONAL COMMISSION ON INDIGENOUS PEOPLES
Regional Office XI
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Tel. Nos. 298-0495 • 298-2957 Tel. Fax 298-2942
Website: www.ncip.gov.ph

Control No. RXI-2017-03-04

CERTIFICATION PRECONDITION

(Certificate of Compliance to the FPIC Process and
Certification that the Community has given its Consent)

TO WHOM IT MAY CONCERN:

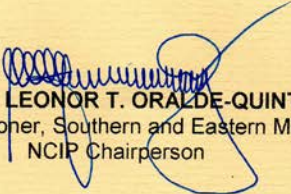
THIS IS TO CERTIFY that the **UNIVERSITY OF SOUTHEASTERN PHILIPPINES (USEP), Davao City**, has satisfactorily complied with the process for the issuance of the Certification Precondition prescribed under NCIP Administrative Order No.3 series of 2012, for its **PUBLICATION OF THE RESEARCH AND STUDY ON INDIGENOUS KNOWLEDGE IN FISHING AND FARMING: ITS ADAPTATION AND MITIGATION TO CLIMATE CHANGE** conducted in Barangays Poblacion, Sta. Felomina, Baybay, San Antonio, Malibago, and Aliwagwag of the Municipality of Cateel, Province of Davao Oriental.

Pursuant to Section 39 and 43 of NCIP AO No.3 s. 2012, this Certificate is issued with concurrence of the Ethnographic Commissioner and NCIP Chairperson in favor of **UNIVERSITY OF SOUTHEASTERN PHILIPPINES (USEP), Davao City**.

Done this 06th day of March 2017, at Davao City, Philippines.


ATTY. GERONCIO R. AGUIRO, CESO III
Regional Director

Concurred:


ATTY. LEONOR T. ORALDE-QUINTAYO
Commissioner, Southern and Eastern Mindanao
NCIP Chairperson

cc: Office of the Chairman
Ethnographic Region Concerned
Record Section
Applicant/Proponent



OFFICE OF THE TRIBAL COUNCIL
Poblacion, Malita, Davao Occidental

CERTIFICATE OF VALIDATION

To Whom It May Concern:

This is to certify that **UNIVERSITY OF SOUTHEASTERN PHILIPPINES (USEP)** presented its research output for Publication on the IKSPs on Climate Change and Disaster Preparedness and Management to the tribal leaders of Poblacion Malita, Davao Occidental, Philippines.

Furthermore, this certifies that we are fully satisfied with the content and manner of presentation of information.

Lastly, we hereby authorized the publication of the said research.

Done this 28th day of September, 2016 in Poblacion, Malita, Davao Occidental.



BAE LOLITA D. LABIS




BAE CARMELITA A. ORALDE



DOMING VIVAS



DATU JULIO BAGI



DATU ACADON SULTAN

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OFFICE OF THE TRIBAL COUNCIL
Poblacion, Malita, Davao Occidental

CERTIFICATE OF VALIDATION

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Furthermore, this certifies that we are fully satisfied with the content and manner of presentation of information.

Lastly, we hereby authorized the publication of the said research.

Done this 28th day of September, 2016 in Poblacion, Malita, Davao Occidental.

VISITACION RICANOR

IRENE BETHANY RICANOR - ITLIONG

OFFICE OF THE TRIBAL COUNCIL
Sitio Ladi-an, Marilog Dist., Davao City

CERTIFICATE OF VALIDATION

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Furthermore, this certifies that we are fully satisfied with the content and manner of presentation of information.

Lastly, we hereby authorized the publication of the said research.

Done this 26th day of September, 2016 in Sitio Ladi-an, Marilog Dist., Davao City.

DATU PAULINO LANDING

DATU JOEL UNAD

DATU LUIS LAMBAC, SR.

DATU BENITO PAUNDAG

DATU MANUEL LAWINGAN

DATU EULO NOGAN

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OFFICE OF THE MUNICIPAL TRIBAL COUNCIL

MUNICIPALITY OF STO. TOMAS
PROVINCE OF DAVAO DEL NORTE
Fd.Rd. #4, Tibl-og, Sto. Tomas,
Contact No. 09351634355

CERTIFICATE OF VALIDATION

To whom it may concern:

This is to certify that **UNIVERSITY OF SOUTHEASTERN PHILIPPINES (USEP)** presented its research output for Research on IKSPs on Climate Change and Disaster Preparedness and Management to the tribal leaders of Sto. Tomas, Davao del Norte on September 24, 2016 at Tribal Hall, Feeder Road 4, Tibal-og, Sto. Tomas, Davao del Norte, Philippines. Furthermore, this certifies that we are fully satisfied with the content and manner of presentation of information. Lastly, we hereby authorized the publication of said research.

Done this 24th day of September, 2016 at Sto. Tomas, Davao del Norte, Philippines.

DATU DOMING T. TUMAYTAY

DATU FERNANDO DUMAIT

DATU EDGAR SABEJON

DATU JONATHAN CAYUNDA

DATU JEEPEE OMPOCANON

MONTEVISTA INTEGRATED TRIBAL ASSOCIATION (MITA)
Montevista, Compostela Valley Province

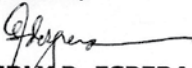
CERTIFICATE OF VALIDATION

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This is to certify that **UNIVERSITY OF SOUTHEASTERN PHILIPPINES (USEP)** presented its research output for Research on IKSP on Climate Change and Disaster Preparedness and Management to the tribal leaders of Montevista, Comval Province belonging to the Dibabawon ICC on November 7, 2016 at NCIP Provincial Office, Nabunturan, Comval. Furthermore, this certifies that we are fully satisfied with the content and manner of presentation of information. Lastly, we hereby authorized the publication of said research.

Done this 7th day of November, 2016 at Nabunturan, Comval.

Prepared by:


SHIRLY D. ESPERA
MITA Secretary

Issued by:


DATU HERMINIO T. OPAO
MITA-Chairperson



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