

# **Traditional Ecological Knowledge in Vernacular Housing of the Indigenous People of Cagayan: Basis for An Indigenous Science Reference**

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## **Abstract**

This study documented the Ibanag, Itawes, and Malaweg's traditional ecological knowledge throughout the pre- and post-construction of their vernacular houses in Cagayan, Philippines. The study used semi-structured interviews, focus groups, and archives. The researchers found parallels in the Itawes, Ibanag, and Malaweg's actions and beliefs during house construction attributed to cross-cultural exchange. The researchers conclude that the three groups' housing beliefs and practices are influenced by superstitions (animals, plants, etc. that represent fortune or misfortune), religion (leaning toward or against days based on the Holy Rosary mysteries), and astrology (referring to the moon or a planetarium in determining the schedule for the commencement of the construction). Additionally, sexism was found to be a component in various housing beliefs and practices, such as women being banned from groundbreaking and excavators turning their heads when a woman passes. All of these beliefs and customs continue to be practiced because Cagayano families have an ingrained desire to live prosperously in their homes. The study recommends that these beliefs and practices be used as a springboard for lessons in basic and higher education specially in teaching indigenous science. As such, awareness and safeguarding of these beliefs will be reinforced.

**Keywords:** housing beliefs, indigenous people, indigenous science, traditional ecological knowledge

As it crosses and connects with numerous sectors and social groupings, culture is a particularly dynamic and multi-dimensional component of development. The Philippine Development Plan (2017-2022) says that it is an interface of the past and present that influences how people move forward into the future, in addition to these intersections. The same document describes it as the identity of a society's way of life, which is shaped by its history, tales, experiences, knowledge, beliefs, and customs. This description is exactly the working

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definition of indigenous science which can also be termed as “traditional ecological knowledge” (Albuquerque et.al, 2021; Ludwig & Macnaghten, 2020; Cajete, 2012). Conversely, Indigenous science is the body of traditional environmental and cultural knowledge that is specific to a certain people and has supported that people for generations while they have lived in a particular bioregion (Singleton et.al, 2021; Zidny, 2020; Saunders, 2018).

Among the rich source of a unique culture in the Philippines are, of course, its indigenous people which is about 14-15% of the country’s total population (Doyle, 2020; De Vera, 2007). There are 110 indigenous groups in the Philippines. Each of these groups have their own identity and traditions (De Vera, 2007). However, due to the rise of inter-tribal marriages, it has become difficult to distinguish tribes and people's groups. According to several authors, indigenous societies in various sections of the country are constantly being battered by modernity and development, which is putting their natural habitats in jeopardy and swiftly degrading their traditions (Magdadaro & Sacramento, 2022; Ciofalo et.al, 2022; Castillo & Nozaleda, 2022). Modernization and development have continuously attacked certain customs, putting traditional beliefs and practices under the threat of totally becoming a thing of the past.

Cultural beliefs and practices are thus in danger of extinction if nothing is done to prevent them from dying out gradually. It is important to comprehend and preserve these diminishing true ethnic culture and faith as it can be only a matter of time before indigenous practices go away or are fully modified.

There is a wide array of aspects of life mirroring people’s culture that should be examined but considering that the house is the most important place for everyone which is why Filipinos observe a lot of superstitious beliefs in their homes (Luna et.al, 2019), the researchers deemed it important to investigate housing beliefs and practices a unit of traditional ecological knowledge of the indigenous people. In the Philippines, starting a family necessitates the construction of a home. This is done to help newlywed couples build independence and responsibility and improve their self-esteem, social duty, and freedom.

Noche (2015) states that the Philippines' architectural heritage, the residences of its diverse peoples, churches and mosques, and the buildings that have grown in response to the demands of progress and the aspirations of the people, all represent the country's history and culture. Noche (2015) also claims that today's architecture in the Philippines is the outcome of natural development augmented by the incorporation of various influences which arose from the pre-colonial influences of our Malay neighbors, and lasted through the Spanish colonial period, the American Commonwealth period, and present times.

The researchers believes that to have a better appreciation of the vernacular housing culture, we must first have a deeper understanding of the aspirations and demands behind our ancestors’ practices and beliefs in building their houses back then. This is why the documentation of Filipino practices and beliefs specific to house construction is critical.

Thus, this research intends to address the scarcity of studies and publications, particularly on the importance of indigenous knowledge and practices in Cagayan. The researchers believe that a documentation of the Ibanag, Itawes, and Malaueg housing beliefs and traditions is required to raise community awareness of indigenous knowledge, not only as a means of information transmission, but also as a tool for minimizing the risk of natural disasters. As Zarate (2010) claims, an experienced Filipino architect is conversant with

prevalent folk beliefs and frequently follows or utilizes them in the design of one's ideal home.

The researchers hope that by providing concrete educational materials to improve understanding of indigenous knowledge, this publication will inspire all practitioners and policymakers to consider the knowledge held by local communities and act to incorporate this wealth of knowledge into education. Specifically, the role of research is crucial in generating scientific and evidenced information for the curriculum (Nozaleda & Calubaquib, 2020). This study's results can be used as input in teaching indigenous science.

This study aimed to identify the beliefs and practices of the Ibanag, Itawes, and Malaueg, three IP groups whose housing traditions are not well-documented, during the pre-construction and post-construction of their vernacular houses.

## **Methodology**

### ***Study Site***

This study was conducted in the towns of Abulug, Enrile, and Rizal where the chosen IPs are principally located. The Malaueg are found in Rizal, the Itawes are from Enrile, and the Ibanag are from Abulug.

The Ibanag, one of the oldest inhabitants in Cagayan Valley, are found principally in Tuguegarao, Solana, Aparri, Peñablanca, Lal-lo, Camalaniugan, Abulug, Buguey and Amulung in Cagayan. Before the Ilocano diaspora in downstream Cagayan, the Ibanag mainly inhabited the area. One of the towns where the Ibanag can still be found is Abulug. The Itawes are commonly found in the northern part of the Philippines particularly in Cagayan Valley. Ethnologists distinguish Itawes with its own dialect and characteristics, form of shelter, clothing, art, social structure, and other attributes. In a census record cited by Rocero (1982), it was noted that among the "Itawes area", Enrile has the largest percentage of Itawes living in the municipality compared to other ethnic groups. Furthermore, the last of the three ethnic groups considered in this paper is the Malaueg. The Malauegs are the ethno-linguistic group found mainly in Rizal, Cagayan. Originally, they are people by Kalingas who came from the provinces of Apayao and Kalinga.

### ***Data Collection and Analysis***

This project is part of a wider project to examine the vernacular house construction methods, beliefs, and practices of the indigenous people of Cagayan. The study employed a variety of approaches, including semi-structured interviews, focus groups, and archival research. Interviews and focus groups relied on narrative inquiry for villagers to relate their stories and experiences. Key informant interviews were conducted with cultural studies experts, including community chiefs and individuals with practical understanding of house construction methods and practices. Table 1 summarizes the demographics of the interview participants. Focus groups explored the beliefs and practices of the IPs. There were eight to twelve participants in each focus group. Interviews and focus groups were conducted in the local language and in Tagalog, which is spoken by most respondents. Interviews and focus groups were recorded and transcribed non-verbatim.

## **Results and Discussion**

### ***Beliefs and practices in selecting the date for the construction commencement***

The researchers found that the IP groups rely on the influence of the moon or the use

of lunar calendar in selecting the most auspicious time to start the construction. The groups have a planetarium or what they call “*lunaryu*” which uses zodiac signs and the lunar system with corresponding interpretation. The “*minassingan*” or the “*minassiri-siri*” is the one who reads and interprets the planetarium. They also suggest the best month, date, and time for the said activity.

**Table 1.** *Demographics of the Study Participants*

Total Sample	Focus Group Discussion		
	Abulug 8	Enrile 12	Rizal 9
Sex:			
Male	3	7	5
Female	5	5	4
Age Group:			
50 - 55 yr	3	2	2
55 -60 yr	3	4	2
60+ yr	2	6	5
Education:			
Primary	1	5	6
Secondary	2	4	3
Tertiary	5	3	-
Main Income:			
Farming	3	3	5
Salaried Work	-	5	3
Small Business	-	2	1
Retired/None	5	2	-

The selected dates are thought to protect or spare the would-be occupants from future tragedies, evil spirits, and ill omen. Adherence to the suggested timetable, on the other hand, would result in a plentiful, happy, and productive existence for the family.

Dates such as 8, 10, 18, 28, which are written in upward strokes, are regarded lucky. February is considered a forbidden month because it has fewer days. The Malaueg prefers to start construction on a full moon while the Ibanags and Itawes take into account not only the full moon but also the new moon which according to them, represents new beginnings, new hope, and new life. On the other hand, the 5th lunar phase, when the moon vanishes, is considered taboo they believe it brings bad luck.

Tuesdays and Fridays are scorned at by the Malauegs because for them, it signifies bad luck in relation to the depiction of the sorrowful mysteries. Meanwhile, the Itawes think that these days are undesirable believing these are when sorcerers’ (*annamay*) powers persist.

The researchers noted the similarities between the three groups’ beliefs and practices in choosing the date for the construction commencement and other cultures’ in the country. As cited by Zarate (2000), Ilonggos in Bacolod, Ilocanos, Cebuanos, and folks from Laguna and Southern Tagalog Regions believe also refer to the lunar calendar prior to groundbreaking to ensure good fortune for the occupants. Ilonggos, for example, prefer to start building on May or September while March and August are regarded as “*lean months*” which the Ilonggos believe to be months that bring hardship.

Ilocanos, on the other hand, do not start building their houses during the month of March simply because “Marso” sounds like “marso-od” which in Ilocano means “will crumble.” Meanwhile, Cebuanos favor the months of February, April, or September for building. Laguna and other Southern Tagalog regions avoid house construction in January and May because according to them, the house will catch fire easily. For them, having it in February will lead to an early death to either couple and if done in March or April, the couple will be blessed with lucky children. Furthermore, they believe that a groundbreaking in June, September, or November will bring fortune to the spouse fortune. However, the property will be vulnerable to numerous robberies or losses, or, in another light, the house's owner will be associated with notorious characters such as bandits if the activity begins in October or December, Old people in some parts of the country think that house construction should not commence in any month that begins with the letter "r." As a result, it is preferable to construct in May, June, July, or August. Lastly, Tausugs in Mindanao construct houses only during the Muslim calendar months when pilgrimages to Mecca begin. In terms of days of the month and times of day, the 2nd, 8th, 14th, 18th, and 22nd, as well as 5:30 to 6:00 AM or 1:00-3:00 PM, are thought to be auspicious.

### ***Beliefs and practices observed during the preparation of housing materials***

The preparation of materials to be utilized which is an important element of the house-building process usually includes woods and bamboos.

The Malaueg calls the process of selecting the kind of wood as “*tarikayu*” which is done by the elders in the community. They look for “*tulang nga kayu*,” a hard, sturdy and mature wood which would be the cornerstone post. For a post to be good, it has to be circular with a diameter of 6-7 inches and with a length of about 3 ½ meters. These posts are carefully selected from trees that when cut should fall directly on the ground without any obstruction. If the tree falls on another tree or other object, the Malaueg believe that a family member would become ill. When the tree falls into a body of water, such as a stream or river, it represents death. The conduct of the “*tarikayu*” is halted when a wild chicken, which the Malaueg calls “*kasi*,” is seen in the neighborhood. Their presence of the “*kasi*” is thought to be the catalyst for a domestic fire or catastrophe.

The Ibanags prefer that the post be free of “bird's eye,” or “*ari nammata*,” because they consider the bird's eye wood formation to be weak. The Itawes require that the tree used for the house be free of vines (*lanut*), as this would attract snakes. In addition to the postings, the Ibanags collect nipa palms which they weave into nipa shingles using a thread they call “*babban*.” These nipa shingles are used in building the house's walls and roof along with a bamboo floor. Similarly, for the Itawes, they make use of cogon or “*gahut*” which is cut from mountainsides for the roof and walls. Bamboos are used for the flooring of the house. In the same way, the Malauegs also prepare “*bulu*” or bamboo for the walls and roof while a specific type of bamboo which is termed “*pasingan*” is used for the flooring or “*datag*”. The researchers also observed the similarities between the three groups beliefs and practices observed during the preparation of housing materials and other cultures in the Philippines.

According to Zarate (2000), wooden paneling or exposed posts from lumber is generally forbidden. Moreso, when it is not yet completely dried up and is still “weeping” at their knots, in places where branches were to have grown out. This is so because they are believed to bring endless grief for the members of the household where these panels or posts are used.

In the Tagalog region, wood from dead trees is avoided because of their belief that it

would cause frequent sickness in the family. It is also forbidden to use cracked logs as building material because they would bring an early death in the owner's family. "Balete" wood is not allowed as lumber in house construction because it is believed to be frequented by spirit dwellers.

On the other hand, Bicolanos do not use trees that have vines wrapped around their trunks for posting because of they think that this would cause snakes to frequent a house. They don't trim trees that grow side by side and have branches that contact. They also don't touch trees that grow by a river since they believe the gods of the forest own these trees.

In the Cordilleras, they have to ensure that lumbers to be used in their houses are evil-spirits free by carefully and painstakingly selecting the wooden structural elements and identifying the origin of the lumber for this connotes death if not observed. Second hand or old lumbers are likewise discouraged even among Ilokanos so as not to invite bad fortune. The same book includes ideal positions of the post for a house. It prohibits, among other things, being in an upside-down position. It is critical that pillars and other vertical supports within the structure have their natural tops up and natural bottoms down, since otherwise, "buhay na palubog," or "life that sinks down," will occur. In fact, the construction of a house is equated to the development of a fetus by Tausugs. The navel, they believe, is the first organ to develop in a woman's womb. As a result, the first post to be put within the home should be the main post. Meanwhile, in Cagayan Valley, after the footings have been sprinkled with wine, the first post to be erected is the one closest to the northeast. On the island of Romblon, the same notion about the clockwise position of the post holds true. Meanwhile, Yakans avoid using crooked wooden posts, particularly those with knotholes, as they represent death.

Meanwhile, Zarate (2000) outlined the beliefs that must be adhered to when preparing information. For example, woodsmen in Ilocos Norte sing poems before cutting down trees or bamboos to placate the forest's spiteful spirits and obtain permission from the forest's spirit guardians (mangmangkik). When chopping down trees, padugo (bloodletting ritual) is also performed (Talbo, 2018). A pure white chicken is sacrificed, and the blood is wiped on the trees to be cut down. Visayans and Tagalogs are also known to follow the lunar calendar (Talbo, 2018).

### ***Beliefs and practices observed during the groundbreaking***

The construction of the house begins once all of the supplies are ready. The Ibanags' groundbreaking is known as "patuno," whereas Itawes and Malaueg's is known as "patunak."

The Ibanag prefers to have their ground-breaking activity at dawn which is usually initiated by the wisest elder in the community. The activity includes the determination of the center of the construction site where a white cloth is raised to signify that a house will soon be built on it. As a gift to their ancestors, the Ibanag buries a chicken blood-filled cross, a white cloth, and a bunch of salt at the center of the site. During the ground breaking, a piece of gold is scraped and wrapped in fine cloth, which goes with salt, rice, water, and wine.

The gold and grains represent the family's prosperity and abundance. Water, on the other hand, represents mental clarity and a peaceful interaction between family members. The salt represents meaningful life, while the wine is meant to ward off evil spirits and protect the family from disasters and potential threats.

After all of these artifacts have been buried, the community's senior member or a designated prayer leader delivers a personalized invocation. In the absence of these people, the

mother or the father shall perform the ritual.

The Itawes observe similar rituals for the groundbreaking, except for the identification of the center spot of the lot. They just excavate or “makkogkog” on the specified lot. In the hole or “avvut”, they place wine or “binarayang”, beetle nut “gawag”, chicken or “manuk”, candle or “candela”, ginger or “laya” shell or “kabibe”, pot with rice or “banga nga hinnian baggat na” and handkerchief or “panyuk”. They believe that these materials would give them abundant blessings, vigor, and serenity. These also serve as their amulet or “anting-anting”. A porridge called “pinatarak” is served for oneness in the family.

The Malaueg avoid scheduling the activity on Tuesdays and Fridays considering the persistence of sorcerers’ or “annamay” powers and on a Sunday which is their rest day. Furthermore, these are the days for the sorrowful mystery in the Holy Rosary which depicts the death and suffering of Jesus Christ.

A male member of the household who is not an orphan and the eldest son in the family called the “paluntarak” should be present during the activity while women are prohibited from attending the groundbreaking. In the event that a woman accidentally passes by, the excavator should turn his head away from the woman because it means the soil may erode. The crowbar or “bareta” that used during the excavation for the first post should be hidden and should never be used again. A significant amount of salt is also sprinkled to drive away bad spirits. The Malauegs, on the other hand, put water or “danum” and coins or “sinsilyu” for peace and harmony among members in the family and wealth respectively. They shed chicken blood shedding to appease the ancestors.

During the groundbreaking, the Malaueg serve a certain rice cake they call “*linait*” which symbolizes close ties among family members. They halt the groundbreaking when somebody sneezes before it starts as this signifies bad luck. Lastly, the groundbreaking ritual for all the three (3) IP groups which is done at dawn and usually concluded with a prayer or “*oracion*” recited by an elderly in the community is a unique practice. The above beliefs are complemented in the compilation of Zarate (2000) on Filipino Building Beliefs. They are practically observed all over the different regions in the Philippines.

### ***Beliefs and practices observed post-construction or during the occupancy***

After construction is the occupancy stage or what they call “*paggali*” in Ibanag, “*paggalit*” in Itawes, and “*paggalis*” in Malaueg.

Before the family moves at dawn, an elderly man along with a rooster should first stay in the house for a night to light a fire to ward off evil spirits. Until the rooster crows, members of the various IP groups' families stay in their homes. The moving is done first thing in the morning since it symbolizes peace among the family members.

Because old age symbolizes longevity, the oldest member of the family should be the first to occupy the house during the transfer. This exercise entails bringing the following items: 1) “*bagga*” (Ibanag), “*baggat*” (Itawes), and “*baggas*” (Malaueg) or rice to represent bountiful life and food security; 2) “*danum*” or water to represent peace of mind and harmonious relationships; and 3) “*asin*” or salt to represent meaningful life. To ward off evil spirits, the blood of a chicken with yellow feet is painted in the shape of a cross on the door.

Meanwhile, the Ibanags and Itawes sprinkle salt and lights up a bonfire for its smoke to fill the house over night before the couple moves to drive away evil spirits. It is customary

for the first occupants who would stay overnight to be aged members, except the widowed, of the community. This also illustrates the Ibanags' desire for long-term relationships. For Malauegs, a piece of lemon should be brought upon transfer to ignite fire and its juice is said to shoo away mosquitoes.

## **Conclusion**

From the findings, the researchers conclude that there are significant similarities among the practices and beliefs observed by the Itawes, Ibanag, and Malaueg in the different stages of their house building. Notable is the identical observance among the three groups' groundbreaking activity which could be due to cross-culture sharing.

Other than practical purposes such as climate adaptability and the housing materials' availability, the researchers also conclude that the three groups' housing beliefs and practices are mostly influenced by superstitions (animals, plants, etc. signifying either luck or misfortune), religion (leaning towards or against days in accordance to the mysteries recited in the Holy Rosary), and astrology (referring to the moon or a planetarium in determining the schedule for the commencement of the construction).

The researchers also note sexism among the motivations for some of the housing beliefs and practices such as women not being allowed to attend the groundbreaking activity and excavators turning their head away in case of a woman passing by during the groundbreaking.

All of these beliefs and practices are still observed because Filipino families will always dream of living prosperously while living in their home. Through these practices, Filipino families also aim to ward off evil spirits, be prepared for any tragedy, and avoid fatalities and accidents.

Ultimately, the design features of the vernacular houses of the three groups can inspire modern houses and buildings of today.

## **Recommendations**

The researchers recommend the following.

- a. The findings of this study can be used as a material in the teaching different subject matters in the basic and higher education. Contextualization of lessons may use the documentations of the beliefs and practices of the IPs as springboard.
- b. The use of other indigenous groups in Cagayan Valley as subjects of the study to have a deeper comparison between vernacular housing practices and beliefs.
- c. An examination of beliefs and practices the indigenous groups have during the construction of their house, if applicable.
- d. A closer look on the economic factors to find out whether or not relatively more well-off indigenous families still observe these beliefs and practices.

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