

BIBLIOGRAPHY

GUINATANG, GLESTON L. APRIL, 2013. Indigenous Management and Utilization Practices on Natural Resources in Kalumsing, San Emilio, Ilocos Sur. Benguet State University, La Trinidad Benguet.

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ABSTRACT

This study documented the indigenous management and utilization practices on natural resources in Kalumsing, San Emilio, Ilocos Sur relative to the socio demographic profile of the respondents, the management and utilization practices and undertaken by the community residents along with forest and water resources, the intervention from the Barangay Local Government Units, and the different problems encountered by the community residents in the management and utilization of natural resources. It was conducted at Kalumsing, San Emilio, Ilocos Sur. It involved 40 respondents who were residents in the community for at least 40 years. It was conducted in January 2013.

As to the findings of the study, the respondents claimed that *manga-ew* (gathering dried firewood) and *putrido* (pastureland) as highly practiced in the management and utilization of forest resources. Moreover, the respondents looked at *men pasapas* as moderately practice in the management of forest resources. Other forest management practices in a descending order are; *mendapilat*, *men pang-ngati* and *men kub-ong* (pit).



Result implies that there is abundance of forest resources in the community since the people had good management practices and they seldom do hunting.

With regards to water management practices, the respondents strongly believed that *menmula* or planting trees along riverbanks, springs and other water sources and doing *menlama* (a traditional way of catching fish) were the best practices in the management and utilization of water resources. The prohibition of the Barangay LGU in burning and illegal occupancy of the forest and issuing permit in cutting trees greatly helped in the management and utilization of natural resources. The respondents stated that Barangay LGU allows community residents to have free access on wild flora and fauna but not for commercial purposes.

The respondents followed the banning of explosives, electrical, *samal* or *tuba* and other deleterious methods resulting to the death of small fish is a good intervention in the management and utilization of water resources

As to the sanctioned by the community residents and the elders, the respondents believed that *masapit* (reprimand) *masakab* (whipping) and *maili-bot* (marching around the community) were good punishment that helps in the management of natural resources. The practices also helped the Barangay LGU in maintaining peace and order in disciplining the community residents

The most serious problems they encountered in the management and utilization were the presence of natural calamities that destroyed the natural resources and the indigenous utilization practices were replaced by the used of modern equipments such as rifles and chainsaws. The respondents believed that there has been an adequate dissemination of sanctions and policies regarding the management and utilization of natural



resources. This is strongly supported by the fact that the respondents did not have problems with illegal loggers in the community.

As to the recommendations, the community residents should continuously practice and extend the good practices and discontinue unsafe or unfriendly practices in the management and utilization of natural resources; community residents, parents and elders should teach and expose their children or the younger generations on the good practices in the management and utilization of natural resources, good practices on the management of natural resources undertaken by the community residents may be introduce and share to other communities for replication, the Barangay LGU should continue to work hand in hand with its constituents in the formulation of laws and implementing the policies and intervention programs that will integrate environmental management and preservation on natural resources.



RESULTS AND DISCUSSION

This section presents the profile of the respondents as to their personal information. It also reflects the practices of the community residents on the management and utilization of their forest and water resources, and the intervention from the Local Government Units. Moreover, the problems encountered by the residents on the management and utilization of forest and water resources are also included.

Profile of the Respondents

The profile of the respondents as to gender age, civil status, ethnic identity, educational attainment, main source of income and number of years in the community is shown in Table 1.

Age. The ages of the respondents ranged from 40 to 80 years old. The greatest number of respondents falls under the age group of 51 to 55 (27.50%) followed by age group of 40 to 45 (22.50%) and 71 to 75 (12.50%) years of age. At least there were respondents at the ages of 76 to 80 (8%) who shared their rich experiences. Data implies that the respondents were at the age to have sufficient experiences on the management and utilization of natural resources in the community.

Civil Status. Among the 40 respondents, 70% were married, only five were single and seven widowed. This shows that most of the respondents have their families of their own.

Gender. With regards to gender, majority of the respondents were males (77.50%) and 22.50% were females. It implies that the respondents in the community are dominated by males in terms of representation for every household.



Table 1. Profile of the respondents

PROFILE	NO.OF RESPONDENTS (N=40)	PERCENTAGE (%)
a. Age		
40-45	9	22.50
46-50	4	10.00
51-55	11	27.50
56-60	6	15.00
61-65	1	2.50
66-70	1	2.50
71-75	5	12.50
76-80	3	7.50
TOTAL	40	100.00
b. Civil Status		
Single	5	12.50
Married	28	70.00
Widowed	7	17.50
TOTAL	40	100.00
c. Gender		
Male	31	77.50
Female	9	22.50
TOTAL	40	100.00



Table 1. Continued...

PROFILE	NO.OF RESPONDENTS (N=40)	PERCENTAGE (%)
d. Educational attainment		
No schooling	1	2.50
Elementary undergraduate	7	17.50
Elementary graduate	8	20.00
High school undergraduate	7	17.50
High school graduate	7	17.50
College undergraduate	5	12.50
College graduate	5	12.50
TOTAL	40	100.00
e. Household main source of income		
Farming	27	67.50
Sari-sari store	1	2.50
Remittances from abroad	2	5.00
Pension	2	5.00
Carpentry	1	2.50
Government employee	3	7.50
Unemployed	4	10.00
TOTAL	40	100.00



Table 1. Continued...

PROFILE	NO.OF RESPONDENTS (N=40)	PERCENTAGE (%)
f. Number of years living in the Community		
40-45	10	25.00
46-50	4	10.00
51-55	12	17.50
56-60	6	15.00
61-65	-	-
66-70	-	-
71-75	5	12.50
76-80	3	7.50
TOTAL	40	100.00

Educational Attainment. Almost all (98.50%) of the respondents had formal education with only one (2.50) who claimed to had never gone to school. Most of respondents had elementary education (37.50%), followed by those who had high school education (35%); at least some had college or tertiary education (25%). According to the respondents, they were not able to finish high school because they lacked perseverance in hiking at a far distance going to school since there were few schools during their time.

Main Source of Income. Most (67.5%) of the respondents claimed that their main source of income is through farming. At least 10% claimed to be unemployed as they were depending on family support because due to old age. Only few were government



employees (7.50%), pensioners (5%), dependent on remittances from abroad (5%) and self-employed carpenter and sari-sari store owner (2.50%).

Length of residency in the community. Most of the respondents had been in the community for 51-55 years. Few of them have been in the community for 71-75 years followed by 75 to 80 years. Data shows that the number of years living in the community is the same as their age and almost all of them had been there since birth.

Indigenous Practices on the Management and Utilization of Forest and Water Resources

Forest resources. *Um-a* or other known as *kaingin* (Figure 5) is a traditional agricultural farming system in the locality. This is usually done before the onset of rainy season (March to May) and/or after harvesting rice from the rice paddies (November or December). Production of food in the *um-a* is usually done to augment their rice production from the rice paddies (lowland) in order to have enough supply of staple food for the year. It is a practice that follows a certain process. According to the respondents, they choose a land with lesser trees, which is easier to clear and to avoid cutting more trees. The *um-a* is usually close or within the vicinity of the communal forest or private woodlots. During the clearing (*gaikan*) of the *uma*, they gather the trees and plants that have value and can be useful to them. Then the grasses are cut off (*kep-asan*) and left behind to let them dry for 2 to 3 weeks. Before burning the dried leaves and grasses, a fire line is established (*gasidan*) ranging from 4 meters to 10 m in order to control fire from spreading out to the forest.



Figure 5. An old *um-a* planted with g-melina trees to let the soil regain its fertility



Burning the *um-a* is usually done during night time for it is more convenient due to the cooler temperature and less wind to spread the fire. This shows that the farmers practice controlled burning within the forest area. The *um-a* is prepared and as soon as it rains, planting starts.

Red rice (*langpadan*) a traditional variety of rice that is known for its aroma and good quality in making *tapey* is usually planted in *um-a*. String beans, cassava, sweet potato are intercropped together with pigeon pea and bananas. After five or more years, fast growing trees like paper tree or “*gmelina*” are usually planted in the *um-a* in order for the soil to regain its fertility. The *um-a* will now become a woodlot where the owner has the right to harvest the matured trees hence, it is their obligation to take care of it.

Inside the *um-a*, is a *Lapog* or *bangkag* which is intended for sowing seedlings (*bunubon*) of rice or tobacco.



Figure 6. A lapog planted with mongo (*balatong*) after the seedlings were transplanted

If the selected area is rolling or slope, they make a terrace to level it (*mages-ad*), so that the seedlings will have even growth. Branches of the nearby trees which hamper the growth of the *bunubon*/seedlings are trimmed. After transplanting rice or tobacco, crops like pigeon pea (*kardis*), mongo (*balatong*), sweet potato (*kamote*) and drought resistant crops are also planted in the lapog.

Ammu-yo (*Bayanihan*) system is still a common practice among the people of Kalumsing. The people in the community help each other especially when an individual who needs more labor in the *um-a* such as clearing, planting and harvesting crops, fruit and tree planting. After which, the labor service is returned back to every individual who participated by working in their farms too. This practice had been a great help to the community residents because even they don't have cash to pay for labor, still the job can be done with the help of their neighbors. Aside from the *ammu-yo* system, the *Gamal* wherein, a group of men or women will work in one's field then after the job is done they

will butcher an animal like goat or dog in which the meat (*oraga*) is divided among themselves. These practices help the residents develop the spirit of cooperation, camaraderie, and concern for one another as well as for their environment. The good thing in practice is the community people are the ones working in their own farm area, which shows that they have common concerns in the management of their resources.

Men-pasapas is a practice of selective harvesting of live trees and/or branches during dry season (November to May), then dried and stored for lumber, fuel use in cooking food and the larger ones (*agom*) are used for curing tobacco. In gathering fuel wood, they usually select the fast growing species of trees that can re-grow after cutting like *aludig*, *ipil-ipil*, *damalkis* and *kawkawat-te*. Individuals who own woodlots or *um-a* get their *agom* and firewood from there. Most often, lumber or fuel woods are gathered from the overcrowded part (*baet-ba-etan*) of the forest to thin the population of the trees and give favor for other trees to grow.

Manga-ew (gathering firewood) is a common practice of the people in the community which they use for cooking their food. Unlike the *men pasapas* only the dried trees or tree branches are being gathered. This practice is not harmful to forest resources for it is a selective way of gathering or harvesting wood. It helps to prolong the life of the trees and a good practice in the management and utilization of forest resources.





Figure 7. Children gathering some firewood (*manga-ew*) in the forest

Putrido (pastureland) is an indigenous practice of the community people wherein the cattle or draft animals are released to the forest for almost 7 months (June to January). During summer, the animals are brought down to the farm to work and the others are confined in the corral (*kodal*) because there are no more grasses in the forest. Until the next rainy season the cattle are again freed to the forest because the grasses and leaves of trees have already regenerated. This practice is usually done by group of individuals wherein they share the cost of perimeter fence to prevent the cattle to go astray and maintaining the area. On the other hand, the animals help in soil fertility and they act as medium for plant diversity when they eat the seeds of trees or plants then the seeds will germinate from their dropping to another location. This implies that the people have their own way of maintaining the forest naturally.

Men-kub-ong is an indigenous practice in hunting wild pig (*alingo*) (*Sus celebensis*) with the use of a pit (*kub-ong*) which is dug at 5 feet high x 5 feet wide in the forest. The *kub-ong* enclosed by a fence and covered with wood slats and leaves. Sweet potatoes or gabi are planted around the pit to attract the *alingo* to enter the perimeter. As the *alingo* starts to eat, there are ropes or cords place under the soil that was interlinked or intertwined at the entrance cover, when the animal will bump at the ropes, the entrance gate will be closed. The *alingo* will start to jump out finding exit (the *kub-ong* is located at the exit) and there it will be trapped. The *kub-ong* was designed only for matured and bigger wild pigs. The catch will either be domesticated or for human consumption. This shows that the indigenous way of catching wild pigs very conservative because it only catches a few, unlike the use of the rifles, fire arms or poison which is not environmental friendly.

Men-dapilat is a practice of catching wild animals such as monitor lizards (*banyas*), quail and wild chicken using *silo* or cord as shown in Figure 8. The trap will be set and it will be checked (*masangat*) every after a day. The catch is for human consumption only and it is by chance, seasonal so it is limited.



Figure 8. A *dapi-lat* use to catch wild animals such as monitor lizard and wild chicken

Men-pang-ngati is a practice in catching live birds. A live bird will (maipa-a-yat) or acts as bait inside a trap or *tangkal* as shown in Figure 9, attracting the same species of bird to get inside the trap. Young and smaller birds will be set free or domesticated. This shows that the people practice a selective and conservative manner of catching birds.



Figure 10. A *tangkal* (cage) used to catch birds (*pang-ngati*) alive

Water resources. Tree planting (*men-mula*) is a practice done near riverbanks, springs and other water resources. The respondents believed that planting trees will conserve and preserved their water resources, which they need in their everyday living. They usually plant different species of bamboo, *let-teng*, kakawate, and acacia trees except gmelina, because it absorbs too much water. This shows that the indigenous people know how to sustain their water resources.

Men-lama is an indigenous practice in fishing with the use of stones piled in the river to create a habitat for the different species of fish as shown in Figure 10. This practice is usually done before summer starts and harvesting the fishes on the month of April when the water level is low.



Figure11. A pile of stones (*lama*) that serves as habitat for different species of fish

In harvesting, the small or younger fish will be left behind for them to grow and reproduce for the next years. This implies that the fishes in the river are sustained.

As shown in Table 2, the above described indigenous practices on the management and utilization of the forest and water resources are either highly practiced, moderately practiced or not being practiced at all.

Under the management and utilization of forest resources, majority of the respondents claimed that they highly practiced *manga-ew* (gathering dried firewood) and a little more than half of them (52.5%) were moderately practicing *men pasapas*.

Findings of the study relates to the claim of Oliver and Heany (1996) that the indigenous populations know their natural environment intimately. They appreciate its great diversity and extract their livelihood and materials from it.

Almost 90% of the respondents were no longer practicing *men-um-a* or swidden farming. According to the respondents several area of the forest was already used for *um-a* in the past decades and it is time for the forest to take a rest or recuperate for the next generations

of people in the community. This implies that the people are concerned about the future of the next generation.

Findings of the study relate to the claim of Sajise and Rambo (1985) that shifting cultivation is governed by usufruct rights, and each cultivator has exclusive ownership rights to the crops produced. Such lands are cultivated for several years until the soil becomes depleted of nutrients. Then the land put to fallow for several years so the soil will regain its fertility. During the fallow period, the cultivator either clears another portion of the forest or returns to a piece of land that has been kept to fallow for several years.

Table 2. Management and utilization practices of natural resources

PRACTICES	NUMBER OF RESPONDENTS					
	HP	%	MP	%	NP	%
Forest Resources						
<i>Manga-ew</i>	28	70.00	10	25.00	2	5.00
<i>Men-um-a</i>	-	-	4	10.00	36	90.00
<i>Men-pasapas</i>	13	32.50	21	52.50	5	12.50
<i>Pang-ngati</i>	-	-	8	20.00	33	80.00
<i>Men-dapilat</i>	-	-	29	72.50	11	27.00
<i>Men-kub-ong</i>	-	-	2	5.00	38	95.00
<i>Putrido</i>	30	75.00	6	15.00	4	10.00
Water Resources						
<i>Men-mula</i>	36	90.00	3	7.50	-	-
<i>Men-lama</i>	27	67.50	3	7.50	10	25.00

*Note: Multiple responses (HP-Highly Practiced; MP- Moderately Practiced; NP- Not Practiced)



Almost all of the respondents claimed that they practiced *putrido* which lessens their work and effort in the farm for they can already focus on their crop production and other farm activities. Result implies that the forest is still very important to the people of the area.

Findings of the study relate to the claim of Leonen (1998) that indigenous resource management practices are seen as conservation-oriented. A key argument for recognizing indigenous peoples' land rights is that there is a link between land conservation and indigenous peoples, as "they would be better ecological managers".

More than 70% of the respondents claimed that they moderately practiced *dapi-lat* and majority of the respondents stated that they no longer practiced *men kub-ong* and *men pangngati*. According to the key informants these indigenous practices in catching wildlife were only done for leisure time. This implies that there is abundance of wildlife in the area since the people seldom do hunting.

Findings of the study contradict the claim of Mallari (2001) that the destruction of most of the original forest in the last century has made many people predict that the Philippines could soon suffer from mass extinction of species.

In water management and utilization practices, 90% of the respondents claimed that *men-mula* or planting trees near riverbanks, springs and other water resource is highly practiced. According to some respondents, planting trees is not just a responsibility but it is a commitment to your family and to the community. Findings of the study agrees on the claim of NWRB (2003) that deforestation and lack of effective management of forest and freshwater ecosystems have led to the further deterioration of watersheds, limiting aquifer recharge and increases water runoff and soil erosion.



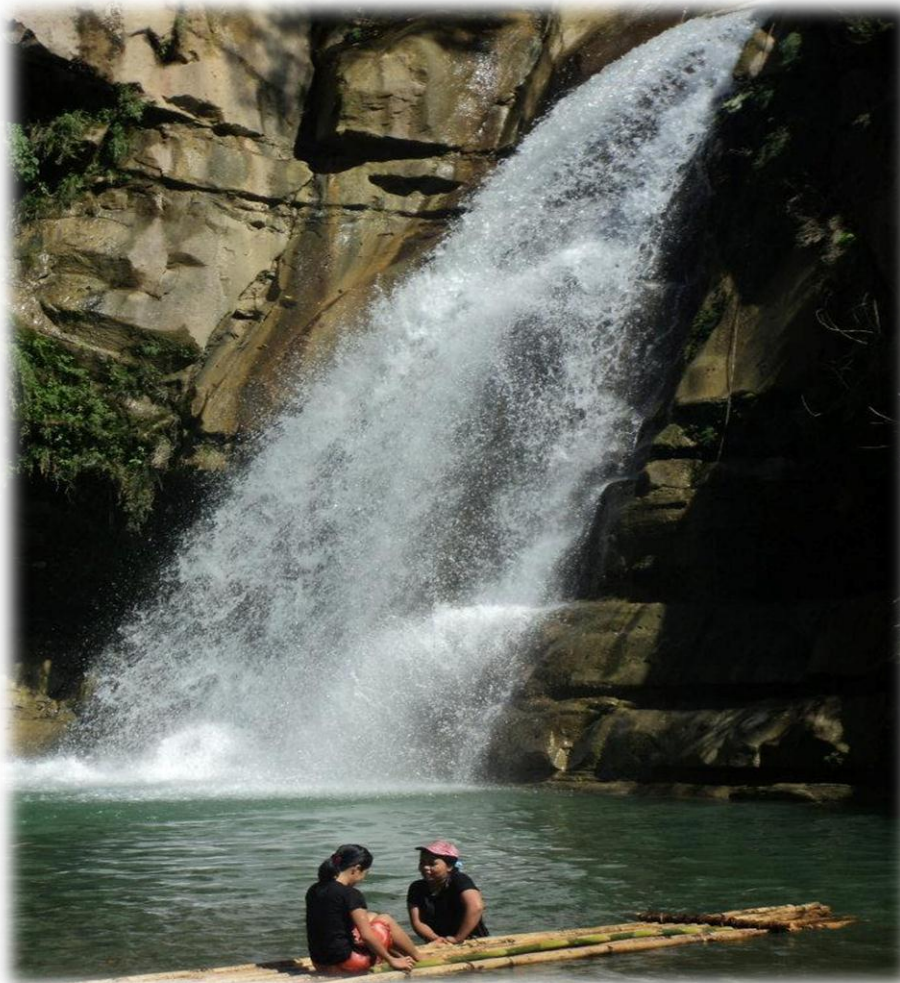


Figure 12. Payegpeg falls



Figure 13. Trees like acacia and *let-teng* planted by the community residents at the upper part of the *payegpeg* falls

Almost 60% of the respondents claimed that catching fish (*man-lama*) is highly practiced since it is a ready source of fish for their own consumption.

As cited by Manonchon (2009), natural resources are abundant because indigenous people possessed traditional knowledge and practice that sustain and protect them. Traditional management of water resources was then the responsibility of every member in the community. Communal water springs were maintained and managed by the villagers that draw water therein. Usually, the people who live nearby the water spring manage and maintain the spring.



Figure 14. The man is preparing the area to start a *lama* (fish habitat)

Intervention from Barangay Local Government Unit

Table 3 shows the intervention from the Barangay Local Government Unit in the management and utilization of natural resources. The interventions were categorized as highly implemented, moderately implemented and not implemented at all. Majority of the respondents claimed that the Barangay LGU prohibits forest fires and illegal occupancy in

the forest. Ninety percent (90%) of the respondents stated that Barangay LGU allows community residents to have free access on wild flora and fauna but not for commercial purposes. Moreover, eighty percent (80%) of the respondents claimed that the Barangay LGU issues clearance in cutting trees.

Table 3. Intervention from Local Government Unit

INTERVENTION FROM LGU'S	NUMBER OF RESPONDENTS					
	HI	%	MI	%	NI	%
Barangay LGU prohibits burning and illegal occupancy of the forest.	35	87.50	5	12.50	-	-
Barangay LGU issues permit in cutting trees.	32	80.00	8	17.50	-	-
Barangay LGU allows community residents to have free access on wild flora and fauna but not for commercial purposes.	38	95.00	2	5.00	-	-
All public and private institutions together with every household must have a dumping pit to avoid dumping on springs and rivers.	13	32.50	26	65.00	1	2.50
Barangay LGU prohibits the use of explosives, electrical, <i>samal or tuba</i> and other deleterious methods resulting to the death of small fish.	38	95.00	2	5.00	-	-
Barangay LGU prohibits the tying of farm animals on rivers and springs.	24	60.00	16	40.00	-	-
Barangay issues permit allowing the residents to create fishpond on rivers for them to take good care.	40	100.00	-	-	-	-

*Note: Multiple responses (HI-Highly Implemented; MI- Moderately Implemented; NI- Not Implemented)



Findings of the study relates to the claim of Rondinelli and Cheema (1983) that economic, administrative and even political authority in managing natural resources inevitably involves a two-tiered system of governance - national and local. The degree of national-local relations depends on coherence between national and local development goals and distribution of powers and functions.

All of the respondents stated that Barangay issues permit allowing the residents to create fishpond on rivers for them to take care. Ninety five (95%) of the respondents believed that Municipal and Barangay policy on the prohibition for the use of explosives, electrical, *samal* and other deleterious methods resulting to the death of small fish is highly implemented. Furthermore, 60% of the respondents believed that the prohibition of tying farm animals in the rivers and springs was highly implemented as well. Result implies that the Barangay LGU is being serious in the implementation of the Municipal and Barangay policies and ordinances relative to the management and utilization of natural resources.

Findings of the study relates to the claim of SANREM (2001) that in the pursuit of reforms for local environmental management, there are three important things to consider - relevance, enforceability, and sustainability.





Figure 15. Community residents construct pond at the river where owners are obliged to take good care of it

Along with the intervening policies, sanctions and punishment practices set by the community residents and elders are:

Mai-sapit (amicable settlement) is a common practice where elders or old folks in the community are being summoned to act as a judge if an individual has committed a crime or violated laws and ordinances. The elders are called *lupon* headed by the *panglakayen*. The verdict will be executed depending on the level of crime committed. Violations of policies on natural resources like creating forest fires and doing the *samal* are considered high level crimes which have penalties such as the *multa* (heavy fines) like a pig or a carabao being butchered for the whole community residents. The *lupon* will also decide if an individual will be *maisakab*, *mailibot* or both.

Maisakab is another kind of indigenous practice to sanction individuals who violated laws and were proven guilty are whipped at their butt using bamboo stick by the Barangay officials and elders and depending on the agreed number of whip. Violations like cutting

live trees (*men-pasapas*) on woodlots and *um-a* without permission from the owner is covered by this practice.

Mailibot is a kind of sanction for violators if proven guilty will be put to shame by roaming around the community from house to house beating the drum (*tambor*) telling his/her name, his/ her violation or crime and that the people would not follow his/her example. Violations like using of electrical materials and *samal* or the use of poison in fishing and causing forest fires are example of high crimes that may be subjected to this kind of punishment.

Table 4 shows the sanctions and punishments set by the community elders and residents of the community in relation to the Barangay interventions in the management and utilization of natural resources. All of the respondents stated that the practices are highly practiced. According to the respondents these sanctions had help the Barangay LGU in maintaining peace and order in the community and in disciplining the community residents. Result implies that community residents had a high respect regarding the traditional way of settling issues.

Table.4 Sanctions /punishment practices

PRACTICES	NUMBER OF RESPONDENTS					
	HP	%	MP	%	NP	%
Ma i-sapit	40	100.00	-	-	-	-
Masakab	40	100.00	-	-	-	-
Ma-ilibot	40	100.00	-	-	-	-

*Note: Multiple responses (HP-Highly Practiced; MP-Moderately Practiced, NP-Not Practiced)



Problems Encountered by the Community
Residents in the Management and
Utilization of Natural Resources

As shown in Table 5 the problems encountered by the community residents were categorized as very much serious, moderately serious and not serious at all. According to more than half of the respondents, the most serious problem they encountered in the conservation was the presence of natural calamities that destroy natural resources. On the other hand 25% of the respondents stated that some of the indigenous utilization practices are not being done nowadays due to the use of modern equipments such as rifles and chainsaws was the most serious problem. However, more than 75% of the respondents rated the lack of policies and ordinances that may limit the people of the Barangay and the nearby communities in the hunting of local flora and fauna, closely followed by reduced wildlife due to forest exploitation by the nearby communities at 75%.

Vast majority of respondents felt that there has been an adequate dissemination of sanctions and policies regarding the management and utilization of natural resources. This is strongly supported by the fact that 85% of respondents did not have problems with illegal loggers in the community. Other problems in a descending order are; reduced population of wildlife due to presence of swiden farms in the forest and shortage of water supply resulting from irresponsible cutting of trees.



Table 5. Problems encountered by the community residents

PROBLEMS ENCOUNTERED	NUMBER OF RESPONDENTS					
	VMS	%	MS	%	NS	%
Presence of illegal loggers in the community	-	-	7	17.50	34	85.00
Presence of abandoned swidden/kaingin farms	-	-	13	32.50	27	67.50
Shortage of water supply resulting from irresponsible cutting of trees	-	-	14	35.00	26	65.00
Reduced population of wildlife due to presence of swidden farms in the forest	-	-	15	37.50	25	62.50
Reduced wild flora and fauna resulting from the exploitation of the forest by the nearby communities	2	5.00	30	75.00	8	20.00
Lack of policies and ordinances that may limit the people of the barangay and the nearby communities on hunting wild flora and fauna	3	7.50	31	77.50	6	15.00
Inadequate dissemination and implementation of sanctions and policies on the destruction and violation regarding natural resources.	-	-	8	20.00	32	80.00
Natural calamities such as typhoon affect and destroy natural resources	23	52.50	17	42.50	-	-
Some of the good indigenous practices are not being done nowadays due to the use of modern technologies such as rifles and chainsaws.	10	25.00	22	55.00	8	20.00

*Note: Multiple responses (VMU-Very Much Serious; MS- Moderately Serious; NS- Not Serious)



SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study documented the indigenous management and utilization practices of natural resources in Kalumsing San Emilio Ilocos Sur relative to the socio demographic profile of the respondents, the management and utilization practices and undertaken by the community residents along with forest and water resources, the intervention from the Barangay Local Government Units, and the different problems encountered by the community residents in the management and utilization of natural resources. It was conducted at Kalumsing, San Emilio, Ilocos Sur. It involved 40 respondents who were residents in the community for at least 40 years. It was conducted in January 2013.

As to the findings of the study, majority of the respondents looked at *manga-ew* (gathering dried firewood) and *putrido* as highly practiced in the management and utilization of forest resources. Moreover, half of the respondents believed that *men pasapas* as a moderately practiced in the management of forest resources. Other forest management practices in a descending order are; *men-dapi-lat*, *men-pang-ngati* and *men kub-ong* (pit). Result implies that there is abundance of forest resources in the area is high because of the good management and utilization practices.

With regards to water resources, the respondents strongly believed that *men-mula* or planting trees along river banks, springs and other water sources and doing *men-lama* (creating fish habitat) was the best practices in the management and utilization of water resources.

Majority of the respondents claimed that the prohibition of the Barangay LGU in forest fires and illegal occupancy of the forest and issuing clearance in cutting trees help in the



management and utilization of natural resources. Almost all of the respondents stated that Barangay LGU allows community residents to have free access on wild flora and fauna but not for commercial purposes.

The respondents followed the banning of Barangay LGU for the use of explosives, electrical, *samal or tuba* and other deleterious methods resulting to the death of small fish is a good intervention in the management and utilization of water resources. Other water resources management in a descending order; Barangay LGU issues permit allowing the residents to create fishpond on rivers; and barangay ordinance that every household must have a dumping pit to avoid dumping on springs and rivers. Result implies that the Barangay LGU is being serious in the implementation of the Municipal and Barangay policies and ordinances relative to the management and utilization of natural resources.

Findings of the study relates to the claim of Rondinelli and Cheema (1983) that Economic, administrative and even political authority in managing natural resources inevitably involves a two-tiered system of governance - national and local. The degree of national-local relations depends on coherence between national and local development goals and distribution of powers and functions.

As to the sanctioned by the community residents and the elders the respondents believed that these sanctions helped in the management of natural resources. According to the respondents these practices had help the Barangay LGU in maintaining peace and order in the community and disciplining the community residents. Result implies that community residents had a high respect regarding the traditional way of settling issues.

The community residents encountered several problems relative to the management and utilization of natural resources. According to more than half of the respondents, the most



serious problem was the presence of natural calamities that destroy natural resources followed by the indigenous utilization practices were replaced by the use of modern equipments such as rifles and chainsaws. The moderately serious problems are; lack of policies and ordinances that may limit the people of the Barangay and the nearby communities in the hunting local flora and fauna and reduced wildlife resulting from the exploitation of the forest by the nearby communities. The not serious problems are; respondents did not have problems with illegal loggers in the community, inadequate dissemination of sanctions and policies regarding the management and utilization of natural resources, shortage of water supply resulting from irresponsible cutting of trees, reduced population of wildlife due to presence of abandoned swidden farms in the forest.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. The community residents are dominated by males. Almost all of the respondents had been there since birth and had rich experiences on the management and utilization of natural resources in the community;
2. The people of Barangay Kalumsing have their own indigenous practices in the management and utilization of forest and water resources;
3. Barangay Local Government Unit had been strict and serious on the implementation of Municipal and Barangay policies and ordinances. The community undertook traditional sanctions or punishment on the violations and crimes committed. The community had its original laws in settling issues before the Barangay ordinances and policies were established; and,



4. The community residents encountered problems in the management and utilization of forest and water resources like natural calamities such as typhoon affects and destroy natural resources and the indigenous utilization practices were replaced by the use of modern equipments such as rifles and chainsaws.

Recommendations

Based on the findings of the study, the recommendations are the following:

1. Community residents should continuously practice and extend the good practices and discontinue unsafe or unfriendly practices on the management and utilization of natural resources;
2. Community residents, parents and elders should teach and expose their children or the younger generations on the good practices in the management and utilization of natural resources;
3. Good practices on the management of natural resources undertaken by the community residents' may be introduced and shared with other communities for replication; and
4. The Barangay LGU should continue to work hand in hand with its constituents in the formulation of laws and implementing the policies and intervention programs that will integrate environmental management and preservation of natural resources.



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