

# Kapangan Indigenous and Sustainable Systems in Harmony with Mother Nature

母なる自然と調和して暮らすカパンガンの原住民たち。世界的な気候変動の厄災をも和らげる彼らの手法はアジアの未来にとっても有益である。

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## Abstract

In the beginning, Mother Nature was in harmony with its co-creation—the animals, the birds, all creatures particularly humankind. Centuries later, the earth changed because of humankind. Today, nature has become the most common concern for humanity. The present situation is saddening and shocking because of climate change complicated with perplexed problems of many countries.

Kapangan, Benguet, just a dot on the map of Asia, is inhabited by more than 20,000 indigenous peoples. Through the ages, Kapangan has taken pride in broadcasting its indigenous sustainable systems being practiced harmoniously with our Mother Nature. The rich natural resources, cultures, customs and traditions make the IPs closely knit, happy and peaceful. The diverse agricultural and environmentally-friendly technologies like natural farming and community-based forest management contribute to their simple but firmly-fixed living. Coupled to these are socio-economic activities and political bearing in their communities led by exceptionally peaceful and calm political leaders.

Kapangan IPs continuously helps in the preservation of nature while building resiliency against climate change and other global concerns. They believe, “*no Filipino goes hungry in his own native land*” and that in some ways, they shall be rewarded.

**Keywords** Indigenous, Sustainable, Harmony, Mother Nature

## I. Nature and Background

In the beginning, Mother Nature was in harmony with its co-creation: animals, birds, and all other creatures, particularly humankind. Many centuries later, the earth ultimately changed because of mankind. Today, nurturing our Mother Nature became the most important concern for the people of the world. The present situation is saddening, if not shocking, considering the effects of climate change complicated with perplexed problems of many coun-

tries in the world like the Philippines.

Subsequently, Kapangan in the Province of Benguet, only like a dot in the map of Asia, is still a fourth-class municipality, inhabited by more than 20,000 indigenous peoples (IPs).

Through the ages, Kapangan has taken pride in broadcasting that indigenous sustainable systems are being practiced harmoniously with our mother nature. Its geophysical and highland characteristics, besides the rich natural resources turned the

municipality as vulnerable and fragile.

With a total land area of 17,327 hectares, the highest elevation is 1,700 meters above sea level from hilly to mountainous and very steep slopes. However, agricultural lands dominate the area consisting of about 42% of the total land area that justifies why farming is the major livelihood in the municipality.

Demographically, the 4,107 households, with an average family size of 5, belong to the Ibaloy and Kankanaey tribes whose ancestors settled the area a long time ago. These tribes have also a world-view and spirituality, which evolved the body of indigenous knowledge, systems and practices and revolved around their relation with their land and other resources. Included in this view is a justice system which had long guided them in using, protecting and managing their resources and all its natural wealth.

As the saying goes, “Whatever we plant today, we will reap tomorrow.” The Kapangan indigenous and sustainable systems as well as practices are still evident these days. These are priceless and should

be passed on and transmitted over generations. It is on these premises that such wealth needs to be documented, promoted and ingrained in the minds of the young peoples.

## II. Objectives of The Study

Generally, this descriptive research is aimed at imparting the indigenous and sustainable systems of the indigenous peoples of the highlands of Kapangan and showing that in some ways they have contributed and will continue to carry out their missions of abating the effects of climate change and other global concerns.

To achieve the goals, the following are the specific objectives:

- a) To know and be aware of the indigenous systems and practices of the indigenous peoples of Kapangan geared towards harmony and diversity;
- b) To be informed, in various ways, that the IPs have contributed to the preservation and conservation of the ecosystems and biodiversity;

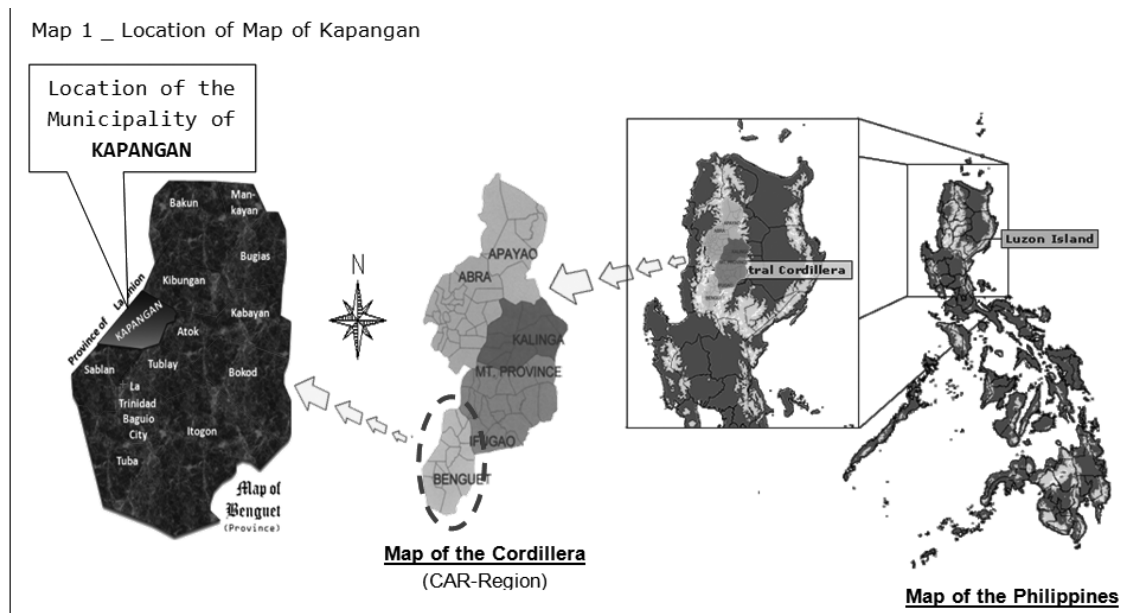


Fig. 1 Maps locating the Municipality of Kapangan, the study area.

- c) To appreciate the sustainability of the practices and ascertain the effects on the lives of the small farmers and indigenous peoples; and
- d) To document and/or put into writing these indigenous systems and practices, which have been transmitted orally over generations and have propelled the community's development process.

### III. Scope and Coverage

In the attempt to achieve the objectives set forth, the study covered the following aspects:

- A. Forest and Watershed Management Systems and Practices;
- B. Agricultural Systems and Practices; and
- C. Other Indigenous Culture, Customs and Traditions.

And, while this research is descriptive, focus group discussions as well as interviews with the indigenous peoples were the major data gathering tools used to elicit and validate the observations and secondary information.

### IV. Forest and Watershed Management Systems And Practices

Indigenous and sustainable forest management systems and practices are still carried out by the people of Kapangan. Most of them believe that watershed and forests should not go in grave peril. They should be sustained in harmony with Mother Nature. Since the Indigenous Peoples are the original forest keepers, they are also stewards of the forest and the lands. In these ways, they too can claim fair rewards as watershed stewards. At this instance, the IPs are satisfied when their rewards are their being healthy and enjoying their simple but firmly-fixed living. For one thing, they have been practicing all the indigenous community-based forest management systems thru the ages and have been thinking of the next generations.

This section relates to the systems of the IPs,

comprising more or less 4,000 households in the study area, in relation to forest and watershed management. Among these are described as follows:

#### ***A. Conservation of the Kalasan or Kadasan***

The IPs practice stewardship over a forest where they help guard and protect such forest area called *Kalasan* by the Kankanaeys and *Kadasan* by the Ibalays. These were orally delineated by the old folks for the community. Behind this, the people observe a kind of spirituality which deeply reveres all forms of life and life-giving support systems such as land and rivers. One has to say a prayer and observe some omen, good or bad, before cutting a tree to be used to build a house. This illustrates the indigenous folks' high regard for their resources and how they deeply revere all life forms.



**Fig. 2** A picture showing the preserved Kalasan or Kadasan

#### ***B. The Protection of the Kaewan or Kijowan***

Every family in the community maintains a *Kaewan* or *Kijowan* aside from the communal forest as above described. The products from these areas have particular uses but usually wood from the Kaewan or Kijowan are used for fuel for cooking or during rituals and social gatherings, some for medicines and some as sources for food. Hence, gathering of forest products thus depends on the particular need of the family or community.

Oftentimes, indiscriminate cutting of trees is considered a sin and when the spirits are displeased, they



**Fig. 3 The family house is within the Kaewan or Kijowan**

may punish the culprit with illness and even death. These beliefs evolved into a cultural principle called *inayan*. This *inayan* is much like the law of karma or law of cause and effect or action and reaction. In another Christian version, this is the principle of “as you sow, so you shall reap.” This law therefore controls the cutting of trees but encourages protection of the forest and woodlands. Hence, when one protects nature, he has pleased the spirits and most of all the “*Kabunian*,” as the creator of the earth and all life and non-life forms. Therefore, he gets blessed for protecting and using wisely the resources he has been entrusted with. (Fig. 3)

**C. The Establishment and Promotion of Eco-Tourism Parks**

Nature’s beauty abides in most of the barangays of Kapangan, and eco-tourism parks have been established in some areas. From the beautiful rocky-mountains up to their age-old rice terraces have evolved their own time-tested technologies and resource management schemes (Fig. 4). Chiefly, these are indigenous but sustainable and the people regard these lands and all its wealth as an inheritance which must be bequeathed to generations yet unborn.



**Fig. 4 One of the Eco-tourism Parks in Kapangan that entices local and foreign tourists.**



**Fig. 5 The Management of the Ecosystem: Flora and Fauna Protected.**

**D. Biodiversity or Ecosystem Management**

Aside from believing and worshipping *Kabunian* as the Supreme Being, the indigenous peoples also believe that spirits and deities are guarding and managing the land, the forests, rivers, caves, and endangered animal species. From such a belief system, values and ethics or the sense of right or wrong evolved. And, all people’s action perceived that are not permitted by the guardians can bring misfortunes, strong typhoons, earthquakes and disasters. Hence, the biodiversity or the flora and fauna should be managed properly to have a balanced ecosystem. (Fig. 5)



## V. Sustainable Agricultural Systems And Practices

As background, agriculture is a cause and effect of climate change. Actually, agricultural land contributes 12% to greenhouse gas emissions that affects our mother nature. Hence, agriculture must adapt to climate change in order to provide food security and maximum agricultural development that everybody aimed for.

More than 1,000 small farmers of Kapangan in many ways have adapted the diverse and sustainable agriculture technologies as described in this section. This includes the following:

### A. Old-Age and Hand-Made Rice Terraces

Like the other indigenous peoples in Northern Philippines, the e-Kapangans (inhabitants of Kapangan) must also be credited with developing the rice-terrace farming technology. This technology is also an engineering technique of impounding earth along a foothill or river valley. The technique called *kabite* involves lining up of stones fitted together on top of the other without support of clay or mortar (Fig. 6). These riprap walls form terraces that produce levelled plots to retain fertile soil. It is also in this way that they could make riprap walls in between slopes or gullies to prevent erosion and collect instead the top soil for crop production.



Fig. 6 Man-made Rice Terraces in Kapangan, Benguet.

The Kapangan rice terraces are said to be centuries old, have fed and nurtured generations and will continue to do so as long as water continues to flow from the mountains. In relation to this, the Indigenous Peoples will continue to help in the preservation of nature through building these resilient rice terraces because of their genuine belief that “no Filipino goes hungry in his own native land.” All these portray their religiosity toward their Creator, creativeness, patience and industriousness, and the belief that they shall also be rewarded.

### B. Multiple Cropping

At least 575 farmers in Kapangan have practiced multiple cropping since long ago. They know how to consider the compatibility of crops. “Plants have likes and dislikes, friends and enemies.” (Fig. 7)

### C. The Practice of Intercropping

The main crop is planted with cash crops in between. These diverse and green technology increases the agricultural productivity of the farmers side by side by giving more economic returns on the same parcel of land. “Plants have likes and dislikes or friends and enemies.”

Fig. 8 shows that dragon fruit is the main crop, intercropped with ube (left photo) while ampalaya is the main crop with the snap beans being intercropped (right photo).



Fig. 7 A type of multiple cropping where the main crop



**Fig. 8** A picture of a farm depicting how intercropping is practiced in the area.

#### ***D. Multi-storey and Cover Cropping Practices***

Even without the climate change phenomena, the IPs had long time ago practiced this multi-storey and cover cropping. This is common in the sloping areas or mossy forest where coffee and other shade-loving crops are planted under alnus trees and other larger tree species. While there is diversity in agriculture (coffee plants, cut flowers, gabi and other plants under the shade trees), the old people can now say that the fresh and clean air they breathed are the impacts of the century-old farming system that they adapted. (Fig. 9)

#### ***E. Succession Cropping/Crop Rotation***

This cropping pattern is obviously done by the farmers in this highland region, not only in Kapangan. Crop rotation is at the same time a technology that prevents soil borne diseases and other forms of infection. In the study area, particularly in the rice terraces, the farmers have native rice as their first crop and after 6 months, bell pepper, sweet potato and/or peanuts will be planted after harvesting the palay. (Fig. 10)

#### ***F. The Indigenous Ways of Pest Management***

Pest management in the community is not using pesticides or insecticides on their farms. Decades have passed and farmers have known these green technologies using fermented plant juice (FPJ) and



**Fig. 9** Coffee, ginger and even anthurium are planted under alnus trees.



**Fig. 10** Rice-peanut-rice or rice-camote-Bellpepper cropping pattern

fermented fruit juices (FFJ) to spray or water their plants in the farms to control insects and diseases. Likewise, some animals, fowls, and frogs prey on insects and these living animals control pests attacking their plants. The following pictures show plant and fruits that can be extracted or juiced, in order to control pest and diseases.

Other farmers had already known that some plants are insect repellent like lemon grass, rosemary, marigold, and these are planted in hedgerows and along sides of the farms. Handpicking and manual destruction of insects is also carried out by some farmers. (Fig. 11)

#### ***G. Mulching of Crops even up to Post-Harvest***

The system of mulching of crops has been practiced





**Fig. 11** This picture shows the crops and animals that are used for pest management



**Fig. 12** This picture shows how mulching is done by IPs in Kapangan, Benguet.

by the IPs in the highlands since time immemorial. When the farmers do weeding on their farms, these are simply collected to cover the plants up to when they are dried as organic matter that will fertilize and/or moisturize the soil.

Even up to post harvest like in ginger crop, mulching is done to preserve the harvested products and will only be marketed when price is favourable. (Fig. 12)

### ***H. Composting/Mokusaku Technology***

The farmers in Kapangan know that soil enrichment is basic in farming. They believe that healthy soil rich in organic materials raises healthy crops. Soil enrichment is possible through application of compost to the soil. Hence, farmers practiced composting



**Fig. 13** This picture is the Mokusaku Composting Facility and Technology adapted by Kapangan Farmer organizations

on their agricultural venture even before new technologies came.

Modern technologies of composting are already being adapted in Kapangan. Mokusaku is one major innovation in composting which was introduced by Mr. Masaki Yokomori of Japan. Before this technology, however, older farmers did composting by accumulating animal manure mixed up with vegetable debris and other weeds up to these are decomposed. However, when the mokusaku technology was operational, the farmers extensively used mokusaku or wood vinegar as media for the composting process. Fig. 13 illustrates the new composting technology with facilities operated by farmer organizations.

### ***I. Container Gardening***

This practice is done in the backyards of the households, in 27 schools (elementary and High Schools) and other government and non-government institutions in the Municipality.

This system of gardening at least solved the problems on food security where food is plenty on the table, even when cash is insufficient. In the schools, there is a government program through the Department of Education (DepEd) called "*Gulayan sa*



Fig. 14 The above photo illustrates the container gardening practice of institutions in the area.

*Paaralan.*” Students and pupils and teachers are enjoined to maintain a backyard farm using container gardening technology and other indigenous technologies. (Fig. 14)

## VI. Other Indigenous Cultural Practices, Customs and Traditions

### A. Anitap Festival

This local *Anitap Festival* is named after the abundant and free-growing tree in the area called *Anitap*. As a social gathering, the young and old celebrate and enjoy coming together as one family with the approval of *Kabunian*. With their *gongs* and *solibao* (drums), they dance and sway their *tayao* for men and *sarong* for women.

In this festival, they butcher pigs and offer these to *Kabunian* and the *spirits* as thanksgiving for blessings and provisions bestowed on their families and their communities in all the days.

### B. Christmas Ed Kapangan (Christmas in Kapangan)

Every Christmas time, the Local Government Unit of Kapangan organizes this three to four days *Christmas ed Kapangan* where local and foreign tourists

register for this activity for a fee. This includes trekking over the identified eco-tourism destinations and experiencing or observing the customs and traditions of the indigenous peoples in Kapangan. In this occasion, the IPs will gather and celebrate with the tourists. While the tourists enjoy it, the IPs also are happy entertaining them and exercising their hospitality attitudes as a sign of thanksgiving.

### C. The Tongtong System (Peace, Justice and Harmony)

The harmonious and peaceful life of the IPs in Kapangan is not an accident. A well-organized socio-political and justice system had guided the Ibaloys and Kankanaeys for generations especially on land disputes, family problems and community issues.

The *Tongtong system* covers all aspects of behaviour and its decision-making process is participatory. Under this indigenous system, no one is judged and no one formally presides. Believed to be as old as the first settlers of the community, this justice system, based on consensus, can be credited for the very low crime rate in this upland town. This have been passed on to one generation to the next from the venerated ancestors; thus accepted as sacred and unchanging. Nobody knows who legislated this law nor does anybody knows whether the *Tongtong System* has ever been amended. What is clear is that the system exists in the memory of wise, old men and women, who are considered the best arbiters in the village.

*Bain* or shame is the ultimate sanction for a crime and it makes living for a convicted person intolerable in a unanimously reproachful community. Oftentimes, this win-win system of conflict resolution requires some rituals to be undertaken by both parties, all expenses charged to the convicted person.

All these rich cultures, customs and traditions result to a peaceful, happy and closely-knit lifestyle of the indigenous peoples of the community.



## VII. Interdisciplinary Partnership and Networks

The lead in pursuing these time-tested indigenous knowledge systems and practices is the Municipal Local Government Unit (MLGU) of Kapangan headed by Municipal Mayor Roberto K. Canuto, the co-author of this paper. These are community-driven that is compared to a house built on a solid rock foundation. The government and non-government roles and interventions are just facilitative.

To realize the public-private partnership aim of the country, a network of outsiders was organized into a programme entitled *“Weaving Partnership of Stakeholders towards Economic Development and Good Governance in Kapangan.”* In sustaining the agriculture systems, members of this network include the Department of Agrarian Reform (DAR), Department of Agriculture (DA), Department of Public Works and Highways (DPWH), and others. On institutional development and good governance, the facilitating agencies are the Department of Interior and Local Government (DILG), Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE), Benguet State University (BSU) representing the academe, etc. The private partners or the Non-Government Organizations serving the Municipality, and as members of the Network, comprise the Shontoug Foundation as the Convenor of the Network or Partnership of Stakeholders, and the Benguet Electric Cooperative (BENECO).

From all indications, this partnership can succeed further in facilitating these community-driven participatory endeavours in sustaining the indigenous knowledge systems and practices.

## VIII. Conclusions, Challenges and Plan Of Actions

The Kapangan Indigenous and Sustainable Systems (KISS) herein documented and uncovered in this study are geared towards harmony and diversity. The ecosystems and biodiversity have been preserved and conserved for the present generations for these were transmitted orally (knowledge and systems) and physically (rice terraces, land, etc.) to more than a thousand families in the locality and have propelled the development of the e-Kapangans.

From the agricultural development point of view, the farmers are still considered small farmers on the account of economic standing. Contrastingly, the eco-tourism industry has somewhat upgraded and is still reaching its desired goal. Ultimately, the Kapangan’s sustained indigenous systems in harmony with Mother Nature is a gift to the next generations, especially those who care much about the kind of development where the indigenous people matters most.

Therefore, plans of action through the bottom-up participatory approach will be in collaboration with the civil society organizations. Sustaining these indigenous and sustainable technologies shall be pushed and implemented consequently with the development plans of the government.

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