


THE EXPANSION OF VEGETABLE FARMS IN THE
MT. PULAG NATIONAL PARK

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The seal of Benguet State University is circular, featuring a central emblem with a crown and a torch, surrounded by the words "INSTRUCTION" and "EXTENSION". The outer ring of the seal contains the text "BENGUET STATE UNIVERSITY" at the top and "1916" at the bottom.

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ABSTRACT

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This study assessed the expansion of the vegetable farms in the Mt. Pulag National Park, particularly the influencing factors on the expansion and how these vegetable farms expanded. It also solicited recommendations from the key stakeholders on how to address this pressing concern.

The study used complete qualitative methodology. A case of Kalanguya farmers was described to analyze the vegetable farm expansion. This was supported by key informant interviews, focus group discussions, participant observation and photo-documentation. Pertinent research data were analyzed and interpreted to address the objectives of the study.

Results revealed that the Kalanguya vegetable farms started as far as the 1900s to support their way of life. They practiced the slash and burn or locally termed “kaingin” (swidden farming system) as initial agricultural operations which were intensified as a growing livelihood in the area.

The factors influencing the vegetable farm expansion are poverty, lack of alternative livelihood, cultural activities, migration, increasing population, no definite area boundaries, and ancestral ownership of the land. However, it is the ancestral ownership that is being recognized by the Kalanguyas to be the most influential even with defined government policies and interventions.

The original area of farms of the families doubles or triples after the children got married and have their own families. Another mode of expansion is the migration of farmers from adjacent municipalities and provinces, after purchasing areas to be operated as new vegetable farms. In addition, the expansion of vegetable farms is influenced by the ignorance or low knowledge of laws covering Protected Areas and National Parks.

Even with the various programs and protection activities of the DENR, other government agencies and the LGU, expansion continues. Laxity in implementation of laws and policies is still observed.

Proper information, education and communication strategy of appropriate policies to local development and the use of the ecological community analysis and natural resource management support the conditions and sustainability of the Mt. Pulag National Park.

INTRODUCTION

Background of the Study

Natural resources are considered important aspects in development. They are the basis for socio-cultural, economic, technological and ecological development especially if these are properly protected, conserved, managed and developed by people and communities.

In the Philippines, several natural resources are under the protection and management of the government, people and local communities. These include forests, inland water bodies, landscapes and seascapes, and even islands. One of the best sites noted is the landlocked region of the Cordilleras. It is the haven of the world famous Ifugao Rice Terraces and the site of the second highest mountain in the Philippines, the Mount Pulag.

Mount Pulag covers approximately 11,500 hectares of public domain that lies on the north and south spine of the Grand Cordillera Central Mountain Ranges. It straddles portions of the provinces of Benguet, Ifugao, and Nueva Viscaya.

In February 20, 1987, it was proclaimed as National Park by virtue of Presidential Proclamation No. 75 because of its unique physical and biological characteristics. The park is situated within five municipalities

namely, Kabayan, Buguias, Bokod in Benguet, Kayapa, Nueva Viscaya and Tinoc, Ifugao. The municipalities are all considered fifth class municipalities based on their income class (NSO 2005).

The establishment of Mount Pulag as a national park is for the protection and preservation of its physical landscape including its natural vegetation, wildlife. It is source of natural water system for households, irrigation, and hydroelectric power for the communities and interested nature stakeholders. It is placed as an initial component of protected areas under the Republic Act. No.7586 or the National Integrated Protected Areas System (NIPAS) framework.

The Mount Pulag National Park (MPNP) is one of the eighteen sites identified as an ecosystem and habitat containing high plant diversity including wild plants and animals which could be enhanced for genetic diversity protection, propagation and conservation (NBSAP, 1997).

It is also the habitat to 76 bird species, 14 of which are migratory, 9 are endemic to Luzon, and 30 species are endemic to the Philippines. Several threatened species of mammals are also present in the park which includes the Philippine Brown Deer, Northern Giant Cloud Rat, and Long-haired Fruit Bat (Mt. Pulag General Management Plan, 2000).

The Mount Pulag National Park has three types of vegetation: pine forest in the lowest areas of the park, mossy forest from the upper

mountain rainforest as high as 1,500 meters above sea level and grassland vegetation in small area surrounding the peak (Jensen et al 1994 and Buot and Okitsu 1997).

The Benguet Pine (*Pinus kesiya* Royle ex Gordon), a very prominent species not only in the park but also in the entire Cordilleras occupies the lower slopes of the mountain up to about 2,300 masl, with an area of 2,047 hectares or a percentage cover of 18% from the total land area.

The higher elevation is the mossy forest covering 5,822 hectares, which is dominated by four (4) different species from the families of *Fagaceae*, *Podocarpaceae*, *Lauraceae*, and *Euphorbiaceae*. The mossy forests constitute the greater extent of vegetation in the area covering almost half of the entire protected area. Ferns, lichens and moss grow thick on the trunks of trees because of high moisture.

Immediately after the mossy forest is the dwarf bamboo-covered grassland summit, which has gently rolling landscape. The grassland entirely covers the summit with approximately 800 hectares or 7% of the total land area. Meanwhile, the cultivated and residential areas cover 25% or 2, 877 hectares (IPAP, 1990).

Aside from being the highest peak in Luzon and the second highest in the Philippines, Mt. Pulag is popularly noted for its unique vegetation

that remains unmatched in the whole archipelago.

From a varying altitude of 1,000 to 1,200 up to 2,300 meters above sea level, the pine tree, *Pinus kesiya* is the dominant tree. It is interesting to note that the great extent of pine forest in Mt. Pulag is not actually part of the original vegetation that once occupied the area (Jacobs 1972). This flourishing type of vegetation is mainly a result of human activities. When parts of the original forests are cleared for other uses, bare soils exposed to full light become favorable for the germination of pine seeds. On some other occasions, conditions for germination only occur after landslides or fires (Whitmore, 1984), as cited by Jensen et al (1994). In the case of Bashoy, the existing pine forests are second growth forest from the logging operations (1935–1988) of the Benguet Corporation, Incorporated (BCI).

As a watershed, Mount Pulag supplies the water needs of many communities and stakeholders for domestic and industrial use, irrigation, inland aquaculture, and hydroelectric power production in Luzon such as the Binga, Ambuklao, San Roque and Magat dams.

Agriculture is a major source of livelihood in the area and its development is strongly influenced by accessibility. Vegetable farms abound in areas where road networks exist. In 2000, the farm-to-market road was constructed in Tawangan as an infrastructure project issued to

the farmers. The road passes right in the middle of the mossy forest destroying century-old trees and biodiversity, as well as their habitat.

The farmers came from four ethnic groups, namely; Kalanguyas and Ibalois as the original farmers, and Karaos and Kankanaeys started vegetable farming in the early 1990s.

The advent of increasing agricultural operation within the national park is causing tremendous damage to the whole mountain range including the protected biodiversity. Based on this, government agencies, specifically the Department of Environment and Natural Resources (DENR), local government units and concerned citizens sought actions to protect, conserve, and manage the area for more sustainable management.

Prior to this, a comprehensive documentation and assessment of the agricultural operations must be conducted to help policy and decision-makers and planners develop programs and activities to mitigate these operations.

The conduct of study on agricultural operations particularly on vegetable farming is a practical input to the programs on the protection, conservation, management and sustainability of the national park in relation to social, economic, and ecological development.

Statement of the Problem

In most areas of the Cordillera mountain range in the Northern Philippines, residents in the mountainous areas derive much of their resources and livelihood from the land and natural resources. The forest is seen as an economic source of most of the basic needs of upland residents. In an era where the environment is seen as one of the most important global issues that emphasizes the interconnectedness of man's activities and the natural environment, the accountability of societal actors to the environment is brought to the forefront. The issue of growing concern for sustainable development stems out from the idea that resources are finite and that the concern that environmental protection could be achieved together with economic growth should be enforced by every nation (Balcagan, 2007).

The Mount Pulag National Park (MPNP) is confronted by several threats. Foremost is the expansion and encroachment of vegetable farms into the park within the last decade. Today, the cultivated vegetable area is approximately 1,785 hectares or 18% of the total land area of the park. Other threats confronting the park include timber poaching, infrastructure development, overlapping of tenurial instrumentalities, and legal pluralism. According to Balcagan (2007), legal pluralism is the presence of several existing policies covering the management and protection of the park from

various government agencies which do not necessarily harmonize to address the issues and concerns of protection, conservation and management of the national park.

This observation has brought attention to concerned agencies to harmonize operation and understand the dynamics of implementation within a growing concern of vegetable expansion inside the Mt. Pulag National Park.

The continuous expansion of the vegetable farms endangers the entire Mount Pulag National Park and actions need to be undertaken to minimize negative effects which are hard to manage by the stakeholders.

This study aims to assess how these vegetable farms come to exist inside a protected area covered by the NIPAS Law, particularly a proclaimed national park.

Specifically, the study aims to answer the following questions:

1. What are the factors influencing the expansion of vegetable farms in the Mount Pulag National Park?
2. What is the system and process of expansion of vegetable farming operation of the local people and communities?
3. What are the effects of policies and regulations on the expansion of vegetable farms in the Mount Pulag National Park?

Objectives of the Study

1. To identify the influencing factors in the expansion of vegetable farms in the Mount Pulag National Park.
2. To determine the system and process of expansion of the vegetable farming operation of the people and communities.
3. To determine the effects of policies and regulations on the expansion of vegetable farms in the Mt. Pulag National Park.

Importance of the Study

Sustainable development and effective natural resource management are the most important aspects in ecological development. Specifically, protection, conservation and sustainable management in relation to community development will be studied using cases of local people and communities of the Mount Pulag National Park.

Critical status on the extent of damage caused by vegetable farming and concerns on protection, conservation and management of the MPNP will be revealed to further understand and develop appropriate actions for stakeholders to adopt through collective action and cooperation.

At the same time, this study will increase ecological awareness of people engaged in natural resource management and other allied fields.

Likewise, it will widen appreciation on the value and benefits derived from the unique ecosystem and similar areas for proper planning and implementation of programs and activities within a national park.

Furthermore, the research findings will serve as basis for more action- oriented activities essential for natural resource management, and the formulation and implementation of rules and regulations on sustainable management.

In addition, the study is viewed to contribute to community dynamics and sustainability of emerging communities especially to people who depend on natural resources for livelihood and cultural practices. It will also provide appropriate strategies in analyzing community resource management and processes for government agencies, development workers, researchers and educators for proper action in the protection, conservation and sustainable management of natural resources.

The study is a new perspective of community analysis integrating the ideas and elements of community development along side environment and natural resource management. This analysis will draw lessons and experiences particularly on the involvement of an indigenous group that is culturally inclined towards environmental development and management.

Scope and Delimitation of the Study

The study focuses on the vegetable farms of Kabayan, Benguet. Most of these vegetable farms are concentrated in barangays Tawangan, Ballay and Bashoy. These barangays are accessible by all-weather roads which also serve as farm-to-market roads for vegetable products. These barangays comprise approximately 60% of the total land area of the Mount Pulag National Park, and compose at least 75% of the existing vegetable farms. The remaining 25% are located in barangay Catlubong of Buguias, Benguet and municipality of Tinoc, Ifugao.

Out of the four ethnic groups, the Kalanguya is studied because they are the original settlers in the area. Majority of their living conditions as well as community histories are associated with the natural landscape and resources anchored on cultural practices including agricultural production as their main livelihood.

The Kalanguya has the greatest composition with 77% of the population inhabiting the National Park. They occupy the inner portions and the upper slopes particularly in barangays Ballay, Lusod, Tawangan, Upper Bashoy, Upper Eddet, Impugong and Eheb of Tinoc, Ifugao and Balete, Kayapa, Nueva Vizcaya.

The case of the Kalanguya is a very classic testimony of community development as affected by the vegetable farming activities in the area. It

presents cases affecting the use of natural resources, the ill-effects of the farming operations and massive destructions brought about by it. Based on this, ideas, insights and experiences of the Kalanguya tribe is studied in the context of community development and natural resource management.

Conceptual Framework

The declaration of the Mount Pulag National Park has created an interesting area of discourse in the protection and management of natural resources. Key players and stakeholders around and within the park wanted a share of the land for productive operations. This is very evident with the cultivation of the land into vegetable farms.

Historically, the natural landscape of the area was not disrupted until there was a need to seek more food and provide alternative livelihood for its inhabitants. The practice of swidden farming system or 'slash and burn' was noted to have supported the original settlers to survive. This practice has been contained and managed properly by the people who depend on the availability of natural resources. This is also shown by the settlers who depend much on the area for food and source of livelihood. Figure 1 shows the interrelationships of influencing factors on the vegetable farm expansion and management at the Mount Pulag National Park.

As years passed, original settlers slowly cleared and tilled lands for survival and operated them for continuous production. On the other hand, the entry of migrants caused a trend of new clearing operation and tillage of more lands not just for household food production but further intensified them for commercial purposes.



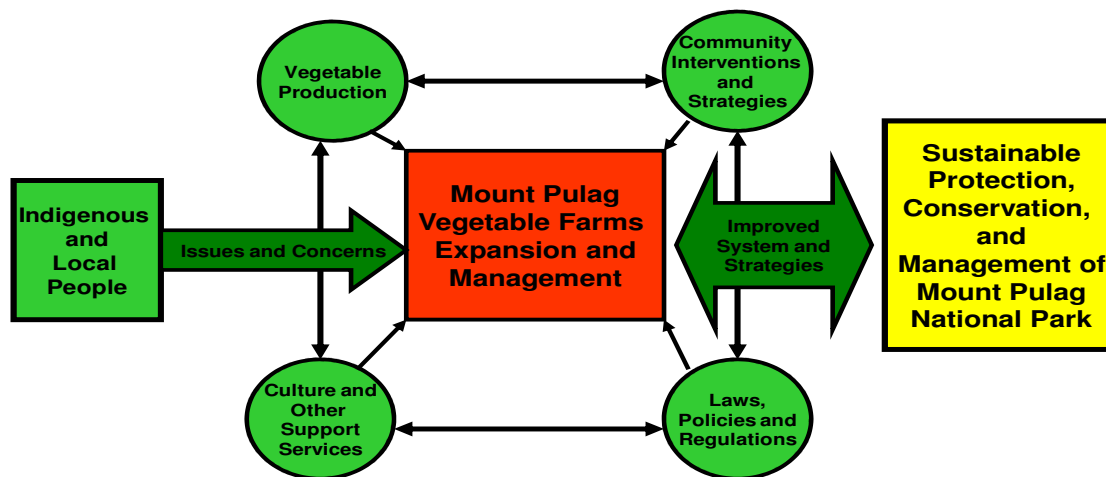


Figure 1. Interrelationships of factors influencing the vegetable farm expansion and management of Mt. Pulag National Park

As this radiated to adjacent communities, more and more hectares are opened leading to the destruction of the park and its surrounding slopes. The clearing and destruction of the forests resulted to new areas for vegetable production the communities.

This scenario has triggered concerned agencies especially the Department of Environment and Natural Resources (DENR) to look at the dynamics of destruction vis-à-vis the management of the natural resources within and adjacent areas of the Mount Pulag National Park.

As a result, the DENR and concerned organizations formulated policies, rules and regulations to protect, conserve and sustainably manage the Mount Pulag National Park. In view of this, it was perceived to minimize further destruction of its natural resources including its flora and fauna and biodiversity in general.

The expanding vegetable farms and encroachment of other people in the park describes a new dimension of natural resource management combined with the increasing growth of the people and development of their community. An analysis of the vegetable farms, its systems, patterns and process of operation is an interesting area of study.

The study will present and describe the state of the Kalanguya tribe vegetable farms within the Mount Pulag National Park. Specifically, it will identify and describe factors influencing the expansion of the vegetable

farms and its effects to the whole management of the park. The factors include the indigenous groups present in the area, approved policies and laws governing the management of the park or even the operations, strategies and innovations introduced in the park to properly protect, conserve and manage the area. The unique physical and ecological features are observed to be affected, resulting to the loss of natural habitat of endangered species and the destruction of biodiversity.

The destruction of the Mount Pulag ecosystem will be detrimental to the communities within and outside the park because of the natural benefits it provides such as the water supply serving downstream for agriculture, inland aquaculture and household consumption and even hydroelectric power in the six dams of Luzon.

It is agriculture that has affected most of the natural landscape of the park that needs to be contained and understood. Based on this, assessment of the extent of damage should be determined in order to know what specific actions are to be done.

Furthermore, the biodiversity that contributes to combat global warming should be sustained and protected. The mossy and pine forests serve as carbon sink for Northern Luzon.

In spite of the importance of Mt. Pulag as a national park to sustain ecological balance and to provide water, the destruction of its forests to

give way to vegetable farms continuous. Government agencies, local people and communities and other concerned stakeholders fear that if the destruction persists, the park will be destroyed in the near future.

The assessment of the whole landscape in relation to the different influencing factors will provide very interesting cases of environmental protection and management, effective and efficient sustainable resource management and indigenous community development.

The expansion and continuous encroachment of vegetable farms into the park will be studied in detail along identified factors studied through interventions of the government particularly the DENR that is mandated to address the welfare of the environment and natural resources of the country, and the local government units.

Overall, the testimonies and insights of Kalanguya tribe will be analyzed using the perspective of community ecological analysis to show the dynamics of people, communities, programs, policies and activities towards development. At the end, a more sustainable and efficient community resource management intervention will be done for all key players and stakeholders to protect and sustainably manage the Mount Pulag National Park in the future.

Operational Definition of Terms

Conservation. It refers to collective actions of stakeholders to sustain the natural condition of the Mt. Pulag National Park.

Cultural Practices. These are the distinct activities of the indigenous peoples in the park based on their norms, beliefs and traditions, handed down from their ancestors to generations.

Culture. It refers to the norms, beliefs and traditions of the indigenous peoples as a tribe or as a community handed down from older generations.

Expansion. It refers to the act of encroaching into areas of the National Park, particularly the strict protection zone, and operating these areas purposely for vegetable farming. The areas maybe contiguous to old vegetable farms or these may be new patches within the pine and mossy forests for operation.

Farmers. It refers to the individuals involved in vegetable farming in Mt. Pulag.

Indigenous Peoples. These are cultural minority tribes with distinct cultural practices, recognized by the IPRA Law as owners of lands they have occupied for generations.

Key Players. These are individuals, communities and organizations who are involved in the protection, conservation and management of the

Mt. Pulag National Park.

Management. It is the overall process of administering all activities as prescribed by law, rules and regulations governing the Park, geared towards the sustainable development of the Mt. Pulag National Park.

Natural Resources. This includes land, water, fauna and flora, as well as minerals and mineral deposits found inside the Mt. Pulag National Park.

Policies. These are laws, rules and regulations that protect and promote the sustainability and ecological stability of Mt. Pulag.

Protection. It refers to the collective actions of keeping the National Park safe from illegal activities that may destroy the natural resources therein.

Stakeholders. These are individuals, communities and organizations that benefit from the Mt. Pulag National Park natural resources but at the same time contribute efforts for the sustainability of these resources.

Sustainable Development. It is protecting nature from negative impacts of development and human activities and securing the natural environment to meet the needs of future generations as well as protect the natural heritage of the indigenous peoples within Mt. Pulag National Park.

Vegetable farming. It is the agricultural system of vegetable production such as cabbage, carrots, potatoes, celery, chinese cabbage and others, particularly in the provinces of Benguet, Mt. Province and Ifugao.

Vegetable farms. These are areas outside or within the Park being operated purposely for vegetable production.



REVIEW OF LITERATURE

Policies Governing Natural Resource Management

The Philippines is signatory to various international commitments concerning the protection and conservation of the environment and natural resources together with sustained environmentally sound development (1992 UNCED, 1985 ASEAN Agreement on the Conservation of Natural Resources). Being committed to such agreements the State passed several laws for sustainable use of the natural resources. One such law is the National Integrated Protected Areas Systems Act of 1992 (NIPAS) which as a matter of policy recognizes in its declaration of the policy:

“ profound impact of man’s activities on all components of the natural environment particularly the effect of increasing population, resource exploitation, and industrial advancement and recognizing the critical importance of protecting and maintaining the natural biological and physical diversities of the environment notably in areas with biologically unique features to sustain human life and development, as well as plant and animal life, it is hereby declared the policy of the State to

secure for the Filipino people of present and future generations the perpetual existence of all native plants and animals through the establishment of a comprehensive system of integrated protected areas within the classification of national park as provided for in the constitution”.

The NIPAS Law

The National Integrated Protected Areas System (NIPAS) Law or Republic Act 7586 of 1992 provides a clear mandate to maintain an essential ecological process and life support systems to preserve genetic diversity, to ensure sustainable use of resources and to maintain their natural conditions to the greatest extent possible. The NIPAS Act established the Mount Pulag National Park (MPNP) because of its unique physical features and outstanding vegetation and wildlife.

The NIPAS Act likewise defines a protected area (PA) as “identified portions of land and water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity, and protected against destructive human exploitation”. In other words, the existing human occupants are considered part of the process in proclaiming a PA. In the Mt. Pulag National Park (MPNP) process towards

being declared a PA, the human occupants perceived what is being undertaken by the State as only a top-bottom authoritarian process. The NIPAS Act though provides stakeholders direct involvement thus the creation of a Protected Area Management Board (PAMB) of every PA.

The PAMB of each of the protected areas is composed of the following: the Regional Executive Director under whose jurisdiction the protected area is located; one (1) representative from the autonomous regional government, if applicable; the Provincial Development Officer; one representative from the municipal government; one (1) representative from each tribal community; and at least three (3) representatives from non-government organizations/ local community organizations, and if necessary, one (1) representative from other government agencies involved in protected area management (NIPAS Revised IRR, 2008).

The PAMB approves policies, guidelines, plans and programs, proposals, agreements and other related documents including the Manual of Operations for the management of the Protected Area. The PAMB also facilitates the ground delineation and demarcation of the boundaries of the PA and buffer zone and ensure that the Management Plan and the Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) are harmonized. Furthermore, the PAMB also monitors and evaluates program implementation affecting the park and resolves

conflicts or disputes among and between tenured migrants (NIPAS Revised IRR, 2008).

The NIPAS Act implementation in the Mt. Pulag National Park is implemented with the lead agency as the Department of Environment and Natural Resources (DENR) hand in hand with the Protected Area Management Board with various representations from the municipal and barangay Local Government Units.

The Indigenous Peoples Rights Act (IPRA)

Republic Act No. 8371 otherwise known as the Indigenous Peoples Rights Act of 1997 is an act to recognize, protect and promote the rights of indigenous cultural communities/indigenous peoples, creating National Commission on Indigenous Peoples, establishing implementing mechanisms, appropriating funds thereof, and for other purposes.

In general, the IPRA seeks to recognize, promote and protect the rights of the IPs. These include the Right to Ancestral Domain and Lands; Right to Self-Governance and Empowerment; Social Justice and Human Rights; and the Right to Cultural Integrity. Simply, these are defined as the recognition of the rights of ownership and possession of ICCs/IPs to their ancestral domains, the inherent right of ICC/IPs to self-governance and self-determination and respect to the integrity of their values, practices

and institutions. Consequently, the state shall guarantee the right of ICCs/IPs to freely pursue their economic, social and cultural development, that the state shall ensure that employment of any form or coercion against ICCs/IPs shall be dealt with by law, and that the State shall respect, recognize and protect the right of ICCs/IPs to preserve and protect their culture, traditions and institutions. It shall consider these rights in the formulation and application of national plans and policies (NCIP Report, 2001).

The IPRA was signed into law on October 29, 1997 by then President Ramos. Hailed as landmark legislation, the IPRA underwent many years of legislative study and deliberation before it became a law. It is the result of various consultation-briefings and consolidated bills related to ancestral domains and lands, and international agreements on the recognition of land/domain rights of the IPs.

On the other hand, the Indigenous Peoples Rights Act (IPRA) of 1997 is believed to have affected the land status of Mt. Pulag, and eventually the ecological stability of the park.

Presidential Decree 705 or the
Revised Forestry Code of the Philippines

The Presidential Decree 705 or the Revised Forestry Code of the Philippines also covers the Mt. Pulag National Park because it is basically classified as a forestland.

This law defines that forest lands include the public forest, the permanent forest or forest reserves, and forest reservations, to include the Mt. Pulag National Park.

This law, among others, promotes for the protection, development and rehabilitation of forest lands so as to ensure their continuity in productive condition.

Section 49 of this law states that roads and other infrastructure in forest lands shall be constructed with the least impairment to the resource values thereof. It further states that government agencies undertaking the construction of roads, bridges, communications, and other infrastructure and installations inside forest lands, shall coordinate with the Bureau, especially if it will involve the utilization or destruction of timber and/or other forest resources, or watershed disturbance therein, in order to adopt measures to avoid or reduce damage or injury to the forest resource values.

Section 53 of the same law states that kaingineros, squatters, cultural minorities and other occupants who entered into forest lands and grazing lands before May 19, 1975, without permit or authority, shall not be prosecuted, provided, that they do not increase their clearings, and that they shall, whenever the best land use of the area so demands as determined by the Director of Forestry, be ejected and relocated to the nearest accessible government resettlement area (PD 705 as amended).

Effects on Natural Resource Management

The Department of Environment and Natural Resources (DENR – CAR) reported rampant conversion of Cordillera Forests into vegetable farms. This was published in the Manila Bulletin (January 27, 2009). DENR CAR explained that a long-term moratorium on the expansion of vegetable farms in Benguet would boost the consolidated efforts of various sectors in the Cordillera to preserve and protect the region's watersheds and forests from destruction.

Also, several actions are geared towards the protection and preservation of the whole area to avoid further encroachment and expansion of vegetable farms into the mossy forest. But in reality, these vegetable farms are continuously expanding and still is happening. Hectares of the mossy forest are destroyed by the expanding vegetable

farms.

On the other hand, protected areas (PA) are affected because of continuous operations by the indigenous people inhabiting the area.

The idea that PAs are areas wherein there should be no occupants is inapplicable in the uplands declared as protected areas in the tropics such as the Philippines, since many reside in mountainous areas and depend on the forest areas for their daily needs.

According to Lynch (1992), there is an estimated forty million people in the Philippines living on land classified as Public Forest including forest protected areas. However, these are just estimates and the exact number of forest dependent people in Southeast Asia is yet to be determined.

Most of the Protected Areas in the country is managed by the Protected Area Management Board (PAMB) which is composed of the various stakeholders in the area. This is mandated by Section 11 of the NIPAS Act citing the Protected Area Management Board (PAMB) as a vehicle for management on site. This demonstrates that the participation of stakeholders in the protection of biodiversity is feasible, not giving the sole responsibility to the government.

Sustainable Development

Sustainable development refers to the wise use of the natural environment and its resources, while maintaining an ecologically sound environment, without sacrificing the future generations. This is the growing concern for the Mt. Pulag National Park. Will it survive the growing expansion of vegetable farms and still be able to provide and function as it should for the future generations?

The classification of the natural environment as protected vis-à-vis accessible/usable resource areas is a major issue in sustainable development. The idea of sustainable development was defined by the Bruntland Commission as “economic and social development that meets the needs of the current generation without undermining the ability of future generations to meet their own needs”. Sustainable development is protecting nature from negative impacts of development projects and securing the people’s rights in the use of the natural environment to meet their needs as well as protect our natural heritage.

Sustainable development is defined as “a dynamic process in which the development and utilization of resources, orientation of technological development, institutional change and direction of investment are in harmony; and both current and future potentials meet human needs and inspirations” (Sajise, 1989). The essence of sustainable development is

the harmonious integration of a sound and viable economy, responsible governance, social cohesion/harmony and ecological integrity to ensure that development is a life-enhancing process. In this context, the ultimate aim of development is human development now and through the future generations (PA 21 Sec. 1.3).

The Philippine Agenda 21 (A National Agenda for Sustainable Development) says that operationally, sustainable development is development that draws out the full human potential across ages and generations, and is, at the same time ecologically-friendly, economically-sound, politically empowering, socially just and equitable, spiritually-liberating, gender sensitive, based on holistic and integrative science, technologically-appropriate, builds upon Filipino values, history, culture, and excellence, and rests on strong institutional foundations (PA 21, Sec.1.5).

In spite of this national agenda for sustainable development, there is an increasing realization that as direct result of human activity, habitats and species are being lost at an accelerating rate world wide. Correspondingly, there is an increasing realization that human beings need to do something urgently in order to protect, conserve and wisely use what is left of the amazing diversity on earth. Protection of habitat is the most effective means of conserving biodiversity (Ryan, 1992).

According to Rees (1990) even with rapid technological advances, humankind is obligated to depend on productivity and life support systems of ecosystems. This condition is attributed to the fixed nature of productive land and natural capital, i.e. resources from ecosystems, aggravated by intensive exploitation and utilization that resource bases could decline. As a consequence, analyses of carrying capacity of land and natural resources became imperative for sustainable development planning.

As economies grow continuously, and consumption of resources (food and energy) exceeds natural capital (such as biodiversity, air, land, water, timber, etc.) negative impacts are manifested in decline of biodiversity, pollution of land, air, water, climatic changes, soil erosion and floods, etc. With environmental factors taken into account in evaluating production and utilization of resources, carrying capacity would mean the maximum rates of resource harvesting and waste generation that can be sustained without progressively impairing productivity and functional integrity of ecosystems wherever these are located. (Rees, 1988)

Biodiversity Conservation Initiatives

The responsibility to conserve, manage, develop, and to properly use the environment and natural resources prompted the Department of Environment and Natural Resources to undertake various actions and

measures to enhance biodiversity.

The reason for the Philippine's membership to the Convention on Biological Diversity (CBD) is to observe and participate in biodiversity conservation for sustainability. Likewise, the ASEAN Regional Biodiversity Center was established in the Philippines to initiate the transfer and development of facilities related to biodiversity and biotechnology.

Republic Act No. 9147 otherwise known as the Wildlife Resources Conservation and Protection Act of 2001 provides the policy to conserve the country's wildlife resources and their habitats for sustainability. Section 25 of the Act calls for the establishment of critical habitat outside protected areas where threatened species are found.

The environmental issues concerning forest lands shall be dealt accordingly to avert the destruction of the vegetative cover of the Mt. Pulag National Park. It is recommended that the conversion of forest lands into agricultural lands which are initiated by doing first 'slash and burn' or '*kaingin*' in the area by the land claimants should be stopped (ERDS, 2008).

Survey and mapping of existing cultivated areas should be undertaken. Any expansion to be done by the cultivators should be dealt accordingly (ERDS, DENR – CAR 2008).

The areas of study will post a new direction in natural resource

management and community development. Using the model of protection, conservation, management and development of community resources combined with the perspective of ecological community analysis, Mount Pulag National Park will be assessed to provide cases for future and expanded studies with similar goals of socio-cultural, economic and ecological development.



METHODOLOGY

Locale and Time of the Study

The study was conducted in Kabayan, Benguet particularly at Mount Pulag National Park, located within the barangays of Ballay, Tawangan, and Bashoy. These barangays are the sites of the vegetable farms which were established and developed as part of the community life of the indigenous people and growing community.

The research was conducted from June 2009 to February 2010. During this period, pertinent research data were collected through testimonies and experiences of the Kalanguya tribe and supplemented by insights of other key players and stakeholders on the protection, conservation and management of the Mount Pulag National Park.

Barangays Ballay and Tawangan are located at the northeastern part of the Park, while barangay Bashoy is located at a southwestern area. These are the areas of the Kalanguya and Ibaloi tribes whose main livelihood is vegetable production. According to DENR estimates as stated in the Management Plan, there are at least 180 farm lots with an approximate land area of 1,785 hectares, and still expanding over time.

Figure 2 shows the location of the study sites.

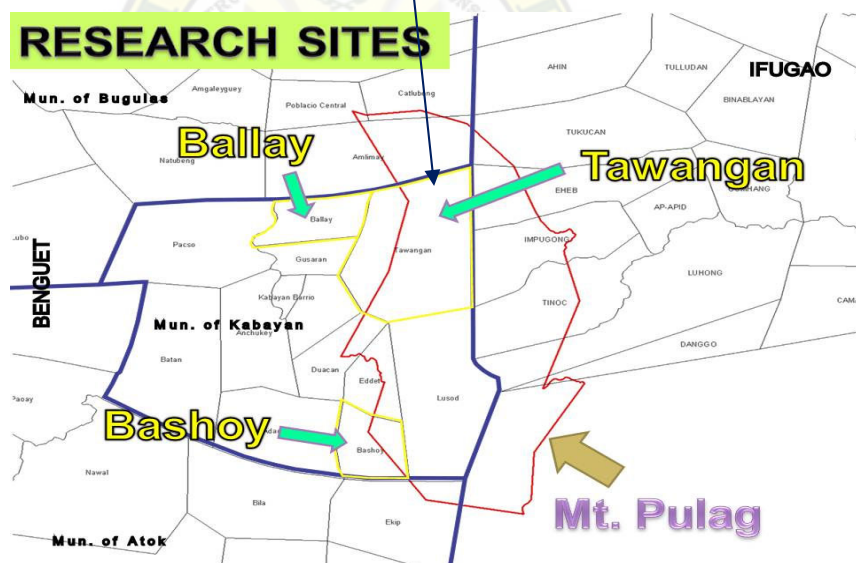
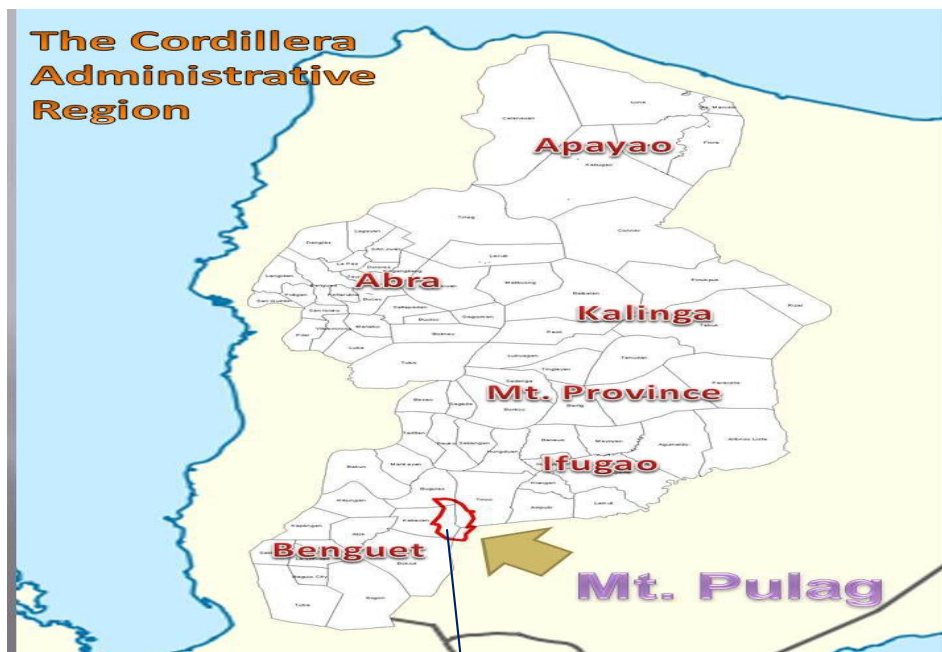


Figure 2: Map showing the location of the research sites found within the Mount Pulag National Park

The Mount Pulag National Park (MPNP) is an ideal site for the study because of its physical condition and the presence of indigenous people like the Kalanguya, Ibaloi, and Kankanaey. At the same time, several interventions are observed and implemented, believed to have influenced the expansion of the vegetable farms.

The Integrated Protected Area Plan (IPAP, 1994) presents a combined classification based on land use and vegetation as shown in Table 1.

Mt. Pulag National Park occurs in a narrow altitudinal zone where the atmospheric environment is characterized by persistent frequent or seasonal cloud cover at the vegetation level.

Table 1. Land Use and Areas of Mt. Pulag National Park, IPAP, 1990

LAND USE	AREA(hectares)	PERCENTAGE IN TERMS OF AREA COVERAGE
Pine Forest	2,047	17.72
Openland/ Grassland	804	6.96
Residential/ Cultivated	2,877	24.91
Mossy Forest	5,822	50.41
Total Area (MPNP)	11,550	100.00

Source: Integrated Protected Area Plan, 1990

In general, the Northern Luzon is characterized by heavy rainfall from June to November and dry weather from January to April (Climatic Type II). In Mt. Pulag, rainfall differs considerably in different parts of the Park. The eastern slopes are much more humid than the western slopes, with clouds covering the mossy forest most of the time, and there is no pronounced wet and dry season (Climatic Type III).

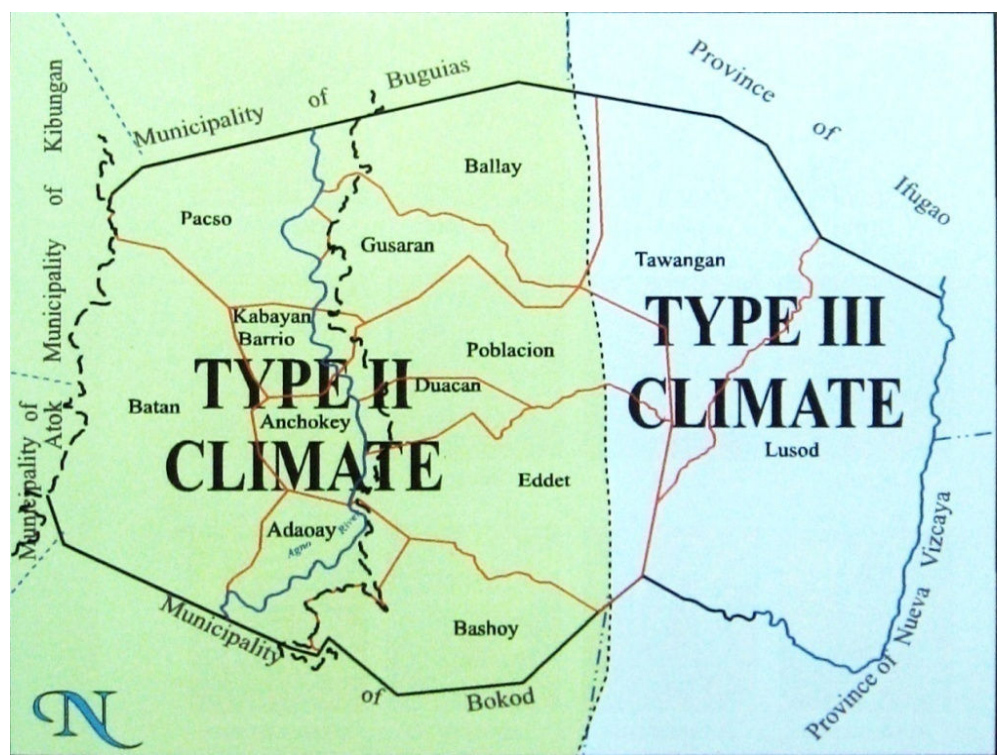


Figure 3. Climatic Map of Kabayan showing the barangays belonging to Type II and Type III Climatic Conditions. Kabayan CLUP, 2003

The clouds dissolve before they reach the drier areas in the western part of the Park. For the areas of study, barangays Ballay and Bashoy fall under Climatic Type II, while barangay Tawangan falls under Climatic Type III.

Respondents of the Study

There are thirty-nine (39) respondents identified as stakeholders of the Mt. Pulag National Park. Out of the 39 respondents, ten (10) farmers belong to the indigenous communities involved in vegetable farming, eight (8) municipal and barangay officials, six (6) Department of Environment and Natural Resources (DENR) officials, ten (10) members of the Protected Area Management Board (PAMB), five (5) officials from regional offices of the Department of Agriculture, the National Irrigation Administration (NIA), the National Power Corporation (NPC), Department of Agrarian Reform (DAR), and National Economic and Development Authority (NEDA)

Specifically, there were 32 males and 7 females. Eleven (11) respondents belong to the age bracket between 46 to 50 years old and ten (10) respondents belong to ages between 51 to 55 years old. The youngest respondent is 22 years old, male and working as labourer in one of the farms in Barangay Ballay and the oldest respondent is a 68 year

old, male and working as farmer and the community elder of the indigenous peoples in Barangay Bashoy.

Furthermore, majority of the respondents are farmers (10 or 25.64%) and local government officials (17 or 43.58%) from the barangay and municipal government units. The other respondents (8 or 20.51%) are regional, provincial, and municipal foresters, agriculturist and agrarian reform officers from the Department of Environment and Natural Resources, Department of Agriculture, and Department of Agrarian Reform.

On the other hand, other key informants were identified as managers (3 or 7.69%) who belong to top management of organizations working on the protection, conservation and management of the Mount Pulag National Park (Table 2).

Moreover, it was noted that the respondents are located in strategic areas around the national park and also municipal and provincial centers dealing with policy advocacy, program management and sectoral development like social, economic, ecological and political aspects.

Table 2. Profile of the Respondents

	N = 39	Percentage (%)
<u>Sex</u>		
Male	32	82.00
Female	7	18.00
<u>Age</u>		
Below 30 years	1	3.00
31 – 35 years	1	3.00
36 – 40 years	2	5.00
41 – 45 years	4	10.00
46 – 50 years	11	28.00
51 – 55 years	10	25.00
56 – 60 years	6	16.00
Above 61 years	4	10.00
<u>Occupation</u>		
Farmer/Trader	10	26.00
Local government official		
Barangay Level	7	18.00
Municipal Level	6	15.00
Agriculturist	1	3.00
Agrarian Reform Officer	1	3.00
Forester/Forest Ranger	6	15.00
Manager	8	20.00

The ten (10) farmers come from the three barangays; 4 farmers are from Ballay; 3 from Tawangan, and 3 three from Bashoy. All farmer-respondents have resided and cultivated the vegetable farms for more than fifteen years and at least three of them for more than 30 years as shown in Table 3.

Table 3. Locations of the respondents

	N = 39	Percentage (%)
Farmers		
Barangay Ballay	4	10.00
Barangay Tawangan	3	8.00
Barangay Bashoy	3	8.00
Local Government Officials		
Barangay Ballay	4	10.00
Barangay Tawangan	2	5.00
Barangay Bashoy	4	10.00
Barangay Duacan	1	3.00
Barangay Poblacion	6	15.00
Others (Foresters and Agriculturists Agrarian Reform Officers and Managers)		
Baguio City	8	20.00
Bokod, Benguet	1	3.00
Buguias, Benguet	1	3.00
Kayapa, Nueva Ecija	1	3.00
Lamut, Ifugao	1	3.00

Research Design and Research Methods Use

The study used complete qualitative methodology. Historical data and physical evidences were analyzed through the factors influencing the expansion of the vegetable farms. Also, the actions done by the stakeholders were described qualitatively which highlights the system, pattern and process of expansion.

Four research methods were used by the researcher to collect the

data in relation to the vegetable farm activities, operations and actions done to minimize the process of expansion particularly near and within the Mount Pulag National Park. The case of the Kalanguya tribe on vegetable farming is described along side the issues and concerns of the other key players and stakeholders.

These research methods are in-depth case study of the Kalanguya farmers, supported by key informant interviews, focus group discussions, participant observation, and photo documentation.

Case study. The Kalanguya tribe is the case that was studied in relation to the vegetable farming in the area. Historical documentation described by the Kalanguya farmers were recorded and analyzed based on the objectives identified. The case study described the different experiences of Kalanguya farmers as basis for the description of baseline information and further analyzed by the other respondents from the local government units (LGU), PAMB, DENR and the other government agencies.

Individual interviews. The individual interviews were conducted in the vegetable farms and residence of the farmers, wherever they were available at the time of visit. These were done in a random order in barangays Ballay, Tawangan, and Bashoy. Also, other interviews were administered to representatives of the government agencies and

municipal and barangay government officials in their respective offices. A checklist of questions was prepared to facilitate the interviews. The questions focused on the roles of the stakeholders towards sustainable management of the park.

Focus group discussions. In order to obtain other research data particularly on the protection, conservation and management of the national park, the Protected Area Management Board (PAMB) officials were encouraged to share and participate in a more detailed data gathering process concerning the Mount Pulag National Park. The FGD was attended by nine (9) members out of the fifteen (15) total members of the PAMB.

The FGD was included in the regular meeting of the PAMB scheduled on December 17, 2009. A letter of intent was addressed to the PAMB Chairman requesting for the inclusion of the FGD, to discuss the worsening state of the Mount Pulag National Park caused by the expansion of the vegetable farms.

During the December 17, 2009 PAMB meeting, the PAMB Chairman invited the researcher to explain the purpose of the study, and immediately conducted the FGD. The background of the study and expected outputs were discussed as part of the FGD process with the aid a power point presentation. The FGD was facilitated by the researcher

with three major questions. Answers to the three questions were written on the meta cards provided which were posted on a white board to further solicit and encourage reactions, insights, ideas, and comments specifically on the protection, conservation, management and concerns affecting the vegetable farm expansion in the park.

Responses and explanations were read and or written as short sentences using the local dialects such as Kalanguya, Kankana-ey, and Ibaloi. The documenter provided the translation after the FGD for better coding and analysis by the researcher.

Participant observation. Results of participant observation on the expansion of the vegetable farms in Mt. Pulag were done by the researcher when she was assigned at the Protected Areas, Wildlife and Coastal Zone Management Service of the DENR-CAR. Officially however, as an input to this study, the real observations were enhanced by photo documents and analysis. Other physical observations were done during the conduct of the study.

The observations noted were the physical changes within the area, and how the DENR and the local government units responded to the situation. During the course of the study, the researcher was able to observe actions from a multi-agency forest protection committee called the Quick Response Team, which was initially organized by the DENR to

respond to the growing concern on land use conversion of forests into vegetable farms in Benguet, Ifugao and Mt. Province. These observations were further complimented by DENR reports, press releases and LGU records and documents.

Data Gathering, Analysis and Interpretation

Data gathering was facilitated through letter requests to the Municipal Mayor and the Regional Executive Director of DENR-CAR seeking permission for the conduct of interviews and focus group discussions. Both heads of offices from the LGU and DENR approved the requests, thus the activities were conducted smoothly.

The data gathered were analyzed and interpreted to come up with comparative findings which were further analyzed to provide conclusive and appropriate actions and recommendations.

RESULTS AND DISCUSSION

The Kalanguya Tribe and Their Vegetable Farms

Vegetable farms found at the slopes and within the Mount Pulag National Park provide a systematic operation of the indigenous peoples inhabiting the area. The results were obtained from a case of Kalanguya farmers who started cultivating vegetable farms at Mount Pulag as early as 1900's.

The emerging concern on the expansion of vegetable farms is described and analyzed in detail to show relationship of environmental resource management analysis and perspective of community development of the Kalanguya farmers.

As part of a fast growing tribe, Kalanguya farmers were cooperative to deal with. They shared testimonies that provide information to describe their present system of vegetable farming in barangays Ballay, Bashoy and Tawangan.

Before the expansion of the vegetable farms within the Mount Pulag National Park (MPNP), the Kalanguya rely mostly on the natural resources of Mt. Pulag for food, shelter and clothing. It was so abundant then that the indigenous peoples (IPs) only take what they need and maintain a balance with nature. Through time, more and more hunting and

gathering activities were done that led to the decrease of food like fruits, root crops, and animals including fuel wood and raw materials coming from the forests. As these progressed, the indigenous peoples explored, cleared lands and started cultivating (Fred Aguinse, Community Elder, Personal Interview, 2009).

According to Conklin (1998), this practice is called swidden farming system or 'slash and burn' or locally termed as 'kaingin.'

The practice was first noted in the dwelling place of the Kalanguya tribe with no defined boundaries in barangays Ballay, Tawangan and Bashoy, Kabayan, Benguet at the slopes of Mount Pulag.

The Kalanguyas are culturally-based on ancestral beliefs, their local resources emanating from blessings from their gods and ancestors who inhabit the sacred grounds of Mt. Pulag. They trace their origin to Kabigat and Bagan who lived in the summit of Mt. Pulag. They had thirteen descendants, some of which dispersed and settled in Benguet, La Union and Ifugao. However, most of them remained in the surroundings of Mt. Pulag, particularly in Daklanto, now called Tawangan. The present-day Kalanguya in Tawangan traces his/her ancestry to Amduyan, one among the descendants of Kabigat. The barangays found inside the Mt. Pulag National Park are predominantly inhabited by the Kalanguya tribe.

In a study conducted by Pastor Delbert Rice (1982) about the history of the Kalanguya, he traced the Kalanguya people on the slopes of Mt. Pulag during the Spanish conquest. He related that by the end of the Spanish colonial rule, the group of Kalanguyas at the slopes of Mt. Pulag began to move southward, settling in the Kayapa valley. Accordingly, the migration was triggered by several factors including a) an epidemic of small pox which they called "*bungkellow*" that caused residents to flee Ambaguio, Nueva Viscaya, and Asipulo, Ifugao and areas close to the boundary of Benguet and Ifugao, b) tribal wars, and c) head hunting.

Pastor Rice further wrote that the Kalanguya were looking for more fertile areas and new hunting grounds. However, there were some of the members of the tribe, together with other Kankana-ey and Ibaloi, who chose to return to their former settlement in Tinoc, located in the region of Mt. Pulag.

These Kalanguya tribe members are believed by Martina Panas to be her ancestors, their descendants moving to Ballay because of another epidemic that hit Tinoc in the early 20th century.

The Kalanguya inhabit three municipalities of Nueva Vizcaya, namely Ambaguio, Kayapa and Santa Fe and two municipalities in Ifugao, Tinoc and Asipulo. In Benguet, four barangays of Kabayan are predominantly Kalanguya. Of the four barangays, three are the study sites

of this research, namely Ballay, Tawangan and Bashoy. The composition of the Indigenous Peoples in the Mount Pulag national Park is presented in the pie graph (Figure 4).

Based on a study conducted by the IWM-DFI in 1993, the survey shows that in Mt. Pulag, the Kalanguya has the greatest composition of 77% followed by the Ibaloi with 20% and other ethnic groups (Karaos and Kankana-eyes) composing of 3%.

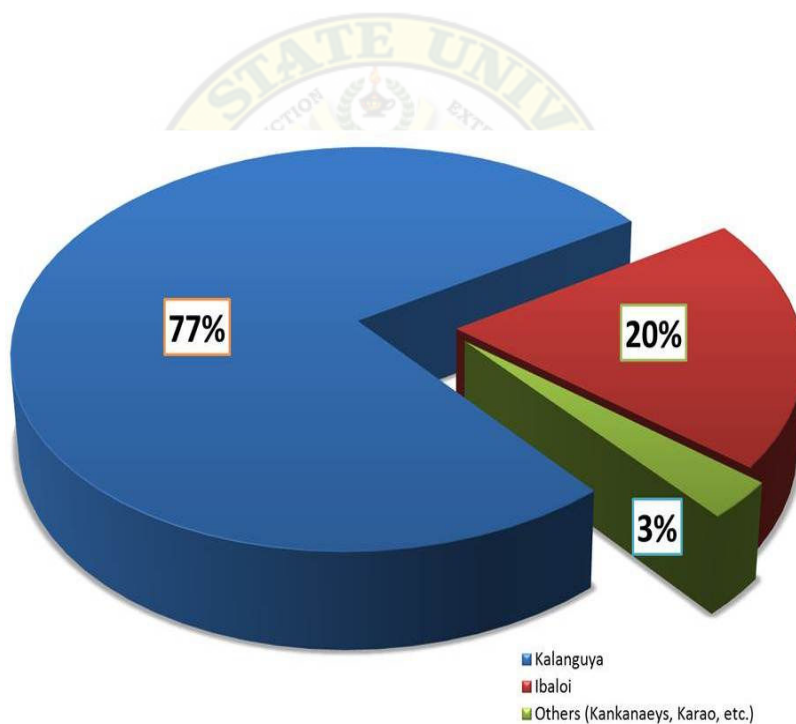


Figure 4. The composition of Indigenous Peoples in the Mt. Pulag National Park. (RBI, 1990)

The barangays found inside the Mt. Pulag National Park are predominantly inhabited by the Kalanguya tribe. Although Ibalois are dominant in the municipality of Kabayan, only a few are found inside the Park. The greater number of Ibalois is found in barangays adjacent to and outside the Park. The Kankana-eyes inhabit barangays Amlimay and Catlubong of Buguias found inside the Park, and a few have migrated to Ballay, Bashoy and Tawangan during the last two decades.

The farmer-respondents are 80% Kalanguya and 75% of them were born in Mt. Pulag as descendants of Kalanguya generations who settled in Mt. Pulag during the early 20th century. The remaining 25% stayed at least an average of 25 years inside Mt. Pulag.

In the 1900's the Kalanguya vegetable farms started. They practiced swidden farming system or the "kaingin". According to Conklin (1954) and Garrity (2001), swidden farming system is an agricultural system in which the fields are cleared (usually by fire) and cultivated for shorter periods then they are fallowed. Farm operations follow by planting upland rice, root crops, legumes and some fruit trees.

Because of the nomadic behavior of the Kalanguya, they opened areas in the slopes and of Mt. Pulag. These are called swidden fields, *uma* and family forests locally called *kiy-yaw-wan* or *muyong* which were transferred and inherited by the next generation of Kalanguyas.

Traditionally, an *uma* or *inum-an* is cultivated for two or three years and then left to fallow. Abandonment of an area depends on the quantity and quality of harvest from the *uma*. If the Kalanguya is not satisfied with the harvest, he will immediately abandon it and let it fallow. But if the harvest is good, then cropping continues.

Fallowing among the Kalanguya is usually done for five to seven years, then the *uma* can be cultivated again. The Kalanguya plants trees during the first year of cropping, so that when he leaves, the trees indicate that an area is in fallow and also serve as symbol of ownership of the land.

The family who first cleared the area has the option to use the field and other families who wish to cultivate it must first ask permission. It is now the practice for some families to make improvements such as building stonewalls (riprap) across the slopes of the *uma* to prevent soil erosion and planting fruit and shade trees including avocado, pomelo, alnus, and pine trees.

Rice fields are the most important inheritance or "*tawid*", a Kalanguya, Ibaloi or Kankana-ey can bequeath to the children. For parents who own rice fields, their children must be given inheritance upon marriage as a way of helping them start their own families. Families with rice fields protect and maintain forested areas called *kij-yaw-an* or *muyong* which are the source of water for the rice paddies.

Furthermore, when the rice fields surrounding the forested areas are passed on to the children, they all become responsible for the *muyong*. Barangay Elder and PAMB member Fred Aguinse explained that the responsibility of sustaining the *muyong* for years was eventually interpreted and accepted by the Kalanguyas to mean ownership over these areas (Personal Interview, 2009).

He further stated that the developments implemented by the children who inherited the *uma*, as stonewalls or farm shacks built, fencing and trees planted were recognized by the municipal assessor as improvements and became basis for tax declaration.



Plate 1. New clearings in the mossy forest in Tabeyo
June 02, 2009

He further pointed out that these *uma* and *muyong* or *kiy-yaw-an* are slowly being converted to vegetable farms due to the hardships of life encountered these days.

Consequently, Martina Panas relates that she inherited the original vegetable farms of about a hectare from her parents which she and her husband farmed after they got married. However, after the births of her eight children, the area was just not enough, so they had to expand their one hectare farm into another hectare towards the forest. In 2008, they had to expand again because her children got married (Personal Interview, 2009).

On the other hand, Rudy Guinoran shared that he did not inherit any *uma* or *kiyaw-wan*. His parents were migrants who did not have *uma* or lands of their own. Instead, they bought a small piece of land to till. It was noted that the land was not enough to support Rudy's new family too. As a consequence, he transferred his residence from Lebeng to Babadak where he cleared and opened new area (Personal Interview, 2009).

The following table presents a historical timeline of events and activities that affected directly or indirectly the expansion of vegetable farms in the Mt. Pulag National Park.

Table 4. Historical events and activities that occurred in relation to vegetable farming in the Mt. Pulag National Park (Derived from document analysis, 1950-2009, DENR Reports)

DATE	HISTORICAL EVENTS AND ACTIVITIES
Spanish Conquest	Kalanguyas established themselves on the slopes of Mt. Pulag
End of Spanish Colonial Rule	Kalanguyas in Mt. Pulag moved southward and settled in Kayapa Valley due to epidemic (small pox, “bungkellew”), tribal wars and head hunting.
1935 – 1988	BCI Logging Operations in Bashoy, Kabayan (Operations stopped during World War II, then resumed)
1987	Proclamation of Mt. Pulag as a National Park under Proclamation 75 dated February, 1987. The signing of the proclamation required organizational support by dispatching Forest Rangers and Designated Officers
1990	Preparation of a Management Plan that led to the funding of the park under the Debt-for-Nature Swap Program (DFNSP) that was financed by the World Wildlife Fund (WWF).
1991	<ul style="list-style-type: none"> • Construction of the Babadak Ranger Station at Mt. Pulag National Park, Bashoy, Kabayan, Benguet • 5 Certificate of Ancestral Land Claims (CALCs) issued by DENR in Tawangan and Lusod with an area of 5,343 hectares.
1992	Approval of the RA 7586 or the National Integrated Protected Area System Act

Table 4. Continued . . .

DATE	HISTORICAL EVENTS AND ACTIVITIES
1993	Preparation and implementation of the Implementing Rules and Regulations of RA 7586 or the National Integrated Protected Area System Act
1994	Issuance of Certificate of Land Ownership Agreement (CLOA) by DAR with an area of 1,022 hectares in Tawangan
1995	<ul style="list-style-type: none"> • Last Quarter of the year, Funding of the park coming from the European Union through the National Integrated Protected Area Programme (NIPAP); • Hiring of 4 contractual staff under the NIPAP to include forest rangers. • Protected Area Superintendent (PASu) and Assistant PASu in place. • Opening –up of the Ballay-Tawangan Road, Bulldozing of the LGU project
1985-1990	<p>Presence of NPA within Mt. Pulag No patrolling, extensive expansion. Voluminous increase in vegetable products within Mt. Pulag.</p>
1996	Issuance of Certificate of Ancestral Domain Claims (CADC) covering barangays within Mt. Pulag, by NCIP

Table 4. Continued . . .

DATE	HISTORICAL EVENTS AND ACTIVITIES
2000	Construction of a Protected Area Office (PAO) through the European Union Fund-NIPAP in Ambangeg, Daclan, Bokod, Benguet;
2001	The Protected Area Management Board (PAMB) approved the first Work and Financial Plan of Mt. Pulag National Park for its eventual implementation with funds coming from the Integrated Protected Area Fund (IPAF). This included the hiring of contractual park rangers to help in the management of the park. The utilization of the fund is a breakthrough in the park management as site-based forest rangers and personnel were hired to conduct protection activities and implement ecotourism.
2008	Revision of the Implementing Rules and Regulations of the NIPAS Act of 1992, to adjust and harmonize provisions with the IPRA Law.
2009	Vegetable farm expansion in the Mt. Pulag National Park persists.

Factors Influencing the Expansion of Vegetable Farms

Poverty

Most of the farmers interviewed said that the vegetable farms in Mt. Pulag are persistently expanding because of poverty. The FGD with the PAMB also points out that the most basic factor influencing vegetable expansion is low economic status of the Indigenous Peoples inside the park.

When Martina and Rudy were children, they relate that their needs were satisfied by the *uma* and vegetable farms their parents were farming, and the bounties provided by nature. The staple food of the Kalanguya then was sweet potato harvested from their *uma*.

Today, they have to send their children to school, which requires money. Sweet potato production is just not enough anymore because all the *uma* were converted into vegetable farms. When the price of vegetables goes very low, “bagsak” as the farmers call it, the children will have nothing to eat. If this happens, Martina and Rudy avail of credit, in cash or in kind for rice, fertilizers, seeds and other farm inputs provided by the suppliers from the Baguio City Hangar market or the “baknang” (rich people) as they call them. With the adverse fluctuating prices of vegetables, Martina laments that vegetable farming has put them into bad

dept which accumulated through continuous farming and poor vegetable pricing.

In another note, the local financiers are the moneyed people called “baknang”. They provide cash or material inputs. Some identified middlemen also loan out capital in cash or in kind for the farmers, provided that the vegetables harvested are brought to their stall at the La Trinidad trading post or Baguio City market.

This system of entrepreneurship among middlemen in the market, has actually contributed to the clearing and opening of wider areas for vegetable farms, as stated in the case of Manong Rudy. He relates that even those who have no capital are confident in clearing new areas because the farm inputs are available, even to include rice subsistence until harvest time.

The Sanguniang Bayan Chairperson on Committee on Environment, Hon. Dorothea Sental (Personal Interview, 2009) said that the main reason behind the conversion of the National Park into vegetable farms is because of poverty, there being no other source of income in the communities. She explained that as a way of contributing to the economic condition of the farming communities, the LGU has started programs on ecotourism where guides and porters are hired, and local products are promoted, including the vegetables harvested from their farms. She is

hopeful that in the future, the LGU will develop other livelihood activities from ecotourism, especially for the women group.

The Municipal Planning and Development Coordinator, Engr. Berry Sangao (Personal Interview, 2009) stated that the annual planning process of the LGU always takes into consideration the welfare of the Mt. Pulag National Park. Plans, programs and budget for the welfare of the Park are recommended by the PAMB, the Environment Committee, Peace and Order Committee and the barangays. He admitted, however, that protection of the forest from conversion into vegetable farms has not been specifically, included in their plans. However, programs to deviate the communities from the land use conversion were considered through livelihood and ecotourism programs.

Alfredo, a farmer from Tawangan said, “if the government will drive us away from our vegetable farms which are our only land and source of living, we will die because we have nowhere else to go” (Personal Interview 2009).

Based on the case of Kalanguya vegetable farming in the Mt. Pulag National Park, Table 5 shows the factors affecting the expansion of the vegetable farms. These were derived from the interviews and the FGD.

Accordingly, poverty and lack of alternative livelihood is ranked 1 because the indigenous people believed that there is no alternative work

provided in the community. This is manifested by the continuous vegetable farming operation in the area.

In support to this, the unclear boundaries, cultural belief and practices of the people and community rank 2nd and 3rd, respectively. Based on this, the respondents noted that these are intertwined and related according to the contributory factors in the expansion of the vegetable farms.

However, one point identified was the laxity in implementation of policies and rules and regulations on the protection and management of the Mount Pulag National Park. This means that even with the presence of these laws, it was hardly convincing that these helped mitigate expansion. As a consequence, the indigenous people believe that they are traditionally responsible for the management of the natural resources in the national park.

Table 5. Ranking of the factors influencing the expansion of vegetable farms in the Mt. Pulag National Park.

FACTORS	RANK (Based on frequency of answers from respondents)
Poverty/ Lack of alternative livelihood resulting to poor economic status of households.	1
Increasing population and Migration	4
Low knowledge of the community / farmers of the Laws governing Forests and National Parks.	6
Leniency/ laxity in the enforcement of laws, policies, and regulations governing forests and protected areas and national parks.	5
No clear boundaries.	2
Cultural belief and practices on land ownership/ Ancestral claims.	3
Presence of New Peoples' Army	11
Availability of suppliers/loans.	9
Availability of heavy equipment /machinery that facilitates clearing.	7
Suitability of mossy forest for vegetable farming; low fertilizer and water inputs.	10
Opening-up of roads/ farm-to-market roads.	8

No Clear Boundaries

In spite of the fact that vegetable farms already existed in 1987, prior to the declaration of Mt. Pulag as a National Park, Manong Rudy (Personal Interview 2009) says that there was no ground delineation or markers to indicate boundaries of the Park. He was aware that it was declared as such. However until now that he has been tilling his vegetable farm for more than twenty years, he still does not know where the boundary of the Park ends or starts. He now has nine children, a widower, and accordingly, more than ever needs the land to support his family.

He requests that the boundary delineation be done and to exclude their vegetable farms from the coverage of the park. This request is supported by the Municipal Mayor, Hon. Faustino Aquisan when he emphasized the need to survey all the existing vegetable gardens within the park, this as a way to mitigate the expansion of the vegetable farms. He requested that this should be done collaboratively with the DENR, LGU and the PAMB. He explained that since the farmers cannot be evicted from their farms, then we should allow them to till what they are tilling now, but definitely, there should be no more expansion. This will be implemented in accordance with the ground markers that should be installed by the DENR. The Mayor said it is not too late to protect what remains of Mt. Pulag National Park, at the same time giving way to the

clamor of the farmers to continue with vegetable farming as their livelihood.

Sanguniang Bayan Senforiano Busilag, who is also a member of the PAMB said that the farmers clamor for the boundary to be relocated higher into the mountain, in order to accommodate their newly opened farms. However, he is not in favor of this, specifically for those lands bought by individuals who came from adjacent municipalities and are newly operated (Personal Interview, 2009).

The Municipal Planning and Development Officer of Bokod, Engr. Pancho Esnara (Personal Interview, 2009) also claims that the best way to solve the problem of expansion is to delineate the boundary on the ground and establish visible monuments which must be done the soonest possible time.

Still three of the farmers said that they have encroached into the mossy forest because there is no demarcation of the National Park on the ground, thereby they did not know that they were encroaching.

The idea is the same with PAMB Lope Atas' comment when he said that there should be "mohon" or markers established to clearly and publicly show the boundary line of the National Park. If this is shown, all the members of the community will be vigilant to expansion (Personal Interview, 2009).

In addition, another farmer from Ballay stated that he bought his land from his nephew, not knowing that the area is inside the national park. He said, once the “mohon” or marker will be in place, they will know the boundary and will not encroach. As observed, this is a good indicator which means that the people accept the declaration of the area as a Protected Area and a National Park, provided the markers are there to indicate the boundaries.

The non-delineated boundary of the National Park creates an impression of “free access” as their ancestral claim.

One of the farmers interviewed said that once the boundary of the Park is delineated and markers are installed, they will stop expanding beyond the markers. This was also supported by the PAMB when they said that one way of mitigating the problem is to install markers along the boundary of the Park. However, there is the concern of allowing the existing gardens to be delineated as part of the Park, or acquiesce to the clamor of the farmers to exclude it during the final survey.

A farmer in Ballay pointed out that their children have nowhere to go, if the government will drive them away from the Park. However, Mayor Aquisan said in his interview that one way to solve the problem is to let the farmers farm their existing farms but delineate the remaining area of the Park on

the ground, and there shall be no more encroachment beyond the markers.

As Punong Barangay and a member of the PAMB, Manong Rudy claims that there are no more new openings in their area because it is prohibited by DENR. He says that they have to make do of their existing farms.

However, the photo below shows the slow expansion of the vegetable farms in Ballay, this part of which is clearly inside the Park. Patches of clearings are slowly inching their way higher into the mossy forest of the Park.



Plate 2. Gardens slowly inching their way upwards.
Border between Ballay, Kabayan & Amlimay,
Buguias, Benguet (June 02, 2009)



Plate 3. A mossy forest in Bally slowly being replaced by vegetable farms. (June 02, 2009)

The BMS report in May 2003 states that there is cultivation of abandoned agricultural areas observed along the Uleg-aki trail in Tabeyo. In September of the same year, the BMS report states again that there is an intention of occupants to re-cultivate an area of the protected area along the same trail, as indicated by a burned portion. Likewise, the same BMS team observed two patches of new clearings along the trail towards Tawangan.

Cultural Belief and Practices on Land Ownership

The indigenous system of land ownership influences and to some extent dictates how land and other resources are utilized in the park. The Cordillera communities believe that God created land, forest, water, minerals, and all other resources. These resources are believed to be for everybody in the community; people have the rightful access to these resources. Access to these resources is a right handed from generation to generation. The communities within and around Mt. Pulag know that it is a declared National Park. However, they claim that they have been there since time immemorial. Therefore, they have the right to the resources inside the Park. In spite of this however, some local residents respect park regulations on protection and management of resources.

Ownership of the land is believed by the Kalanguyas as handed down to them from one generation to another. This is recognized by the IPRA Law, and thru the NCIP, the government has awarded ancestral domain claims to indigenous peoples including the Kalanguyas found within Mt. Pulag.

Based on interviews, the Kalanguya farmers believe in their land ownership through ancestral claims. Although the three barangays covered by the study site is not part of the Certificate of Ancestral domain Claim (CADC), these Kalanguyas in barangays Ballay, Tawangan and

Bashoy still believe that their land was owned by their ancestors.

This belief in ownership, strengthened by their information about the IPRA Law, has encouraged them to sell and apply for tax declarations over the areas. At least two of the farmers claim that they have bought their lots from relatives.

Furthermore, it was observed that the “buy and sell” system of land indicates their perception of land ownership, which is based on their indigenous occupancy over the years.

On the other hand, it was noted that several burial caves are found in the municipality of Kabayan particularly in Tawangan. These are located in Bato mountain, Halukip and Manlusod, all found inside the park. These burial caves contain remains believed to be the ancestors of their Kailian. The Kalanguya consider the burial caves as sacred sites which should not be disturbed.

Population Growth

The municipality of Kabayan started as a municipality with only 22 people registered in 1903. There was a significant increase of population in 1918 (15 years later) with an absolute change of 2,819. This population rose to 4,190 in 1939 but decreased by 385 during the census after World War II. By 1960, however, the population rose to 5,869. In the year 2000,

it has reached a total of 12,344. The 97-year (1903-2000) population trend was pegged at 2.83% annually and current annual growth rate (1995-2000) was 3.22% as shown in Table 6.

Table 6. Historical Population Growth by Linear Method.
Kabayan, Benguet (1903 – 2000)

Censal Period	Population	Absolute Change	No. of Years	Growth Rate by Linear Method (%)
March 3, 1903	22			
December 31, 1918	2,841	2,819	15	854.2424
January 1, 1939	4,190	1,349	21	2.2611
October 1, 1948	3,805	-385	9	-1.0209
February 15, 1960	5,869	-1,247	12	4.5204
May 6, 1970	7,116	1,147	10	2.1247
May 1, 1975	8,363	1,247	5	3.5048
May 1, 1980	9,072	708	5	1.6956
May 1, 1990	10,306	1,234	10	1.3602
September 1, 1995	10,510	204	5	0.3959
May 1, 2000	12,344	1,834	5	3.4900
1903-2000	-----	12,322	97	577.4133

Source: Comprehensive Land Use Plan (CLUP), 2003-2012, Kabayan

The Kabayan Municipal Comprehensive Land Use Plan (CLUP, 2003-2012) presents that there is increasing growth rate in the municipality over the years. In the Mt. Pulag National Park and specifically within the study site, Tables 7 and 8 below also present that there is significant increase in population growth rate in the barangays, specifically in 1995-2000, the annual average growth rate for barangays Ballay, Bashoy and Tawangan are 2.63%, 2.39% and 0.23% respectively.

Table 7. Demographic progression in five municipalities encompassing portions of the Mt. Pulag National Park.

Municipality and Province	Total Population 1970 POPCEN	Total Population 1980 POPCEN	Total Population 1990 POPCEN	Total Population 1995 POPCEN
Philippines	36,684,486	48,098,460	60,703,206	68,614,162
Benguet	263,550	354,751	485,546	540,716
Nueva Vizcaya	172,198	241,690	301,179	334,965
Ifugao	92,487	111,368	147,281	149,598
Kabayan	7,257	9,763	10,306	10,510
Buguias	12,349	17,509	25,236	28,031
Bokod	10,059	11,899	11,474	10,526
Kayapa	14,920	20,491	18,685	19,376
Tinoc	-	-	8,256	9,504

Source: Mt. Pulag RBI, 1994

The increase in the number of members of the households has a direct effect on the expansion of vegetable farms. Particularly in the three barangay study sites, the significant increase in population as pointed out in the Comprehensive Land Use Plan (CLUP), has contributed to the expansion of vegetable farms.

Table 8. Annual Average Growth Rates in the municipalities and barangays within and nearby Mount Pulag National Park

Municipality	Barangay	Population			Annual average growth rate	
		1980	1990	1995	1980-1990	1990-1995
Kabayan	Total	9,763	10,306	10,510	0.54 %	0.37%
	Ballay	951	1,435	1,648	4.20 %	2.63 %
	Bashoy	705	931	1,056	2.82 %	2.39 %
	Tawangang	437	558	565	2.47%	0.23 %
	Adaoay	539	521	479	-0.34 %	-1.56 %
	Anchukey	270	259	285	-0.42 %	1.81 %
	Batan	1,106	1,092	951	-0.13 %	-2.56 %
	Duacan	539	528	539	-0.31 %	0.39 %
	Eddet	400	445	519	1.07 %	2.93 %
	Gusaran	786	1,050	1,051	2.94 %	0.02 %
	Kabayan	292	322	336	0.98 %	0.80 %
	Bario					
	Lusod	1,006	815	881	-2.08 %	1.47 %
	Pacso	1,026	1,024	949	-0.02 %	-1.42 %
Poblacion	1,706	1,326	1,251	-2.49 %	-1.09 %	
Buguias	Total	17,509	25,236	28,031	3.72 %	1.99 %
	Abatan	1,939	2,244	1,800	1.47 %	-4.05 %
	Amgaleygey	2,157	3,780	2,485	5.77 %	-7.56 %
	Amlimay	1,208	1,706	1,858	3.51 %	1.61 %
	Catlubong	713	1,094	1,600	4.37 %	7.39 %
	Natubleng	1,313	1,896	2,107	3.74 %	2.00 %
	Poblacion	1,789	1,652	2,807	3.53 %	1.96 %

Table 8. Continued . . .

Municipality	Barangay	Population			Annual average growth rate	
		1980	1990	1995	1980-1990	1990-1995
Bokod	Total	11,899	11,474	10,526	-0.36 %	-1.60 %
	Ambuclao	2,610	2,892	2,199	1.03 %	-5.01 %
	Bila	929	1,003	975	0.77 %	-0.53 %
	Daclan	1,240	1,354	1,401	0.88 %	0.64 %
	Ekip	496	720	784	3.80 %	1.61 %
	Karao	804	853	837	0.59 %	-0.35 %
	Poblacion	1,625	1,652	1,455	0.16 %	-2.35 %
Kayapa	Balete	948	1,060	702	1.12 %	-7.44 %
	Cabayo	792	797	1,645	0.06 %	14.55 %
Tinoc	Impugong	0	644	851	-	5.36 %
	Luhong	0	775	1,631	-	14.97 %
Grand Total		40,911	50,292	53,896	2.09 %	1.31 %

Source: NSO, POPCEN 1980, 1990 and 1995 Elaboration by NIPAP

Table 9 shows that the population density in barangays Ballay and Bashoy is relatively high compared to Tawangan and Poblacion. With this situation, there is still possibility for expansion both for livelihood and residential, to expand not elsewhere but into the forest.

Table 9. Population density of barangays within/ nearby Mt. Pulag National Park (NSO, 1995)

Barangays	Total Population	Total No. of Households	Average no. per h.h.	Land area sq. km.	Population Density (inh/km ²)
Ballay	1,648	278	5.93	22.57	73.02
Bashoy	1,056	185	5.71	17.29	61.08
Tawangan	565	91	6.21	35.04	16.12
Poblacion	1,251	234	5.35	22.52	55.55

Migration

The migration of farmers from adjacent barangays and municipalities, is adding-up to the increase in population. These migrants enter the park as laborers or as new “owners” of areas bought for vegetable farming.

Migration into the Mt. Pulag National Park started with the coming of the Kalanguyas from Tinoc because of an epidemic that attacked the town during the early part of the 20th century (RBI, 1990). Seven decades later, other tribes like the Kankana-eyes and more Kalanguyas from adjacent municipalities started coming for the same reason, the rich natural resources of Mt. Pulag, particularly the forests that can be cleared and opened into vegetable farms.

When the New Peoples Army (NPA) established their route to and from nearby provinces of Benguet via Ifugao and Nueva Viscaya en route the Mt. Pulag forests, forest rangers stopped patrolling activities within the Park. The Kalanguyas from Balete in Nueva Viscaya, who had relatives in Bashoy, saw the opportunity for a livelihood. According to Manong Rudy (Personal Interview, 2009), it was at this time that they bought lands (believed by the indigenous Kalanguya Tribe to belong to them) in Bashoy and also joined in the vegetable farming.

As a consequence, the presence of the New Peoples Army in the forests of Mt. Pulag, stopped the monitoring activities of BCI and DENR forest rangers and increased the clearing of new areas by migrants who bought lands inside and adjacent to the park.

In July 2000, the DENR – BMS reported that large tracks of mossy forest starting from Babadak to Teltelpok have already been converted into vegetable farms which are planted with different cash crops. In a way, this is the kind of land expansion done by the Kalanguya.

It was also at this time that the vegetable products from Mt. Pulag started to increase in volume, and continued to do so enormously by the early 1990s.

By comparison, the Kankanaey farmers in Ballay came from the nearby municipality of Buguias, a municipality engaged in intensive

vegetable farming as the major source of income. The saturation of vegetable farms in their municipality forced them to buy areas in nearby Ballay, Tawangan and Bashoy, Kabayan to use for intensive vegetable farming. With the years of experience in vegetable farming and the cheaper lands in Mt. Pulag, this resulted to the clearing of mossy forests with conditions that require lesser fertilizer and water inputs (Kagawad Busilag, Personal Interview, 2009).

Antonio Pedro from the municipality of Buguias married and finally settled in Ballay. He says that originally, he and his wife farmed a portion of land belonging to his wife's father, but later on had to expand because their family was growing, and the children had to go to school. They bought a lot from his wife's relatives to add up to their original farm lot (Personal Interview, 2009).

Antonio's brother, Jacinto, went to work for him when he was still a teenager. Eventually, he married a Kalanguya, and also bought a lot from the locality to operate as a vegetable farm for his new family. The legality of buying and owning a lot inside the National Park was not an issue at that time for Antonio and his brother. They believed that the lots sold to them were owned by the Kalanguyas; and therefore, they had the right to sell. This situation was supported by the Quick Response Team Report

(2008) when they included among one of their concerns, the wrong perception of the communities of the IPRA Law on land resource ownership.

Low knowledge of farmers and the community
of the laws governing forests and national parks

Mrs. Panas stated that her relatives and neighbors sold lands that are part of the forests to other relatives and farmers from Buguias. Another farmer said he bought his land from his nephew. Mr. Guinoran said that people from Viscaya who had relatives in Bashoy migrated and bought lands that are part of the forestland for vegetable farming. These are all because those who sold and those who bought are not aware of the law (PD 705, The Forestry Code of the Philippines) that prohibits the sale of forestlands, or the use of it for agricultural purposes.

Mr. Guinoran related how his father was bailed from arrest by giving up his Tax Declarations for a parcel of land within the Mt. Pulag National park. Another farmer stated that he tax declared his vegetable farm 40 years ago.

The claims stated by the farmers are prohibited by law. This is because PD 705 again states that forestlands cannot be Tax Declared.

Leniency/ laxity in the enforcement of
laws, policies, and regulations governing
forests, protected areas and national parks

The issuance of Tax Declarations within Protected Areas (LGU) is prohibited by law, and yet Municipal LGUs continue to issue them. With the knowledge that Tax Declarations are proofs of ownership, the community opted to tax declare their areas, even if it meant paying minimal taxes. Even after the growing concern of the expansion of the vegetable gardens, there was no action to correct the illegality. The Tax Declarations of areas inside the Park should have been cancelled.

There is implementation of infrastructure projects inside the Protected Area without community consultation and without permit or Environment Compliance Certificate (ECC) by LGU and concerned Government Agencies).

The Quick Response Team Workshop Output in 2008 states that all previous cases within Mt. Pulag National Park jurisdiction have been dismissed for lack of evidence and lack of witnesses. The cases were all violations to the Presidential Decree 705, the Forestry Code of the Philippines, to include illegal cutting of trees for lumber and clearing of the forest for expansion of vegetable farms. The Quick Response Team

included as one of their functions, to assist in the preparation of legal documents for cases to be filed.

Availability of heavy equipment and machinery that facilitates clearing

The availability of chainsaw, bulldozers and backhoes in the park was identified as a factor that influences the expansion of vegetable farms. The Quick Response Team has acknowledged this in their workshop and various reports as a concern that needs to be addressed immediately through policy issuances by local as well as national counterparts. The regulation of the chainsaw is already covered by the Chainsaw Act however the strict implementation of this law is needed in the Mt. Pulag National Park.

Opening of roads/ farm-to-market roads

The opening of new roads and farm-to-market roads as well as other government projects in the park as irrigation, has facilitated the expansion of the vegetable farms.

The testimonies discussed previously, witnessed that the opening of the Poblacion-Ballay Road, the Ballay-Tawangan Road, the Tawangan-Tinoc Road, and even the road opened-up by the BCI from Bokod to

Babadak, has very much facilitated the expansion of the vegetable farms within these areas.

A PAMB member said that the opening of the Tawangan-Tinoc road (project of Congressman Chungalao, Kalipi Project) has facilitated the destruction of the forest and the expansion of vegetable farms. He questions how this project was implemented by the government, destroying the mossy forests and opening-up roads for land conversion and illegal logging. This is supported by the Biodiversity Monitoring System (BMS) Data of the Protected Area, Wildlife and Coastal Zone Management Service of the DENR when it said in its June 26, 2000 report, that the opening-up of an access road in Tawangan has led to exacerbated exploitation of the natural resources, and destruction of biodiversity habitat. Thus, the report states that this area has been chosen as a monitoring area for the BMS.

One of the PAMB members said that the deforestation and farming activities are done because of lack of monitoring from concerned government agencies. The PAMB Chairman agreed to this and said that the constant presence of the DENR may help solve the problem.

The Protected Area Superintendent said during the emergency PAMB meeting (March 15, 2010), “developmental projects are killing the park”, this she stated in response to the agenda of permits given by the

PAMB to NGOs, donors, and other entities for projects to be implemented inside the park.

Availability of suppliers who give loans

Suppliers are available to give loans, making the lucrative vegetable industry alluring to farmers.

When vegetable price is high, and continuous to be high for a time, the farmers experience the feeling of need to expand the areas they are farming, and more of the forestlands are opened-up. One of the farmers stated that new gardens sprout after farmers sell their products at high market price. This “tama” experience of the farmer moves him to open a new area.

Manong Rudy (Personal Interview, 2009) relates that when price is low, the supplier is always available to give credit in cash or in kind, and provide rice subsidy until harvest time. All in all, the payment for vegetables when bought also by the supplier is almost equal to the farmer’s loan and the rice consumption. At times, even the hire of the bulldozer is handled by the supplier.

Martina Panas relates that when the road from Poblacion to Ballay opened, and the transport of vegetables to the Baguio market became easier, prices started fluctuating erratically. There were times when she

wanted to cry when they transported cabbage to Baguio, only to be bought at 0.50 cents a kilo and she had to pay 0.30 cents/kilo for the fare. This meant that the payment were only enough to buy seeds for the next planting. This also meant that the children will have nothing to eat, if she will not go for credit. She relates that the suppliers were always there to loan out farm inputs as seeds and fertilizer, and rice to tide them over until the next harvest.

Manong Rudy relates that the roads which were opened by BCI in 1960 made transport of vegetables from Bashoy possible. Suppliers started to come and made their offers. Most common that time was Mrs. Nena Sadinto who is from stall number 387 at the Hangar Market in Baguio City. She supplied most of the farmers in Mt. Pulag in the 1980s and brings her vehicle to the area during harvest time (Personal Interview, 2009).

System and Process of Vegetable Farm Expansion

The PAMB members described the transformation of the mossy forest into a vegetable farm as highly mechanized. First, the trees are cut using the chainsaw, then the ground is cleared using the bulldozer. In the process, labor is hired from nearby barangays or municipalities, so this can be completed in a matter of two days. In some cases, the area is burned; trees are cut, cultivated and planted and or sold to interested individuals.

However, the above operations are being done because of the basic belief of the Kalanguya that the land belongs to them, and their cultural practice of land inheritance and ownership.

The flowchart of the vegetable farm expansion was derived from the testimonies and insights of the respondents as analyzed and presented in Figure 5.

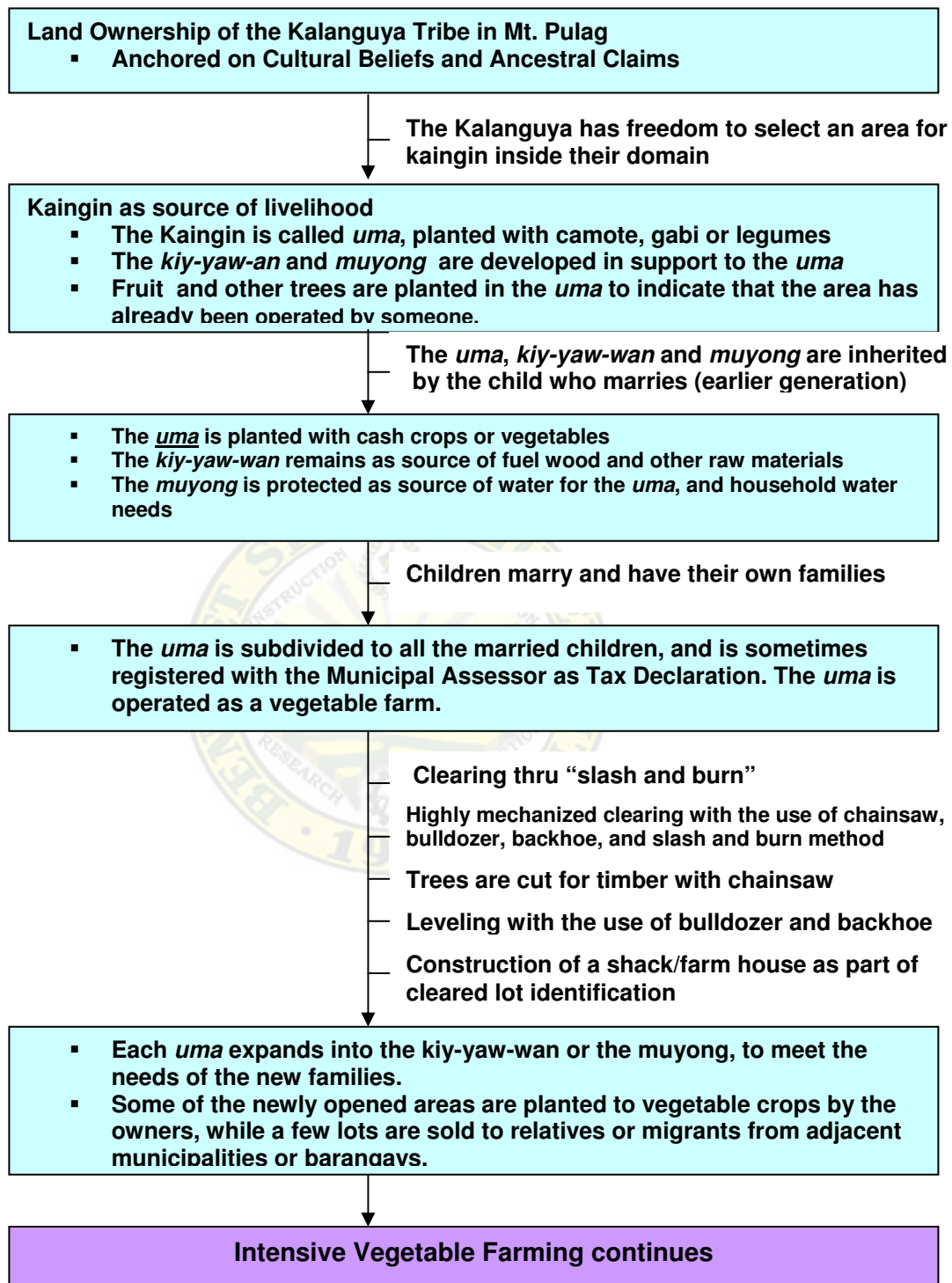


Figure 5. Flowchart of the system of vegetable farm expansion based on the research (January 2010)

The *uma* is developed from the *kaingin* and is inherited by children who marry, together with the *kiy-yaw-wan* and the *muyong*. Because the *uma* becomes insufficient to feed a growing family, the farmer expands into the *kiy-yaw-wan* and the *muyong*, which are actually part of the forest that support the raw materials for the households, and water needs of the *uma* and also the households.

When the *uma* expands into the forest, the clearing operation of new areas starts with the use of fire like the 'slash and burn' practice as observed by Conklin (1954) and Garrity (2001). Through a series of clearing activities with the use of chainsaw, bulldozer, backhoe and manual labor, the lands are prepared as a new area for vegetable farming.

After the trees are cut (Plates 4 and 5), bulldozers and backhoes are hired, sometimes by the farmer, but often times by the supplier, to clear and level-off the land.

One critical observation pointed out by the respondents is the need to clear a new area which when done will follow the same process and so the area becomes a vegetable farm. In some cases, local people just clear the area and later on sell it to interested individuals for the purpose of developing it as a productive and intensified vegetable farm.



Plate 4. Trees that may be a hundred years were cut at he Mt. Pulag National Park, Tabeyo (2007)



Plate 5. Felled trees in Tabeyo are left to rot. (2007)

Within the pine forest, trees are cut and sawn to lumber with the use of a chainsaw. In the mossy forest, the tree species are not suitable for lumber, and therefore, the trees cut usually go to waste, except for those that can be consumed as fuel wood, or sometimes used as fascines along the border of the newly operated vegetable farm.



Plate 6. Trees cut and sawn to lumber with the use of the chainsaw. Babadak, Bashoy (2003)



Plate 7. After felling the trees, the farm is cleared.
Tabeyo (2007)



Plate 8. The area is cleared slowly, creating patches that are growing wider and wider. Tabeyo (2007)

In addition, during the operation activities, it was pointed out that construction of a shack or a small farm structure is done to delineate that the area is owned by an individual, and ready for vegetable farming. This is usually observed at the slopes and mountain sides of the Mount Pulag National Park.



Plate 9. A small shack is eventually constructed. Tabeyo (2007)

According to the Protected Area Office Report (July 2004), abandoned pine lumbers were confiscated in Ballay within the pine forest. The confiscated lumbers were never claimed.

In the same report, Mr. Samuel Geking, a Park Ranger, witnessed the bulldozing and clearing of an area in Babadak, Bashoy. He submitted an affidavit report to the CENRO Baguio City, for legal purposes.



Plate 10. After clearing a patch of the forest. Tabeyo (2007)



Plate 11. A cleared portion of the forest after the trees were felled. Tabeyo (2007)

Moreover, as vegetable farm expansion continuous, heavy equipment are becoming regular fixtures in the area. The use of highly mechanized equipment makes the process easier and faster. Local people also participate in the operation of the machines as a source of added income aside from the hired labor during clearing operations especially during land preparation activities.



Plate 12. A backhoe parked, after clearing the forest in Tabeyo, Ballay. (August 25, 2009)

This was confirmed by the results of the Multi-Agency Quick Response Team Workshop, where the issues and concerns besetting Mt. Pulag include the use of heavy equipment in the conversion of forests into agricultural land.



Plate 13. Babadak, Bashoy, Clearing of bulldozed area, in preparation to planting. DENR CENRO Baguio Forest Protection Team (April 2007)



Plate 14. An area bulldozed and prepared for planting. Tabeyo. (2007)



Plate 15. This farm was expanded manually, slowly into the forest. Babadak, Bashoy. DENR CENRO Baguio Forest Protection Team (April 2007)



Plate 16. A bulldozer photographed by the DENR Forest Protection Team. Nobody in the area knows who owns the equipment. Tabeyo, Ballay DENR CENRO Baguio Forest Protection Team (June 2002)

It was also supported by DENR reports and photos, where bulldozers were caught on site, without legal programs of work presented, and without anybody admitting ownership of some of the equipment. Also, these were the same machines used to clear the mossy forest that created a new farm-to-market road traversing Barangays Tawangan and Bashoy.



Plate 17. Tawangan Road Opening. CENRO Monitoring Report (1994)

Through the continuous clearing operation in the area, bulldozing and backhoe activities were recorded by the indigenous people, local government units at the barangay and municipal levels, and the DENR. Table 9 shows the bulldozing activities which affected the Mount Pulag National Park protection and management initiatives.

Table 10: Bulldozing Activities at Mt. Pulag National Park

Date	Activity	DENR/LGU Action
1995	Bulldozing, Opening-up of Ballay-Tawangan road.	LGU project, Environment Compliance Certificate not complied with.
August 14, 2000	The Sanguniang Bayan of Kabayan issued a Resolution advising a certain Mr. Alfredo Luciap to stop bulldozing activities at Bashoy, Kabayan unless he obtains clearance from DENR or other concerned agencies. Mr. Luciap reasoned out that the bulldozing was allegedly to improve barangay roads and private lots.	The bulldozing stopped, no case filed in court.
April 28, 2004	On-going bulldozing along Tawangan- Lusod area	<ul style="list-style-type: none"> - Filed three (3) cases of violation of Section 68 & 69 of PD 705 as amended involving illegal clearing and bulldozing of forest land. Two (2) of the cases were however dismissed by the court and the prosecutor. - Dispatched written warnings to suspected upland farmers engaged in illegal clearing; -Allocated 2 hectares contract reforestation at

Table 10.

Continued...

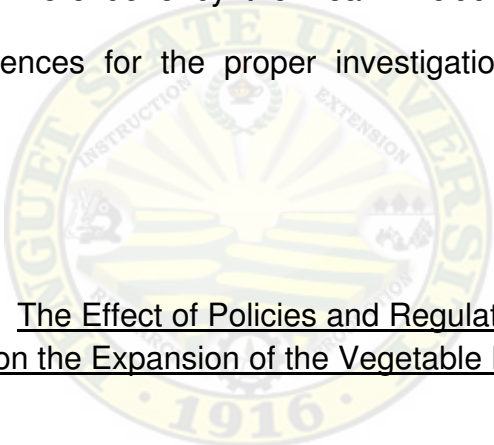
		Eheb, Tinoc, Ifugao ,a buffer zone area of Mt. Pulag National Park to serve as alternative source of livelihood of the communities near the park;
June 2004	Bulldozers in position at Bashoy in preparation for the levelling of farmlands and private roads	An emergency CDO and Notice of Violation was issued to Mr. Casio Paris, owner of the bulldozer.

As early as August 14, 2000, the Sanguniang Bayan of Kabayan issued a Resolution advising a certain Mr. Alfredo Luciap to stop bulldozing activities at Bashoy, Kabayan. Unless, he obtains clearance from DENR or other concerned agencies, he can continue operations. However, he reasoned out that the bulldozing was allegedly to improve barangay roads and private lots. This concern of bulldozers being brought into the forests, particularly inside the National Park, was recognized by the Quick Response Team which includes as one of their functions, to recommend policy issuances to appropriate bodies covering restrictions of entry or presence of heavy equipment, i.e. bulldozers, backhoes within forest areas.

In relation to this, patrolling activities done by the Park Rangers mentioned that the PASU apprehended people who were on the act of

opening-up new areas into the Park. However, when cases were filed, most of the cases were dismissed since majority of the individuals were only hired labor. Furthermore, other cases have been filed, but were also dismissed since nobody from the community and even from the local Police Force or the DENR, would testify.

As a consequence, the Quick Response Team considered this as one of the major concerns why expansion continues. In view of this concern, actions were done by the Team including the gathering and collating of evidences for the proper investigation and prosecution of violators.



The Effect of Policies and Regulations
on the Expansion of the Vegetable Farms

One of the major observations noted in the study was the availability of supporting laws, policies, rules and regulations on the protection, conservation and management of our natural resources. However, as the study progressed, it was noted that these laws have resulted to an advantage and disadvantage for those who are implementing them.

The PAMB pointed out during the FGD that the expansion is happening due to ignorance of the law, that the communities are not

aware that expansion into the National Park is illegal, coupled with the laxity in implementation of laws. Furthermore, one said that this is due to many and conflicting programs of the government.

During the logging operations of Benguet Corporation, Incorporated (BCI) from 1935 to 1988, forest protection was done jointly by rangers from the DENR and BCI. Although the BCI was permitted by the government to cut the trees during their logging operation, they did not allow the community to do so. The community understood that cutting of trees and clearing of the forest is prohibited.

In 1989, it was noted that there was no vegetable farming observed in nearby areas of the national park even the massive operation of the BCI. This proved that laws were in a way followed. However, over time, the enforcement of the governing laws affected the area through the fast expansion and encroachment in the area.

Manong Rudy relates that at one time, Ranger Cosileng from DENR and Ranger Jose Laroco from BCI came upon his father working at clearing an area with the use of a two-man-saw, which he plans to plant to potatoes. The rangers (popularly known as 'Montero' those days), apprehended and informed him that charges will be filed against him.

During the hearing in Bokod, he was advised by the judge to surrender all his Tax Declarations as bail, of which he complied. This was

during the administration of then Mayor Maurillo Felipe from 1988 to 1992. He said that the Tax Declarations were never returned, but they continue to pay the taxes and therefore believe that the lands are still legally theirs. They did not know that Tax Declarations are not proof of ownership, but are only issued for taxation purposes.

The Quick Response Team in a workshop in 2008 included in their issues and concerns, the indiscriminate issuance of Tax Declarations within forests and protected areas by the Municipal Assessors.

Mr. Carino, a farmer from Ballay explained that his vegetable farm area was tax declared in Buguias and he has been paying his tax for forty years. He believed that he has the right to till the land. When he was informed that forestlands cannot be tax declared as provided by law, and that Tax Declarations are not proof of ownership but only for taxation purposes, he said that their municipality (LGU) and community recognizes that if one has a Tax Declaration over a certain land, he /she is recognized as the owner (Personal Interview 2009).

The Kabayan Municipal Assessor in 2009 stated: *“Majority of the lands tax declared within the National Park were done prior to the proclamation of Mt. Pulag as a National Park. Only a very minimal area was tax declared after the proclamation. And still most of the vegetable farms remain as part of the park, untenured. However, although these*

remain untenured for the farmers, they believe ownership through ancestral claim. There are farmers who bought lands from relatives, but this is still acceptable for those clans who have been there prior to the proclamation. The worse scenario is when farmers from outside municipalities buy lands which are untenured and are glaringly part of the National Park, and are newly operated. These are the cases that DENR should look into.”

The CENR Officer Edgardo Flor however, emphasized that the lots bought as claimed by some farmers are not legally binding, since forestlands cannot be sold or bought as stated by law (Personal Interview, 2009).

The Municipal Agrarian Reform Officer (MARO) Mr. Gideon Ulban stated that there was an agreement between the LGU, DENR and the farmers in 2005 after a consultation made, to stop encroachment into the forest, allowing them to continue farming the lots operated then. It was agreed that there should be no more new operations. However, he says that he regrets to see that this has not been followed, considering that it was very beneficial to the farmers. He is hopeful that the protection of Mt. Pulag will improve since the present Mayor's advocacy is the protection of the Park (Personal Interview, 2009).

The PAMB enumerated ways by which this problem may be solved. Most of the members strongly stated that the problem can be solved through the consolidated efforts of the government agencies, the LGU, the community and other sectors. Three members said that massive information, education and communication (IEC) activities by the different government agencies will help educate the communities on government programs, laws and policies, particularly concerning National Parks. Another member said, strict enforcement of Forestry Laws and National Park Regulations inside the Park will help prevent the expansion of the vegetable farms.

The Delineation of the National Park boundary was a suggestion given by majority of the members. They reasoned that delineating the boundaries on the ground with the participation of the community, and installing visible markers on the ground will deter the expansion of the vegetable farms into the National Park.

The following photos show the condition of the Mount Pulag National Park through the years. As noted, even with laws approved, the area still continues to be affected by expansion and encroachment.



Plate 18. Tawangan in 1989, showing no Vegetable Farms in this area. CENRO Baguio Monitoring Report. (1989)



Plate 19. Tawangan showing minimal vegetable farms in 1990
PAWCZMS BMS Report. (1990)



Plate 20. Teltelpok, Babadak, Bashoy in 1991 showing minimal Vegetable Farms. CENRO Monitoring Report (1991)



Plate 21. Babadak, Bashoy showing clearings but not yet developed into a vegetable farm. CENRO Monitoring Report (1991)

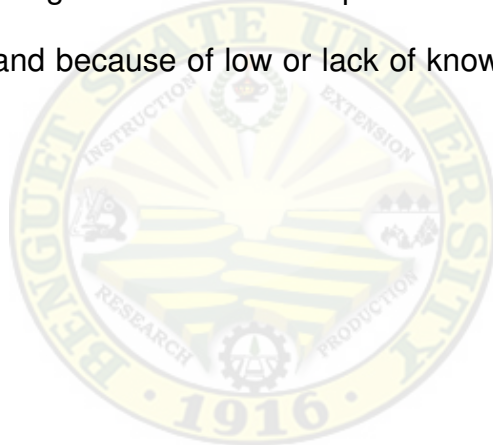


Plate 22. The second growth forests in Babadak, Bashoy, being replaced by the vegetable farms. DENR BMS Report. (2004)

Over the years, vegetable farm expansion has been creating problems for the local people and the government. Even with existing laws and policies, the expansion still persists. The proclamation of the Mount Pulag as a national park was believed to be a positive move by the government on its protection and management. However, this further created confusion and uncertainty with regards to the implementation of existing and new laws on natural resource management within and around Mount Pulag. Important events and activities in relation to policy implementation affected the vegetable farm expansion and encroachment positively and negatively on the part of the local people, local government

units and the DENR responsible for the implementation of the laws and policies as shown in Table 4.

The laws, covering the Mt. Pulag National Park, particularly the NIPAS Act of 1992, PD 705 or the Forestry Code of the Philippines and the IPRA Law have been implemented by the DENR, the NCIP and Local Government Units as mandated. However, with the above discussions, the respondents testified that the laws were not effective in deterring the expansion of the vegetable farms in the park because of leniency/laxity of implementation and because of low or lack of knowledge of the law in the communities.



SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The foremost reason behind the expansion of vegetable farms in the Mt. Pulag national Park is poverty among the communities residing inside and adjacent to the Park. The situation is caused by the lack of employment and livelihood activities in the area. Farming has always been the only source of food and income for the indigenous peoples of the Park. Now that their population is increasing, the vegetable farms are expanding to meet their needs.

The land belongs to them because their ancestors owned it. The indigenous peoples believe that the land, even if proclaimed as a National Park, belongs to them by ancestral claim. The belief of ownership is strengthened by their small knowledge and misconception about the IPRA Law. The buy and selling of the land is contrary to the IPRA Law. The Quick Response Team said in their report that the communities have a wrong perception of the IPRA Law on land resource ownership.

The farmers from the adjacent municipality of Buguias who are involved in vegetable farming and who have limited land to expand in their municipality have bought lands from the indigenous peoples. These they have converted into vegetable farms. The legality of the sale has not been

a concern of both the buyer and the seller. This is attributed to their limited knowledge of the law.

Knowing that the area is inside the park does not prohibit/ stop the indigenous peoples from expanding their vegetable farms and selling portions of it.

That expanding their vegetable farms is necessary for economic reasons. It is the only source of livelihood and they have to do it in order to live, feed their family, and send their children to school.

The community believes that the government should provide an alternative livelihood for them, and will not be amenable in case the government decides to evict them from their farms.

The farmers are aware that the mossy forest will entail lesser farm inputs as to fertilizer, and lesser water requirement, and therefore a cheaper operation.

The construction of farm-to-market roads inside and adjacent to the Park has facilitated the expansion of vegetable farms into the Park. The most recent road opening along the Tinoc-Tawangan route has not complied with the required process of undertaking a public consultation nor the legal permitting. It is now used to convey vegetables from the expanded vegetable farms and illegally cut lumber.

Ignorance and little knowledge of the law covering Protected Areas

and National Parks is one factor facilitating the expansion of the vegetable farms. And because of this, the implementation of the law did not deter the expansion of vegetable farms into the park. The expansion continues.

Conclusion

It is therefore concluded that the expansion of vegetable farms into the Mt. Pulag National Park is influenced by three major factors namely; the low income, below poverty situation and the lack of alternative livelihood programs for the communities inside and adjacent to the park, the ignorance of laws covering Protected Areas and National Parks, for the indigenous communities and the lack of political will of the government agencies and the LGU to implement policies and laws governing the Park.

Moreover, the vegetable farms are expanding into the Park, in a manner following the increase in population of the indigenous communities. The original hectareage of farms of the family doubles or triples after the children got married and have their own families. Another mode of expansion is the migration of farmers from adjacent municipalities and provinces, after purchasing areas to be operated as new vegetable farms.

Finally, it is concluded that even with the various programs and protection activities of the DENR, other government agencies and the

LGU, expansion continues which is attributed to laxity in the implementation of laws and policies.

In this regard, the LGU must be aware that the continuous encroachment of vegetable farms into the Park is creating problems ecologically. Studies and documentations must be made, to officially provide instructions, guide and directives.

Recommendations

The delineation, survey and demarcation of the boundary of the National park on the ground should be a priority activity for the DENR and the LGU. This activity was mentioned by all stakeholders as a solution to the problem. The farmers themselves also stated that they will not encroach into the Park if the markers will be visible on the ground. The LGU also clamors that this activity has been discussed many times but never materialized.

The conduct of a multiagency massive IEC that will address ignorance of the law and the policies encompassing the Protected Areas and National Parks and other environment concerns should be conducted. Previous IEC activities conducted were not sufficient to provide necessary information that will spur positive actions from the stakeholders. Thus these should be done regularly, i.e. quarterly, and to target the different

stakeholders. It is further recommended that the DENR spearhead the preparation of an IEC Plan for the Mt. Pulag National Park, in collaboration with the different key stakeholders.

Municipal and barangay LGU ordinances should be localized and customized to community concerns and needs. Particularly, policies for the protection and sustainable management of the Park will be seriously implemented by the LGU.

Coordination among LGU, GAs, and other key stakeholders in forest protection activities is recommended. This shall include the community and the farmers who shall be assigned certain responsibilities in forest protection. The responsibilities may include apprehension of encroachers, after the delineation and demarcation of the Park boundaries. This may address the problem of the DENR where rangers are just too few to be able to patrol the whole area of the Park. The farmers can be deputized as Forest Protection Officers or Wildlife Enforcement Officers, who will have the authority to apprehend violators of forestry laws or the NIPAS Act and the Wildlife Act.

The survey and inventory of existing vegetable farms, inventory of ownership, status, location, etc. is an activity that must be conducted the soonest possible time. This activity will give a baseline data on the status

of the vegetable farms in the Park. The baseline information will serve as guide for planning of programs and activities for the Park.

The DA to plan out programs on increasing production in existing limited areas, versus expanding the area, vis-à-vis a comprehensive agricultural program.

Livelihood and source of income for growing families has been one factor repeatedly stated that contributes to the expansion of the vegetable farms. Programs for livelihood activities by concerned government agencies and the LGU should be planned out and implemented. As well, a program on population control is recommended to help in the social as well as economic situation of the communities within the Park.

It is recommended for the LGU to facilitate and coordinate social services for the communities i.e. health and birth control, education, scholarships, livelihood.

It is highly recommended that the DENR, DOT and LGU collaborate for the implementation of the Mt. Pulag Ecotourism Development Plan as alternative livelihood. Other aspects of ecotourism income generating projects are recommended for assessment by the same institutions.

Participatory Planning for the key stakeholders be conducted, to review the Mt. Pulag General Management Plan, and incorporate

appropriate plans that will address the pressing issues of the Park, particularly the expansion of the vegetable farms.

Policy issuances/ local ordinances from the LGU on the restriction of entry, and/ or the presence of heavy equipment in the forest areas should be looked into.

Policy issuance by LGUs on the issuance of Tax Declaration within the Park and adjacent forestlands is a very critical aspect that should be assessed by a committee or a task force.

With the results of this study, the DENR can objectively make decisions that are geared towards the sustainable management of the National Park, and can address the present problems therein, objectively. This study will present a venue for the DENR to develop a stronger partnership with the local stakeholders of the park.

The result of the study will serve as reference for the Local Government Unit for planning and policy formulation concerns. The actual result of the study will serve as a guide for them to come up with appropriate decisions and suitable plans for the communities within the park.

The LGU is aware that the continuous encroachment of vegetable farms into the Park is creating problems ecologically. However, studies and documentations have to be made, to officially provide them with

official and acceptable references.

This study will serve as a venue for the DENR and the local stakeholders to discuss and plan-out actions to address the sustainability of the park.



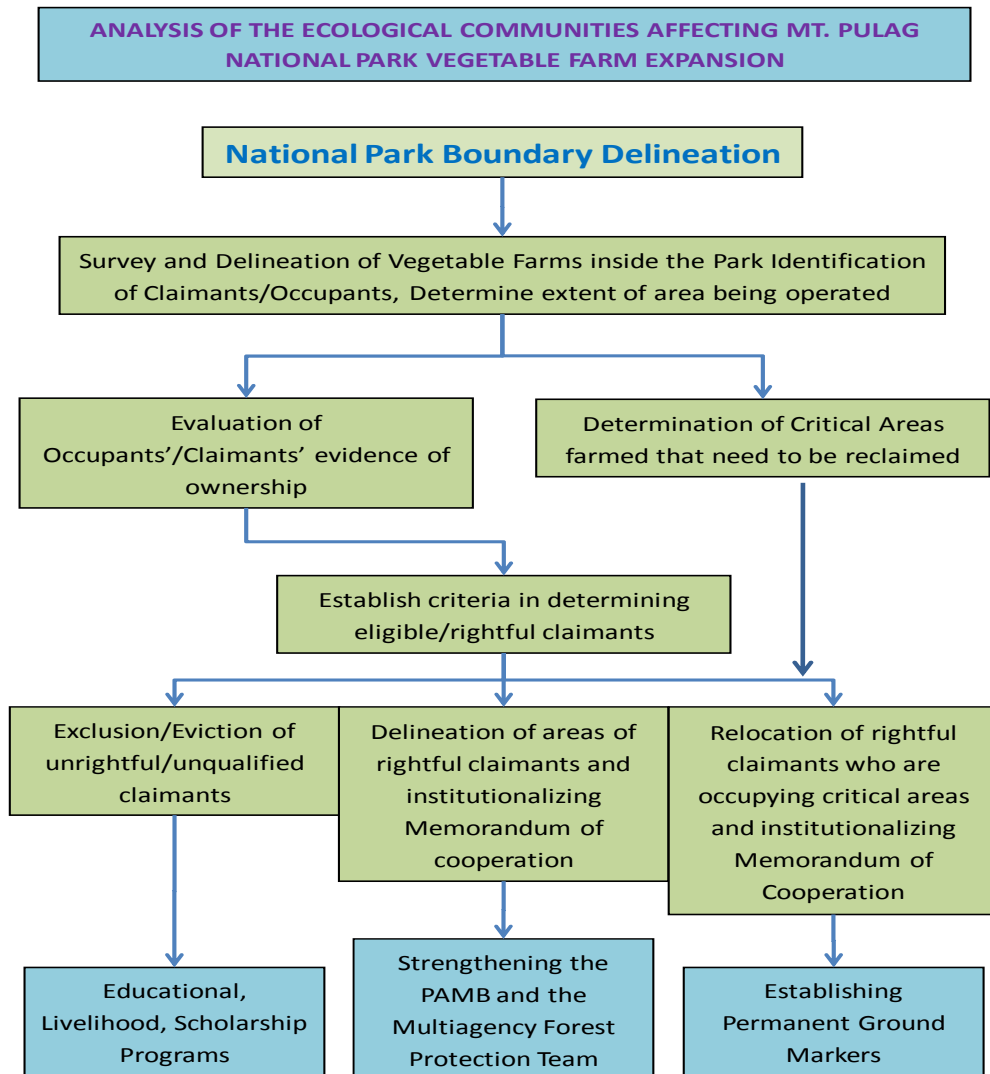


Figure 6: Recommended Activities How to Mitigate the Expansion of Vegetable Farms in the Mt. Pulag National Park

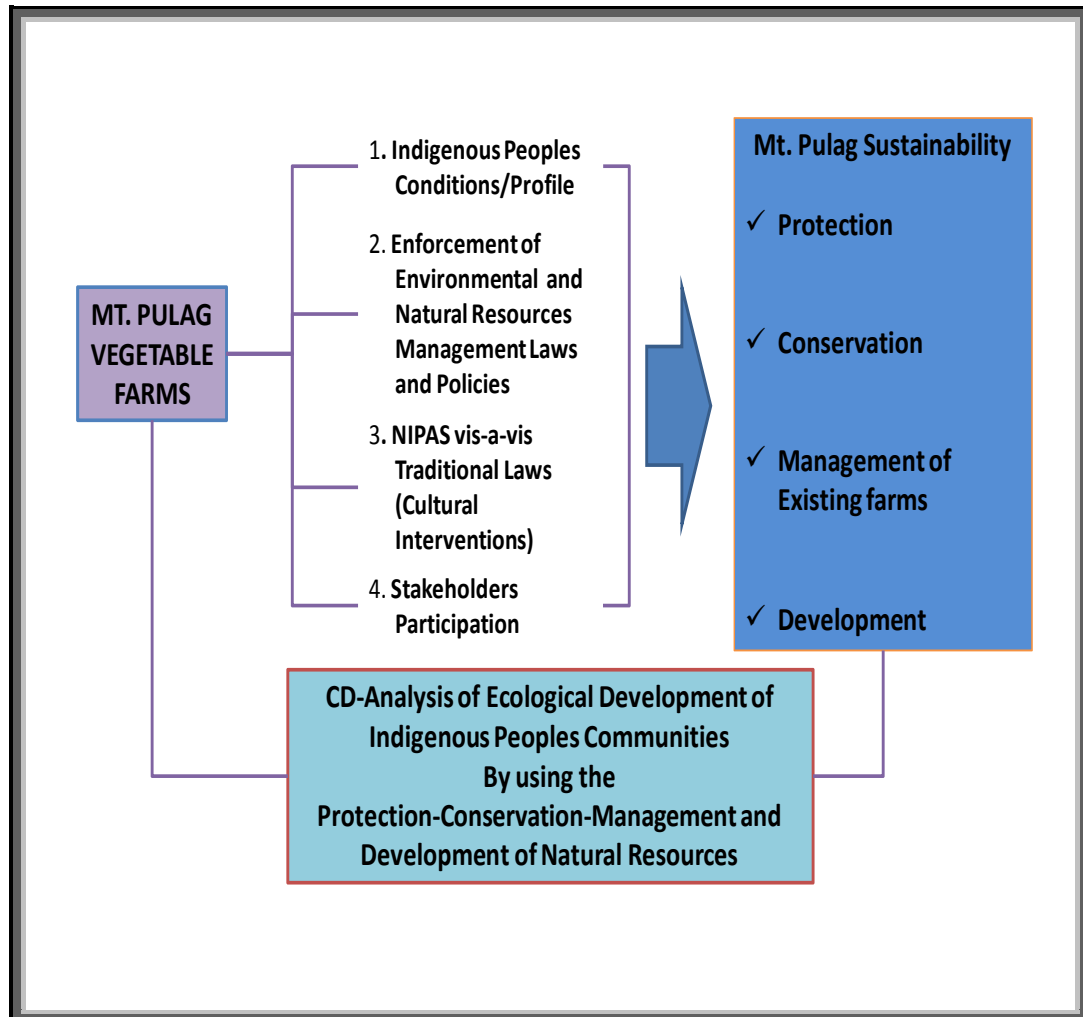


Figure 7. Modeling of Ecological Analysis for Sustainable Development of Indigenous Peoples Communities. (Pawid, L.I. and Aquino, M.U., 2010)

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Appendix A

Republic of the Philippines
Benguet State University
La Trinidad, Benguet

August 02, 2009

HON. FAUSTINO AQUISAN
Municipal Mayor
Kabayan, Benguet

Dear Sir:

Greetings!

The undersigned is conducting a research entitled "An Assessment of the Expansion of Vegetable Farms in the Mt. Pulag National Park" in partial fulfilment of her studies for masteral degree in Community Development, at the Benguet State University, La Trinidad, Benguet. The result of the study will serve as future guide for the Department of Environment and Natural Resources, the Local Government Units and other government and private institutions for the sustainable planning and management of the Mount Pulag National Park.

It is in this regard that I humbly request your good office to allow me to conduct one-on-one interviews with you and your staff, particularly the Assessor, and the Municipal Planning and Development Officer.

Thank you and I look forward to your favorable action to my request.

Very truly yours,

(Sgd.)LINDA CLAIRE I. PAWID
Researcher

Appendix B

December 14, 2009

DIR. REGIDOR M. DE LEON
Regional Executive Director
/Chairman, PAMB
DENR – CAR, Baguio City

Dear Dir. DE LEON:

Holiday Greetings!

I am presently completing my Masters degree in Community Development at the Open University of the Benguet State University and presently undertaking my Thesis Study entitled, "The Vegetable Farms Inside the Mt. Pulag National Park, An Assessment".

The study aims to assess the factors that influence the expansion of vegetable farms in the Mt. Pulag National Park. When these are documented, the DENR, particularly DENR-CAR will then have information and data that will serve as basis for planning and policy adjustments.

In this connection, may I be allowed to conduct a Focused Group Discussion with the PAMB during their regular meeting on December 17, 2009. The information that will be gathered from the PAMB will hopefully validate the data already gathered from the community.

Thank you so much and I look forward to your support.

Very truly yours,

(Sgd.)LINDA CLAIRE I. PAWID
EMS, PAWCZMS, DENR – CAR

Appendix C

Republic of the Philippines
Benguet State University
La Trinidad, Benguet

August 02, 2009

Dear Respondent:

Greetings!

The undersigned is currently enrolled at the Open University of the Benguet State University, La Trinidad, Benguet and is conducting a research entitled "An Assessment of the Expansion of Vegetable Farms in the Mt. Pulag National Park" in partial fulfilment of her studies for a masteral degree in Community Development. The result of the study will serve as future guide for the Department of Environment and Natural Resources, the Local Government Units and other government and private institutions for the sustainable planning and management of the Mount Pulag National Park.

As one of the stakeholders of Mt. Pulag National Park, and being involved in its management and protection, I would like to solicit your observations and views regarding the expansion of vegetable farms in the park. I will inform your good office of the schedule for your interview.

Thank you and I look forward to a fruitful interview with you.

Very truly yours,

(Sgd.)LINDA CLAIRE I. PAWID
Researcher

Appendix D

INTERVIEW GUIDE QUESTIONS

A. Basic Questions

1. How long have you been staying in Kabayan?
2. Do you live inside the Mt. Pulag National Park?
3. Do you have a vegetable farm?
If yes, how many lots?
How wide is your vegetable farm? _____ hectares
Where is it located?
How did you acquire this farm?
Is it Tax Declared? When was it Tax Declared?
Is it covered with other Land Tenures? _____ ISF, CSC ____ CBFMA
_____ CLOA _____ Special Land Use
4. How long have you been farming the area? _____ Years
5. What benefits do you get from the vegetable farm?
6. Are you aware that opening-up a vegetable farm within the area of the Mt. Pulag National Park is illegal?
7. If yes, why did you open a vegetable farm anyway?
8. What are the reasons why the vegetable farms keep increasing?
9. What is your barangay / community doing to minimize expansion of vegetable farms into the park?
10. Do you have recommendations/ suggestions on how to address this problem of vegetable expansion in the Park?

B. Other Questions (For FGD, LGU, DENR and other Government Agencies)

1. Are you aware that there are vegetable farms inside the Mt. Pulag National Park?
 2. What can you say about this?
 3. How is the expansion being done?
 4. What is being done by your office/agency to help address this problem?
-



BIOGRAPHICAL SKETCH

The author comes from Sagada, Mt. Province, born to parents: Andres S. Inso and Mary A. Kodat. Born on August 26, 1966, she is the fourth among six children.

She finished her elementary education at Sagada Central School and secondary education at St. Mary's School, both schools located in Sagada, Mt. Province. She completed the degrees Bachelor of Science in Biology at St. Louis University, Baguio City (1987) thru the National Indigenous Scholarship Grant Program (NISGP) of the government, and Bachelor of Science in Education at the Baguio Central University (1990).

She is married to Harland Gary B. Pawid of La Trinidad, Benguet and they are blessed with four children: Rhys Yvan Dane (1993), Kalehla Nikole (1994), Harland Zachary (1996) and Mya Dione (1999).

She was hired by the US Government as a teacher at the Philippine Refugee Camp in Morong, Bataan (1991-1992), teaching English as a Second Language and Work Orientation modules to Vietnamese Refugees who were in transit from Vietnam to their permanent homes in the United States.

She was employed with the Department of Environment and Natural Resources, Cordillera Administrative Region (DENR – CAR) as Community Development Officer of the Forest Management Service from 1994 to 2002 and as Ecosystems Management Specialist of the Protected Areas, Wildlife and Coastal Zone Management Service (PAWCZMS) from 2003 to present.

She had the opportunity to attend the preparatory conference to the World Summit on Sustainable Development upon the invitation of the United Nations held at Bali, Indonesia with special focus on Indigenous Peoples and Gender and Development in Forestry (2002).

Thru a fellowship granted by the United Nations Environmental Program (UNEP) in coordination with the Federal Republic of Germany, she was able to attend a Training on Biodiversity Conservation in Dresden, Germany (2007).

The author realized the need to further her education at the Benguet State University, to be more effective in her job. She chose Community Development because her job brings her to communities with problems on environmental protection and resources management.

She believes that aspirations are attained thru our will and efforts and most especially, with the Lord's guidance.



LINDA CLAIRE INSO-PAWID