Tourists visiting the province of Ifugao, in the northern Philippines, gasp in awe at the grandeur of the Banaue Rice Terraces. From December to April, the topography is characterized by the vast contoured greenery of young rice plants, which metamorphose into golden yellow from May to July as the rice ripens. Such is the famed “Eighth Wonder of the World,” which has also been declared a World Heritage site by the United Nations Educational, Scientific and Cultural Organization.

But suppose there were no trees and a period of drought ensued, with no water reaching the rice terraces. The vista would be a uniform grey-brown, with cracked dikes and barren paddies. The visitor suddenly realizes the importance of the forests — interspersed among the rice terraces that dominate the landscape. As the hidden fuel tank of a vehicle supplies petrol to the engine — resulting in motion — the Ifugao forests release water to the terraces, even in dry months, resulting in bountiful rice harvests.

These patches of forest, usually enclosing or adjacent to Ifugao settlements, are known as muyong (or pinugu in another dialect). A muyong is an unttiled slope

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1 Ifugao locally means “people of the hills” and also lends itself to the name of the mountainous province in Northern Luzon inhabited by the Ifugao people.
covered mainly with timber, fruit trees, climbing rattan, bamboo, palms and other associated natural vegetation, which is often used as a source of fuelwood. Muyongs are privately owned and managed, with clearly demarcated boundaries.

Over the years, most attention has focused on the rice terraces themselves (locally called payoh). It is only recently that outsiders have come to recognize and appreciate the critical roles of the muyongs in sustaining the land-use system of the Ifugao, and their lives and culture. Muyongs are an essential part of the agroforestry system in the steep mountainous region — protecting lower farmlands from runoff and erosion. There are, however, no records as to when and where the practice of maintaining muyongs began.

Environmental intervention

It is believed that, as in the case of the rice terraces, the Ifugao — in response to their specific needs — developed muyongs as an environmental intervention. Research conducted by the Bagong Pagasa Foundation Inc. (BPFI) has documented three probable reasons for the emergence of muyongs as given below.

1) Evidence suggests that the ancestors of the Ifugao were well aware of the relationship between the existence of forests and stable water supplies. In the same way that the Ifugao people exercised ingenuity and creativity in carving the terraces to support their tribal livelihoods, they also designed and established muyongs to create a stable source of water for their payohs.

2) Secondly, muyong establishment was reinforced when it became apparent that sources of fuelwood near Ifugao settlements were becoming depleted.

3) There are indications that some early muyongs were started by a low caste in Ifugao society — the nawotwot — as a means of uplifting their economic and social standing in the community. Ownership of large areas of payohs and muyongs are indicators of high social status or affluence in Ifugao culture.

In their own way and using local resources, the Ifugao developed their muyongs over generations — sharing and exchanging planting materials and labour in the process.

To date, there are no data available on the aggregate area of all the muyongs in Ifugao. However, research by Napoleon Hangdaan (a local researcher), shows that muyongs abound in 9 of the 11 municipalities of Ifugao (Hangdaan 2000). Hangdaan’s account lists the locations of all muyongs in the identified municipalities and documents 603 sitios (villages) and sub-sitios where muyongs exist.
Three types of *muyong*

Classified on the basis of their establishment, three types of *muyong* can be distinguished:

- those that were planted and handed down through generations;
- those recently established on fallow swidden (or *uma*) land; and
- those established within the natural forest through a long usage claim.

The area of a single *muyong* ranges from half a hectare to three hectares and *muyongs* are generally located at a distance of up to one kilometre from the home, depending on where ancestral *uma* were first established.

The boundary between adjacent *muyongs* consists of a line of cleared land — one-and-a-half-metres wide. The owners themselves maintain the line by occasionally cutting saplings and shrubs that grow along it. Boundary disputes may arise due to failure of one or both parties to clean the line. An aggressive owner may sometimes alter the boundary in his favour by adjusting the line, thus encroaching on the area of the adjacent *muyong*.

The conversion process from *uma* to *muyong* necessitates that the owner periodically tends and protects the growing shrubs and forest trees. Through natural succession, vegetation in the *uma* improves from cogon (*Imperata cylindrica*) to talahib (*Saccharum spontaneum*), followed by the appearance of ferns, then the emergence of miscellaneous shrubs and medium-sized trees. This succession to larger and taller vegetation is indicative of improving soil fertility and a better microclimate, indicating more stable conditions. Eventually, dipterocarp tree species such as lauan (*Shorea contorta*), guiyo (*Shorea guisso*) and bagtikan (*Parashorea malaanonan*) may begin to grow, which leads to the *muyong* reaching its climax, or most stable ecological condition. This process of natural succession may take 20 years or more depending on initial soil conditions. The owner may, however, accelerate the process by planting preferred tree species or by transplanting wildings from nearby natural forest.

Hangdaan records three modes by which ownership of *muyong* can be acquired:

- **By inheritance.** If a father inherits *payoh* and *muyong* from his parents, then these are bequeathed to the first born of his children. However, the first-born child may prefer to inherit the mother’s inherited property, in which case the father’s inheritance goes to the second child. The third child inherits whatever *payoh* and *muyong* may have been acquired or purchased by the couple. If there is a fourth child, he or she may inherit the couple’s *uma*. Planting may be carried out on this fallow land, including the option to plant trees and convert it into *muyong*. 
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- **Via purchase from a hapless owner:** The transaction is brokered through a respected person in the community. Payment is made in the form of money or traded animals such as pigs, carabao (buffalo) or chickens.

- **Via the self-made method:** If a treeless vacant area in the uplands can be found, the prospective owner may clear the area and create an **uma**. As time passes, desirable trees are planted that grow to maturity and are harvested in time of need. The owner may then bequeath the property to his children.

**Natural setting**

The Ifugao **muyongs**, in their traditional composition, have a rich stock of varied plant species. In 1999, Dr Merlyn Rondolo, a scientist with the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), undertook a comprehensive survey of **muyong** composition that revealed a huge array of species utilized for various purposes. These included 171 fuelwood species, 112 species used in construction, 70 species that provide food and various species used for basket-making and containers, woodworking, cordage, shaman rituals and children’s toys. Ten varieties of rattan were also found, most of which were planted and cultivated (Rondolo 1999).

“**The Ifugao use as many as 45 plant species as medicine,**” explained Dr Rondolo. “**While there is a trend towards less reliance on medicinal plants, in favour of commercially available medicines, it is worth examining the active components of these medicinal plants which may enable manufacture of pharmaceutical medicines.**”

The Bagong Pagasa Foundation reports that the Hapuwan subgroup of the Ifugao tribe uses indigenous pesticides to eradicate insects that damage rice in the terraces. For example, 20 aromatic herbs, many collected from the **muyongs**, are gathered, pounded and mixed to kill army worms. Other herbs containing potent compounds are used to stun and catch fish in streams.

“**Our preparation of these botanical pesticides and potions involve rituals led by our elders. The pesticides produced are highly effective,**” said Benjamin Lunag, an Ifugao elder.

**Care and maintenance**

The Ifugao devote considerable time to the care and maintenance of the **muyongs** once the rice-planting season has finished. They take turns, through a system of shared labour called **ub-ubbo**, in developing silviculture in the **muyongs**. Trees are cleared of climbing vines that otherwise would choke and kill the woody perennials. In the municipalities of Lamut and Lagawe, coffee is often planted to
maximize the use of open spaces in the $muyongs$. Tree species that are regularly interplanted include gmelina ($Gmelina arborea$), narra ($Pterocarpus indicus$), mahogany ($Swietenia macrophylla$) and rain tree ($Samanea saman$). Rattan and bamboo are also planted.

Thinning and pruning are carried out during the dry months. Pruning improves tree form and enhances the volume of clearwood, and the pruned branches are gathered for fuelwood. Thinnings are used to make fence posts or for light construction and repairs to houses.

Mature trees are cut only when large dimension construction material is needed. The decision on which trees to cut is dependent on the intended use of the harvested timber. Tree species such as $baku$-$og$, $bultik$-$gotapan$ and $bultik$-$tangayaan$ are preferred for studs and flooring. Dalakan ($Alstonia scholaris$), a relatively fast-growing species, is used for non-load bearing building purposes, since its wood is soft and less durable than many other hardwood species. Directional felling is employed to avoid damage to other trees.

Rattan fruits are harvested annually and sold in local markets or brought to other municipalities for trading. A survey by the Bagong Pagasa Foundation revealed that an average of 115 kilograms of rattan fruits are harvested by each Ifugao household each year — most of which are sold for a price of around US$0.30/kilogram. Where coffee is interplanted, an average bean harvest of 406 kilograms/hectare/year has been recorded. Coffee beans are sold for a mean price of US$0.14/kilogram.

Each household also harvests approximately 2 000 board feet of timber per annum from the $muyongs$. About 80 percent of this is used for domestic purposes and the remainder is sold. Owners of $muyongs$ located nearest to urban centres typically sell higher volumes of timber and other forest products. Each household also extracts an average of 106 bundles of fuelwood from its $muyong$ each year. A standard bundle has a diameter of about 25 centimetres and a length of about 50 centimetres.

**Wood carving**

Wood for carving is the other major raw material derived from the $muyongs$, with volumes fluctuating in response to market developments and restrictive policies periodically imposed by the government. When a sealed road linking Ifugao to the Cagayan Valley and Manila was opened in the 1970s, the production and marketing of woodcarvings boomed. Items carved included religious relics like $Bulul$ (the Ifugao rice god), household utensils and artistic figurines. Prior to the 1970s, only small volumes of woodcarvings were sold beyond village markets.

Wood carving expresses the cultural creativity of the Ifugao, whose nourishment and continuity is interlinked with the $muyong$. Alex Tayaban, an
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Ifugao elder of Lamut, elaborated: “Many of our woodcarvings closely reflect our relationship with nature and with our gods. The same creativity that inspired us in carving the rice terraces inspires us as we fashion pieces of wood into masterpieces.”

During the boom years for wood carving, container loads of carvings were transported to Manila and some even reached international markets. Raw materials were initially drawn from muyongs and communal forests. However, as suitable wood supplies declined, wood for carving was increasingly purchased from the nearby province of Nueva Vizcaya. The increasing threat to local forests led to intervention by the government and Ifugao elders, which helped to mitigate the destruction of the muyong. Today, the local woodcarving industry continues, but caters to a more limited market. Wood for carving is still obtained from the muyong, but in sustainable volumes.

Farming system

Dr Rogelio Serrano has studied the Ifugao for a number of years and refers to their farming system as “...an ancient spatial version of the new science of agroforestry.” Seen from a wider perspective, the totality of the upland farming system of the Ifugao consists of the payoh (rice fields), the muyong (forest) and the uma (swidden lands). These components interact with each other, with Ifugao culture and with landscapes and ecosystems at lower elevations.

A macro-level interaction is between the muyong and downstream environments. The muyong serves to capture and store rainfall and slowly releases it throughout the year, thereby irrigating the terraced payoh. Excess water flows through the river system, passing through the province of Nueva Vizcaya, to be stored at the Magat Reservoir in Isabela Province. The stored water is used to irrigate lowland rice fields and to generate electricity for the large population of the Cagayan Valley. Water flowing from the muyong carries with it rich nutrients built up by the forest, which increase the fertility of the payoh. The muyong also serves as a source of rocks and stones to make walls for new terraces and to repair damaged older terrace walls.

A second interaction is between muyong and uma. Muyong, with its rich biodiversity, supplies seeds — dispersed by wind and wildlife — to the uma in its fallow period (ublag). Plant regeneration is, consequently, more rapid than in the absence of muyong. The muyong also serves as a buffer to nearby uma, providing microclimates favourable to the growth of fallow vegetation, as well as trapping eroded soil.

There is also interaction between the muyong and Ifugao households, and — at a larger scale — the community and Ifugao culture. The muyong, as part of the Ifugao ancestral land, is a host to the tribal culture. Many Ifugao settlements are in the middle of muyong clusters. Not only are houses built within the muyong, but
also the people’s forefathers are buried there. The muyong is consequently seen as the abode of ancestral spirits and other benevolent spirits revered by the Ifugao. It is under the shade of the muyong where rituals are performed, including the canao – a thanksgiving feast for a bountiful rice harvest and favours obtained from the gods. Feasting on butchered pigs, tribal dancing and partaking of rice wine (tapuy) highlight the celebration.

**Customary laws**

Considering the values, benefits and attachment of the muyong to Ifugao families and the community, it is understandable that these small, forested areas are valued highly. In fact, the Ifugao are willing to fight and stake their lives to protect their muyongs. Thus, the tribe has evolved customary laws to settle conflicts over ownership and use of muyongs. The research conducted by Napoleon Hangdaan, himself an Ifugao, provides a detailed account of the processes that govern conflict resolution relating to the muyong.

Ifugao may gather fuelwood from muyongs, even without permission from the owner — but only dead branches may be collected. This privilege must, however, be reciprocated by cleaning a portion of the muyong. Repayment in the form of muyong cleaning and tending is required even if the person gathering fuelwood is a relative.

If a tree is harvested, the person who fells it must plant two replacement trees and clean a large area of the muyong in repayment. The owner must give permission for harvesting and specify the exact trees to be cut.

A person caught stealing from a muyong is brought before tribal elders and severely reprimanded. The miscreant is also required to recompense the owner of the muyong. In case of a second offense, the owner can demand restitution through a third party negotiator. A third offense is perceived to indicate that the perpetrator lacks respect for the owner and the issue may end in violence.

Boundary conflicts are usually a more serious issue. Conflicts arise in the absence of clearly defined boundary lines and markers, or intentional shifting or removal of boundary markers. Conflict may also arise if two individuals claim the same former uma area whilst it is undergoing natural regeneration. In this instance, generally, both parties claim that their respective forefathers were the people who first cultivated the area.

To settle a boundary conflict, an ordeal called haddaccan — involving the two contending parties — is performed. The term derives from the word thadac, which means “to rectify a mistake,” or “to put to right a wrongdoing.” The ordeal is performed in either of two ways: either i bultong or i uggub. The two parties, through a mediator, agree on the process that will be used.

The i bultong ordeal is basically a wrestling match between the two parties in conflict. The wrestlers need not necessarily be the actual persons in conflict; they
may substitute a carefully chosen relative to represent and fight for them. Attempts are made to ensure the opponents are evenly matched. In fact, the essence of the contest is to be evenly matched, so that justice, rather than strength, is perceived to dictate the outcome.

The *i uggub* ordeal involves the protagonists throwing *runo* (reeds) fronds and eggs at one another. After the performance of either of the two ordeals, a peace-making rite called *hidit* is conducted. This is to thank the gods for the result and to commit that both parties will peacefully abide by it. *Hidit* is conducted to ensure a firm reconciliation between the two parties — in the presence of many witnesses.

Following the establishment of the Regalian Doctrine, which states that all natural resources — including lands of the public domain — belong to the state, the *muyong* lands of the Ifugao became (officially) the property of the Philippine Government. This government claim has been resented by the Ifugao for many decades, as the tribe considers that it occupied and “owned” the lands long before the Spaniards arrived and centuries before the establishment of the Philippine Republic. Though dissatisfied with the situation, many have lodged declarations for their *muyongs*, which give a semblance of tenure. This arrangement requires that the government be paid a minimal annual fee.

“People first”

In recent years, a paradigm shift — favourable to the Ifugao — has occurred within the government, particularly within the Department of Environment and Natural Resources (DENR). Moving from a stance of indifference towards upland dwellers, the DENR has, since the mid-1970s, advocated more people-oriented policies, and has begun to regard the Ifugao as partners in upland development. During the past 20 years, the DENR has adopted Community-Based Forest Management as a banner programme, with a philosophy of “People first, and sustainable forestry will follow.”

Building on the Integrated Social Forestry Program (an early thrust towards participatory forestry, commencing in 1976) a series of people-friendly DENR programmes has followed. These include a process that issued Certificates of Ancestral Domain Claim. These certificates provided tenurial security for 50 years, legitimizing the presence of indigenous cultural communities in areas where certificates were approved. A number of Certificates of Ancestral Domain Claim were awarded to the Ifugao. This arrangement has afforded tribal members with legal recognition of their rights over their ancestral domain (including the exclusive rights to occupy the land, to develop it and to enjoy the fruits of their endeavours).

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2 This dates back to the arrival of the Spaniards in the Philippines when the country was declared property of the King of Spain. This has since been an overriding principle guiding the development of laws and programmes on natural resources. The present formulation has its origins in the 1935 Constitution.
Conclusion

Despite receiving the Certificates of Ancestral Domain Claim, many Ifugao remained apprehensive over the 50-year tenurial duration. The mindset of the Ifugao to ownership is not time-bound, and any duration of tenure is inconsistent with this view. These apprehensions were finally erased with the passage of landmark legislation in 1997 — the Indigenous Peoples Rights Act (1997). Devised by Senator Juan Flavier, himself a member of the Igorot tribe under which the Ifugao are categorized, the new act provides for an absolute Ancestral Domain Title. It also promotes the incorporation and practice of local people’s customs and traditions in the development and management of their land. The law helps Filipino ethnic communities to fulfil their aspirations for self-determination, while enjoying the blessings of their locally managed natural resources. Thus, the Ifugao finally are assured the rightful ownership of their muyongs and adjoining lands.

“Our muyongs will be there to stay, till the end of time,” declared Ifugao documentarist Hangdaan. The present indications are that they will be — playing key roles in supporting the agricultural production systems, and the cultural and significant values of the Ifugao people, far into the future.

Bibliography


About the authors

Dr Rogelio C. Serrano holds a doctoral degree in Forest Ecology and Community Development from the University of the Philippines at Los Baños, where he has completed a dissertation on the Environmental and Socioeconomic Impact of the Ifugao Muyongs. He is Director of the Forestry and Environment Division of PCARRD. He also serves as consultant for the Philippine Environmental Governance Project being implemented by the DENR.

Mr Ernesto A. Cadaweng holds a baccalaureate degree in forestry from the University of the Philippines at Los Baños. He has served as forestry consultant for the USAID-funded Natural Resources Management Program and several other donor-supported projects. At present, he works as field manager for the Bagong Pagasa Foundation, Inc., a non-governmental organization implementing forest conservation projects on Palawan Island in the Philippines.
Ifugao woodcarvings reflect the people’s relationship with nature and their gods (courtesy Patrick Durst).