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# Traditional Water Management Practices of the Kankanaey

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**Author: Eleanor P. Dictaan-Bang-oa** (</author/eleanor-p-dictaan-bang-oa>)

*Traditional religious beliefs and customary laws have enabled the Kankanaey of Besao in northern Philippines to sustain their land's natural resources despite current challenges.*

With agriculture as the backbone of life and rice as a staple food, water is valued as much as land in Besao. This municipality in northern Philippines is home to more than 10,000 people of the Kankanaey ethnolinguistic group. Currently, Kankanaey traditional management of critical water resources is challenged by depleted water supplies, deforestation, overlapping claims to water sources, "alternative" development strategies, insufficient infrastructure, and cash crop extension.

### Challenges to Besao Water Supplies

Since most Besao water sources are in the mountains, deforestation of mountain watersheds by fires and unregulated logging has become a serious problem. There are reportedly 104 hectares of critically denuded areas in Besao (Besao Municipal Profile). Causes include deliberate burning by animal grazers and indiscriminate logging of traditionally managed forests to meet the growing demand for housing materials. The lack of water reservoirs or a comprehensive distribution system results in inequitable supply, especially of domestic water in the increasingly populated areas around municipal centers.

Overlapping and conflicting claims to water sources presented by national and local governments have aggravated the problem. The people of Besao are denied the right to fully own and manage their ancestral lands under the Regalian Doctrine. [The Regalian Doctrine is a provision in the Philippine Constitution which states that the state owns all lands that are not registered as private lands. Since most indigenous peoples never registered land, their lands are now considered "public lands" and are being targeted for development projects.]

At the local level, there are disparities in the territorial definitions of local governments and the traditionally indigenous-defined and managed areas. With the implementation of the Indigenous Peoples Rights Act (RA 8371) of 1997, these conflicts have become more pronounced. For example, Besao's ownership of the Buasao and the Banao water sources is contested by the neighboring Sagada municipality. In addition, the 2000 Besao Municipal Development Plan has identified tourism, logging, and mining as "alternative development strategies," which would add to the competition for water and other natural resources.

Besao is one of the highest producers of rice in the province; its wet rice farmers are dependent on a sufficient and reliable source of water. Recently, however, the search for new sources of cash income has prompted increased commercial vegetable production. Increasing cultivation of new commercial crops of temperate vegetables and other high yielding crops has extended the use of agricultural lands and intensified the demand for water.

Despite these pressures, the farmers of Besao have steadfastly maintained their traditional practices and adjusted them to meet contemporary challenges. To maintain their stable, sustainable livelihoods, it is critical that these indigenous peoples continue to control and manage the water resources on their ancestral lands, as they have for centuries.

### **The Role of Customary Law and Religious Beliefs**

The /Besao (people of Besao) acknowledge the major role their religious beliefs and customary law have played in the sustainability of the area's still rich natural resources.

These culturally prescribed behaviors are part of the *inayan* and *lawa* concepts that govern the day-to-day behavior and relations of the Besao people. The people define *inayan* as the embodiment of Besao customary law:

“Our customary laws are embodied in the *inayan* or *lawa*, which discourages any act that causes harm to anybody or anything and forbids the violation of norms. It appeals to one's conscience to judge the rightness or wrongness of what he/she does or plans to do and cautions the person through some form of ‘punishment’ to be carried out by Kabunian (God) for wrongdoings. It is a simple command of ‘don’t’ that is replete with values like respect for other people and nature, justice, morality, harmony, sharing resources and helping one another among others...” (Besao Ancestral Domain Management Plan, 2002.)

The *ʔ*Besao regard water as life itself that needs sustenance in order to perpetuate itself and man. This notion is embodied in the concept of *nakinbaey*, a supernatural being believed to inhabit most water sources and other sacred sites in Besao. Among the Besao people, water is believed to be produced by the *nakinbaey*. To ensure water supply, therefore, the *nakinbaey* must be pleased and kept from leaving the source. This requires people to consciously respect the water source by observing culturally prescribed behaviors.

Grazing animals near or above water sources, for example, is prohibited. Fields above water sources must be tilled manually. The breath and waste of cattle are believed to be repulsive to the *nakinbaey*.

To the *nakinbaey*, all death is repulsive; therefore, people transporting dead human and animal remains must not pass near water sources. Community members in mourning avoid approaching water sources for about three years, relying if necessary on the services of others for their water needs.

Keeping the water clean is also a conscious practice among the *ʔ*Besao, who consciously do not spit or use soap near water sources. Washing of clothes and equipment used for chemical agricultural inputs is done away from the water sources.

Displeasing the *nakinbaey* results in its abandoning the area. Besao elders recall two water sources, in Kinpit-ek and in Betak, believed to have abandoned by the *nakinbaey* in the 1940s. If it does not leave the area when offended, the *nakinbaey* reduces its water production. Water from most sources in Besao has reportedly been decreasing. Some elders attribute this to the non-practice of *legleg*, a cleansing ritual officiated by community elders with the participation of all water users to appease and please the *nakinbaey* inhabiting the

water source. In recognition of positive traditional practices and values, there is an increasing community support for the revival of the legleg as reflected in Besao's Ancestral Domain Management Plan, accepted in 2002.

### **Shared Water Ownership**

Water is considered a shared resource that cannot be privatized. While ownership is communal, priority rights to water systems are vested in the community of farmers who first tapped the system for their use. Rights also are claimed by the community through which the water naturally flows. No one is allowed to divert water from its natural course or from existing irrigation systems without consent from the communities that depend on it.

Rights to access and use water for irrigation come with the right to land. The transfer of water rights follows the transfer of land ownership through sale, barter, or inheritance.

In cases where water sources are found within traditionally private lands, the landowner has rights to the land but not to the water. He has priority to use the water but no discretion to divert or stop the flow of the water.

The Kapusean source in Suquib, for example, is located within the rice field of the farmer Gan-i. The spiritual regard for water and community rights to own and access the water, however, prevail over Gan-i's ability to farm all year round. As recalled by Joaquin Anosan of Suquib, all the farmers using the Kapusean source downstream of Gan-i's field have agreed to give a part of their harvest to Gan-i in exchange for his lost opportunity to continuously farm his field. Today, Gan-i's grandchildren have been allowed to use the rice field but are restricted by the community from using farm animals in tilling it.

### **Irrigation Procedures**

Out of the 88 communal irrigation systems listed by the municipal agricultural office, 78 are classified as "private" (privately constructed by the farmer/user). These are the traditional irrigation systems that were used by the parents or grandparents of the present owners.

Farmer-irrigators using a common water source belong to the *dumapat*, an informal organization particularly concerned about the equitable access to and distribution of water. There is no designated head for each *dumapat*, but leadership is usually attributed to the knowledgeable elders or to the most articulate.

### **Cooperative Dumapat Water Management**

Dumapat membership is based on ownership of traditionally irrigated land along the downflow of the water. Thus, present-day farmer-irrigators trace their families' membership in the *dumapat* back at least four to five generations.

All irrigation water matters are taken to the dumapat, from the establishment and day-to-day maintenance of irrigation canals to conflict resolution. Dumapats are particularly mobilized during the dry season when water supply decreases. From January to February, the dumapat cleans and rehabilitates irrigation canals and structures installed in the water source area to facilitate easy flow of water to the rice fields in the dry season (March to May). Each member family of the dumapat sends at least one representative to these cleaning up activities. Members who are not able to participate are fined in cash or in kind based on their capacity to pay.

The depletion of the water supply during the summer prompts the dumapat to monitor the equitable distribution of water to the fields. Watering the fields is done through a four-day *banbanes* (taking turns) system, in which each dumapat member has a scheduled time for watering.

During the *banbanes*, a dumapat member has the right to stop the water flow but only within the time allotted to water his fields. The member does this by creating temporary mud walls that cut across the canal or by temporarily removing installed troughs that supply water to other fields. Members of each dumapat are expected to watch for their turn. Once a field is filled up with water, the next field-owner temporarily removes the mud wall to water to his field.

If a turn is missed, the member has to wait for the next cycle. Dumapat members keep vigil to ensure that their fields are watered. Time allocation for watering fields is strictly observed. Whether or not fields are fully watered during one's turn, the water has to be given to the farmer next in line when it is due. To minimize risk or crop loss due to water scarcity, farmers estimate the amount of water available during the dry season and plant accordingly.

In the spiritual realm, all dumapats are expected to perform the *legleg* ritual annually at the start of the dry season. This is traditionally done after planting to appease the *nakinbaey* and ensure continuous generation of water.

### **Forested Watershed Maintainance**

Effective water management also requires the *ibesao* to maintain the watershed and to recognize the relationship between forest and water resources. Community initiatives to sustain water supply involve fencing the water sources, supporting natural forest regeneration, and voluntary reforestation. The *ibesao* have a tradition of selective timbering and have made a conscious effort to regenerate forest cover through the active maintenance of the *pagpag* and *batangan* (mossy and pine forests).

The pagpag is the communally owned mossy forest that the community uses for forage, hunting, fuel, and timber needs. The batangan are privately owned woodlots that are a major source of timber and fuel wood. Lots may be individually owned, but most of the batangan lots are clan owned. All clan members have equal rights to the timber resources. After cutting, a member is expected to plant trees to replace those cut.

Governmental and traditional initiatives curb deforestation as well. Local government ordinances include banning the transport of timber outside the municipality, prohibiting the burning of mountainsides, and imposing fines on violators. Interbarangay policies impose on each barangay responsibility for preventing fires and indiscriminate logging in its area.

One barangay is accountable to another if it is proven that a forest fire was started from its side or territory. This practice is built upon the *mendepdep*, or the traditional voluntary effort among community members to be vigilant about forest fires, especially when properties such as granaries, timber, fruit trees, and animal fences and houses are involved.

Deliberate reforestation and support for natural regeneration of trees in pagpag and batangan areas are traditional practices among the /Besao. These practices have been strengthened through local government institutionalization that encourages planting tree seedlings near settlements to serve as fuel sources. Communal forests, such as the LAGAT communal forest, which is co-owned and co-managed by five barangays under agreed rules and regulations, also have been established.

Based on mutual respect, equity, and reverence for nature, water management among the /Besao has set a high standard for water allocation and protection. Left to their own devices, the people of Besao have evolved sophisticated and effective methods to protect, allocate, and manage their water resources that can serve as a model for all humanity.

*Eleanor Dictaan-Bang-oa, who traces her roots from Besao, is currently a staff member of the Gender Desk of the Tebtebba Foundation (Indigenous Peoples' International Centre for Policy Research and Education). Tebtebba is an NGO in consultative status with the Economic and Social Council of the United Nations. Dictaan-Bang-oa's work and research have focused on indigenous peoples' rights, culture and knowledge, conflict, and development.*

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