

TRADITIONAL ARTISANAL GOLD MINING AMONG THE KANKANA-EY AND THEIR CURRENT CONCERNS

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INTRODUCTION

I would like to start by making a slight change to the title of my paper to Traditional Artisanal Gold Mining Among the Kankana-ey and Their Current Concerns. In the Philippines, these miners are also called traditional small scale miners. The ethnolinguistic affiliation of indigenous people miners in the Philippines is important because not all indigenous people in the Philippines come from a tradition of small scale gold mining. To label a community as a traditional small scale mining community one must look at the community within its historical and cultural context. Components of a tradition of small scale mining include technology, settlement patterns, social and political organization, property rights, and religion to name a few. To date, the traditional small scale miners are confined to the Kankana-ey of Benguet Province. There may be other such groups in the Philippines and this will require further research. Therefore, not all indigenous communities who mine for gold in the Philippines are traditional small scale miners.

Who are traditional small-scale miners? The implementing Rules and Regulations of the People's Small Scale Mining Act of 1991 or Republic Act 7076 defines traditional small-scale miners as "Filipino citizens who have a distinctive socioeconomic cultural tradition with a subsistence base focused on small-scale mining. They live in stable sedentary communities and employ a mining technology that is labor-intensive and simple; and employ physical separation methods for the extraction of mineral/s and/ or metal/s from the ore."

An understanding of the traditions of the Kankana-ey as small-scale miners is best appreciated by placing them in their historical context and by a description of their culture.

HISTORICAL AND ARCHAEOLOGICAL DATA

Gold is one of the earliest forms of metal found in the Philippines. The first appearance dates back to about 300 to 500 B.C. and is from the island of Palawan. Historical evidence argues that the present day Kankana-ey are part of a 800-year-old small-scale mining tradition. A Chinese record written between 1209 to 1214 indicates that the Philippines was drawn into a large gold trade network established by the Sung Dynasty. There are meticulous Spanish records regarding gold from the 1500s to 1898.

This historical evidence is based on Quirante when in February of 1624 he led an expedition to locate gold mines and entered the Benguet area where gold-mining was already thriving. His documentation gives detailed accounts of the expedition. He noted various characteristics of the lode mines and their miners. He describes miners with their wives and children going to the river during the rainy season to wash sand in streams and collecting small stones to recover gold. The ore was then crushed by a “stout rock” and “other smaller stones” by hand until the ore was reduced to powder. It was then washed in streams where the gold dust or grains were recognized by their gleam in the sunlight. The large grains of ore were milled and washed several times for its gold content. I recorded similar tools and mining practices among the Kankana-ey. Based on my research this act of collecting “small stones” for its gold content along the streams and rivers is called *sen-eng*. (Caballero 1996)

Quirante describes place names and locations which according to Keesing (1962) are recognizable in present day settlement areas. Among these is Antamog, now the modern Antamoc mining area of Benguet Corporation; and Conog, the modern Balatoc-Itogon area where my research sites are located. Thus it would appear that settlement in this area has been stable for at least 400 years.

There is also archaeological evidence to support the argument of a stable settlement pattern in the Balatoc-Itogon area. An archeological survey in 1991 discovered two habitation sites and four burial caves. Test excavations were conducted at one of the habitation sites with the conclusion that it represents a gold processing site which pre-dates the occupation of Dalicno one of my research sites. The types of artifacts found, especially the grinding rocks, are mentioned by the Spanish when they described the manner in which gold was processed. Grinding rocks are still being used by present day Kankana-ey.

ETHNOGRAPHIC DATA

The following is an ethnographic description of the Kankana-ey miners derived from data collected from 1979 through 1990s. This is followed by a presentation of their current concerns based on interviews with Kankana-ey informants, the local government unit of Itogon Municipality, and personnel from the Mines and Geosciences Bureau of the Philippine Government. The Kankana-ey miners live and work in close proximity to former large commercial gold mines, Benguet Corporation and Itogon-Suyoc Mines.

Traditional Ownership

Among Kankana-ey miners, the founding members of a community become the nucleus of a corporate descent group. During their lifetimes they are the elder leaders of the community and are called *panglakayan* or *lallakay*, both male terms of reference, and are held in the highest esteem. When the elders die they become anitos and join the ranks of the ancestors.

Traditional small-scale miners believe that ultimately their god (*Kabunian*) and *anitos* (spirits, ancestors) own the resources and a group of elders (*panglakyan*) manage these resources for the community. Consultation and the resolution of conflicts regarding mining is through the elders. They determined the party at fault and impose on them the necessary penalties (e.g., the party at fault is punished by not being allowed to continue mining in his/her tunnel).

The elders own and manage the primary resources of the community, and these traditionally included mineral, agricultural, cows, and water resources. The descendants of this corporate group are entitled to the use of the primary resources (for example, subsurface claims for mining or land for swiddening) and can own the gold which they mine and the crops which they grow. Other individuals may acquire temporary-use rights (rights of usufruct) by affiliating themselves with the corporate kin group. For example, miners have use rights to the tunnel and only own the gold extracted. A miner's use rights ceases once he/she abandons a tunnel. Other miners may be given permission to mine on lands where rights to surface or subsurface areas are owned by another ethnic group or a commercial mine.

A husband, wife and their extended kin work together in both placer and lode mining. While both men and women participate in mining, some tasks are performed more by women. The processing of gold is a woman's job, as are the performance of household tasks. Women are involved in the mining and processing of gold-ore or gold-bearing sand, and in the decisions regarding the health, education or the general welfare of the community members.

Lode Miners

I would now like to discuss lode and placer mining. Underground mining involves the digging of tunnels following the lode. The extraction of gold is generally a family activity where both women and men participate in mining. A woman with the red bonnet is chiseling at the ore. New tunnels are located and opened through a combination of ritual, prospecting and/or visual. Old tunnels may be re-mined. Decisions as to which tunnels to mine are made after consultation with the previous owners and the elders.

The man or woman who owns a tunnel is called a supplier. Suppliers finance the expenditures needed for the tools and food of their workers. The number of miners in a tunnel can range from three to thirteen or more and is dependent on the number of shafts mined and the money the supplier can provide to finance the venture.

Prior to 1979 very few small scale miners had ballmills. A majority used the basalt mortars and grinders for milling the ore. However, after the early 1980s there was an increased in the number of ballmills /rod mills in the community because Benguet Corporation and other operators increased their gold production by purchasing the tailings of the traditional small scale miners. In the early 1990s there were at least 5 CIP plants that were put up in one lode mining community while 1 heap leach plant was placed in one placer mining community.

Placer Mining

Placer deposits are commonly treated by sluicing to concentrate the valuable material.

The work force in placer mining consists of family units divided into pairs, for example, a husband and wife, a mother and daughter, or a mother and son; however, mining can sometimes be done alone. In placer mining rock wall channels with floodgates called *kaangs* are built in the river bed. These channels can range from 25 to 59 meters in length and function as launders which are constructed from rocks dug while mining the river. Towards the end of the channel is a sluice box. A portion of the river is directed through the channel in order to carry away lighter rock and waste material. The sediment inside the channel is sifted several times through the sluice box until *linang* which is substantial amounts of tiny gold particles along with minute amounts of sand with pyrite, nonmetallic rock grains and metal shavings are in the sluice. At the end of each workday, the gold-bearing sand is brought home and placed in containers.

Rights to where to locate a channel are based on a first-come-first serve basis and are temporary. A channel may be worked for as long as one wants to mine it, and for as long as it is not destroyed by the heavy rains. Abandoned channels can be mined again by another as over time the river washes gold bearing sand into the channel making it again productive. Ownership is also transferable to another miner.

Processing

It is in the processing of the ore and concentrate that the Kankana-ey women are known to excel.

When large quantities of ore are processed, the miners use small mechanized, fabricated crushers. The crushed ore is loaded in rod mills or ball mills for grinding. When small quantities of ore are processed basalt and iron tools are used for grinding. After the ore is crushed in the rodmill or ballmill, women do the processing and smelting. It is not uncommon to see men process the gold ore, but even they say the women are better at processing, especially with the handling of the separator (*sabak*). This figure is a flow chart of the gold recovery process.

The Kankana-ey women use physical separation techniques to separate gold from ore. Through 1995 there was a marked contrast between traditional small-scale miners and gold rush miners. In the gold rush areas much of which is the ancestral domain of indigenous peoples, mercury is used in the recovery of gold. By contrast, the traditional small scale miners employ milling, gravitation and panning methods for gold recovery. Unlike gold-rush areas, traditional miners used painstaking measures and great care to recover gold from virtually all the solids and also recycle the water used in the process. The miners scrape the surface of the soil around the work and roasting area, collect this soil in sacks and process it for its gold content (or *kidkid*); crush and regrind the used

crucible (*gangi*); and recycle the middlings and panning tails (*kibo*) in the holding tank (*dayasan*).

There was a symbiotic relationship between Benguet Corporation while it was in operation and the Kankana-ey placer miners prior to the early 1990s. During this period the Kankana-ey sluiced the tailing's pond of the commercial mines (*saksak*); burned and sluiced the woodchips from Benguet mill's classifier (*kuyos*); collected ore with free gold from Benguet's mullock area (*sen-eng*), sluiced the mullock's gold content, and sold the sand and gravel derived from sluicing to buyers from the surrounding communities and the city. Benguet Corporation also contracted the placer miners for the rocks they set aside while building their channels (*kaangs*) for construction of their three tailings dams and other infrastructures.

The tool complex for milling gold-bearing sand is made of small basalt rocks derived from the river. After the ore is crushed, it is milled using a tool complex of basalt grinders and mortars. The crushed ore is milled with a large lower grinder called an *alintegan* and an upper stone grinder called an *alinteg* until the ore is ground into the fine texture of what they call *linang*, resembling very much the gold bearing-sand mined from the river.

After milling they pan the concentrate in a galvanized iron separator (*sabak*) over a small holding tank (*dayasan*), where the gold is separated from the unwanted materials. Some men have been observed panning with a separator, however, the women are known to be more adept at separating the gold during this procedure.

After panning the sluice concentrate is further milled with other grinding rocks. The panning concentrate is ground several times until a powder like consistency with substantial amount of gold grains is achieved.

Sometimes it is not uncommon to see the processors squeezing the juice from leaves of sunflower, tobacco, calamansi or sayote over the concentrate. This is to prevent the very fine gold from floating. After this step the panning concentrate is placed back into the separator for further panning. What remains after this procedure is almost pure gold.

Smelting the Gold

After this final step of milling the gold grains are wrapped in plastic and sprinkled with about 1/4 teaspoon of borax for flux. This is placed in an earthenware crucible and brought to a smelting area, where the crucible is placed in an open furnace and covered with charcoal.

When smelting is complete, the remaining mass is picked up with tongs and placed in a cup containing water, cooled and the slag is knocked off exposing a gold bead. This is weighed on a balance scale and sold to dealers located either within the community or the nearest city.

Sharing the Ore and Concentrate

One of the striking and unique features of the Kankana-ey traditional small-scale miners are the social mechanisms which allow them to share the ore which they mine and the concentrate acquired during the processing stage. The most common ways of sharing are through *sagaok* and *makilinang*.

Sharing the Ore (*Sagaok*):

Sagaok is the process of going from one tunnel to another requesting for gold ore. It is not uncommon to see a line of men and women of varying ages waiting outside a tunnel with their knapsacks to request gold ore (*makisagaok*). Usually while one is waiting for gold ore, one also helps the owner clear the mullock in the tunnel. Traditionally ore with gold was always given first to the elder women and men, although miners refer to elder women more than they do to men when they talk about *sagaok*.

Sharing the Concentrate (*Makilinang*):

Another way of sharing gold is through *makilinang*, a process of distributing gold through the sharing of the concentrate. Men and women of varying ages can request concentrate (*linang*), although this is mostly the women's and young adult's activity. In their tradition, elder women need not ask for *linang*. They are given concentrate and need not be present during the gold extraction process. Because of this, the processor always sets aside some concentrate (*linang*) to be shared with the elder women within the community. In both practices of *sagaok* and *makilinang*, elder women always had first priority to the shared ore or concentrate.

This cultural practice of sharing the concentrate reinforces the concepts of recycling and the processing of other materials during the recovery process. It encourages and continues the practice of the physical separation methods in gold extraction. This is a dimension which makes the Kankana-ey unique and is one of the major factors which contributes to the continued success of their technology through time.

Processing areas are traditionally placed by their homes and facilitate the work of both men and women when it comes to household chores like cooking, care of the children and their elders. In addition, family-centered processing areas are also venues where affairs and decisions of the community are discussed.

Rituals

“There will always be gold. We will never run out of gold, but you have to mine it the right way.” Mining the right way involves not just their technological system. It also involves their social and ritual systems. Mining the right way means management of the resources by the deities, spirits or *anitos*, and the elders who give the gold and other natural resources to the community.

A majority of the rituals are performed to ward off sickness or to avert bad luck in mining, such as not finding gold ore. All the rituals secure the good will of the deities

and spirits. The Kankana-ey's performance of rituals and the respect of taboos assures them of a continuous supply of gold in their lode and placer deposits, their swidden fields and other livelihood endeavors; luck in their gambling; wealth and a long and healthy life.

Taboos which relate to mining and rituals are numerous. When taboos are broken the Kankana-ey believe that the deities and spirits who own the gold will hide it, thus making it difficult for the community to mine. Taboos which prohibit one from mining are for those who eat the meat of cows, dogs, goat, duck or eel as these are considered to have an offensive smell; women menstruating; and during periods of abstinence by the community called *ngilin* for life cycle rituals (birth, weddings, death, sickness), among others. Rituals have to be performed if taboos are broken to appease the gods so that misfortune will not only befall the person who broke the taboo but also the families of the workers including the claim owner.

The period of abstinence (*ngilin*) mining and other work which is performed during and after each ritual can take anywhere from a few days to several weeks. The rituals function in part to regulate the over-exploitation of gold during the periods of abstinence (*ngilin*). The value of tradition and of customs which have been put into place for the proper management of the resources and for the continued unity of the community are emphasized during rituals. Rituals to appease the gods who own the gold have to be performed so that they may share their gold with the living. Like the gold they share when they *sagaok* and *makilinang*, rituals, and other community projects are a collective effort involving everyone's participation.

It is the role of the elders to see to it that the taboos are not broken and the proper rituals are held so that the deities and *anitos* may look favorably upon the community and their mining and other livelihood activities.

CONCERNS OF THE KANKANA-EY (1990s to the Present)

Compared to the vast areas available for mining in the past, the areas where traditional small scale miners lived and mined have decreased over time as their communities have been displaced by large mining companies. One of the main concerns of the Kankana-ey at present is the survival of their communities and traditions amidst the earlier expansion of operations of large commercial mines, and the influx of migrants due to new forms of production activities of these mines. I would now like to discuss how the Kankana-ey are affected by their proximity to large commercial mines. The period covered is from the 1990s to the present. In summary these are:

1. In 1990, the granting to Benguet Corporation of an Environmental Compliance Certificate to conduct Reverse Circulating Drilling and Trenching in Dalicno.
2. In 1991, the introduction of RA 7076 also known as the People's Small-Scale Mining Act

3. In 1993, the start of the Itogon-Suyoc Mines Load and Haul Operations
4. In 1993, the collapse of the tailing dam of Itogon-Suyoc Mines.
5. In 1995, the passage of the Philippine Mining Act.
6. In 1997, the passage of the Indigenous Peoples Rights Act or IPRA
7. In 2001, the start of the Antamoc Contract Mining Project (ACMP) of Benguet Corporation.

Benguet Corporation's Drilling Operations

In 1991 during Benguet Corporation's Drilling Operations and later in 1993 during the Load and Haul Operations of Itogon Suyoc Mines, the Kankana-ey of Sitio Dalicno saw these operations as negatively impacting their homes, water sources and mining tunnels. Their response as a community in both years was to barricade the road where these 2 mining companies had their operations.

Itogon-Suyoc Mines' Load and Haul Operations and Tailings Dam

As for Itogon Suyoc Mines it was during their Load and Haul operations in 1993 that their tailings dam collapsed and endangered the Municipality of Itogon. The collapse of the dam fueled the resistance of Dalicno for now they were joined by the Municipality and together they successfully opposed the operations of Itogon Suyoc Mines. During their intense resistance men and women of all ages barricading the area where the company's machinery was operating.

Today, while Benguet Corporation and Itogon-Suyoc Mines have stopped their operations they continue to hold on to their claims and are governed by the Philippine Mining Act of 1995.

Small-Scale Mining Law and IPRA

The introduction of the Small Scale Mining Law (RA 7076) in 1991 faced resistance in Benguet Province. The law ignored the existence of traditional small-scale miners as all the statute's provisions were premised on the misconception that all such miners are of the type exemplified by gold rush miners many of whom are located in Mindanao. Many opposed the implementation of the law in Benguet Province. Those who are indigenous people do not see the need for permits (the procedures for which are complicated) to make their activities legal as they consider their areas of mining as part of their ancestral domain or ancestral land, and the rights of these are protected under the Indigenous Peoples Rights Act (IPRA) which was passed in 1997.

While the IPRA law is increasingly empowering IP communities in the Philippines in the recognition of their rights as indigenous people, in its implementation the assertion of identity through one's ethnolinguistic affiliation is causing divisiveness in communities particularly in areas where different ethnolinguistic groups have been co-existing over time. For example, in the southern part of Benguet Province some Kankana-ey traditional small scale miners are at present in conflict over land issues with the Ibaloi, who are also indigenous to the area. The Ibalois claim that they and not the Kankana-ey are indigenous to the area and have applied for Certificates of Ancestral Land Titles under the IPRA law.

Acupan Contract Mining Project (ACMP)

(The data regarding the ACMP was derived recently from informants who are from the Kankana-ey (five), from the Mines and Geosciences Bureau (two), and from the Local Government Unit of Itogon Municipality (one). This data will need to be verified further with field research but is presented here as exploratory points for discussion and further investigation).

The early and the late 1990s saw the decline of large mining companies in Benguet area. Benguet Corporation and Itogon-Suyoc Mines suspended operations due to the depletion of mineral resources, depressed metal prices, and the high cost of operations; however, as mentioned earlier they continue to hold on to their mining claims. Traditional small scale miners in the area cannot acquire the right to mine what is left of the deposits. Under the IPRA law, indigenous peoples in these areas have the right to claim their ancestral domain and ancestral land areas.

In 2001, Benguet Corporation reopened its Acupan mine and contracted production activities to small-scale miners. Called the Acupan Contract Mining Project (ACMP), Benguet Corporation contracted production activities for two years to small-scale miners. Contracts to mine the abandoned tunnels are through a bidding system and have attracted small scale miners from other areas in the Cordillera including those from the lowland areas. There is a sharing scheme between the mining company and the contractors. Some of the Kankana-ey are contractors and sub-contractors; the others are other indigenous people and non-indigenous people who have successful bids to work on the ACMP.

The entry of migrant contractors into areas occupied by traditional small scale mining communities has become a point of concern for the Kankana-ey. In their folktales stories are told of how the elders of Benguet Corporation had agreements with the elders of Dalicno and gave the latter permission to mine certain areas of the Benguet Corporation claim. With the current increase of in-migration of other small-scale miners they see themselves as being further marginalized from areas that they should have the right to mine, and indicate that Benguet Corporation should give to them the abandoned tunnels to mine as communities and to not contract these to outsiders.

In ACMP, under the contract system the mining and the processing of ore is segregated by gender. It is the men who mine the tunnels and the Kankana-ey women (many of them wives of Kankana-ey miners) are hired to pan (*dayas*) the sluice concentrate. Kankana-ey informants indicate that the sharing of concentrate (*makilinang*) occurs only among their co-villagers (*kailian*), and that those from other ethnolinguistic groups do not know how to share and prefer to sell their concentrate. They also add that in the sharing scheme, a large percentage goes to the contractor and little goes to the workers.

There is the question of environmental protection and safety in the ACMP mines. There are stories of tunnel collapse and death, of old mine timbering being used to support tunnels and of pillars being mined. The improper disposal of tailings is also an increasing concern.

Other Concerns

Environmental:

Access trails and small scale mining claims have eroded or are vulnerable to erosion from those abandoned tunnels left by the large commercial mines, causing accidents and deaths in some instances.

As the large commercial mines have stopped operation, traditional small scale miners do not know who should be accountable, because according to them, “Who can they bring to court, when those that own the large mines are no longer there? It is contractors.”

There is also the lack of wood for mine timbering. The policies of the Department of Environment and Natural resources prohibit the cutting of trees, but timber is needed for safety. In addition, there are no longer places for getting timber as the trees are small and few.

Health:

There are a few heap leaching plants in traditional small scale mining communities in Itogon Municipality, and these operate depending on the supply of ore. The Kankana-ey are concerned with the sale of cyanide by suppliers to the community and its improper disposal in the community drainage system and into the river. There are occurrences of skin irritations and incidences of suicide from the intake of cyanide. The mid-wives and barangay health workers have little resources and lack the capability to mitigate these problems.

A few individuals are also reported to be experimenting with mercury. Some tunnels are also overcrowded with men and women miners. Poor ventilation in the tunnels has increased the incidence of airborne disease and there is concern over the rise in cases of pulmonary tuberculosis (PTB).

When queried as to how much of the traditional technology is left, the Kankana-ey say that a majority use ball mills when there are large amounts of ore to be milled; and the

more traditional tools of double-edged hammers and basalt milling tools such as the *gaid* and *alinteg* for lesser amounts of ore.

Degradation of traditional values:

There is the concern for the degradation of traditional values. Many of the elders have died. When those that are left meet to counsel the next generation of men, there is the tendency for some of the men to no longer listen to the elders advice and counsel. Informants gave examples of indicators of the degradation of traditional values.

- Taboos of abstinence from mining when eating carabao or dog are being violated and the periods of abstinence after a ritual are cut too short.
- In the sharing of the ore (*makisagaok*) they complain of others who do not share as much of their ore. Informants also say that there are thefts from tunnels and one has to have a constant presence when their tunnels are being mined. Gold ore is also not automatically given to the elders. Increasingly, even they have to be present to request for gold ore.

In the sharing of the concentrate (*makilinang*) the women observe that there are an increasing number of men who also come and request for concentrate. There are those who look unfavorably on men who are given concentrate as this is traditionally for the women. Even in sharing the concentrate, the Elder women have to be present to request for concentrate.

- Other IP women who are wives of those working with contractors in the ACMP of Benguet Corporation are learning how to use the *sabak* for panning from the Kankana-ey women.
- “Money has a stronger voice now.” (Kankana-ey informant)

Informants attribute the changes to the decreasing number of Elders; to the next generation not upholding their traditions; to the in-migration of other IP workers from the Cordillera who are not Kankana-ey, but come to work as laborers in their tunnels; to the increase in small-scale miners in the area attracted by the contract work of the larger mines; to the presence of liquor, gambling, and drugs in the community. They also say that the different religions introduced are affecting traditional beliefs. They add that when rituals occurred in the past and the period of abstinence and taboos were followed there was more gold production. The elders say that because the conduct of rituals are not being followed, and that which feeds them is not being cared, that the god they pray to *Kabunian* is mad and hides the gold from the community. That even if ore is found the sample is weak.

But, they say, their tradition of mining is still strong and is still being followed. “They remember and follow the customs when they do not find anything in the tunnels, or when there is weak to no production, then they say let’s contribute and hold a ritual to appease the gods.” So a pig is killed as an offering and a ritual (*dangtey*) is performed to increase the gold for the community. And in a week or a few months, there are those who are reported to be lucky and the community prospers.

CONCLUSION

Where the outside world from the government and the private sector need to mitigate the environmental, socio-cultural, and health concerns of traditional small scale miners their solutions for development will require an integrated approach that is culturally relevant for changes to be implemented.

The Kankana-ey have continued to survive for centuries mining gold as small scale miners. Over time, while they have been marginalized by large commercial mines their traditions have continued to the present. They speak of cultural revival...of bringing back the old ways. And those who speak are the next generation of elders, where there is more and more the participation of women as leaders. (The women have organized meetings recently to bring back and strictly enforce identification cards to monitor outsiders within their community).

Perhaps with new realizations on their part, new leadership, new initiatives, and the assistance of the outside world for increased resources and capabilities relevant to their culture, the culture of traditional small scale miners can be saved from further degradation. Thank you.

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