

8

Mountain Irrigators in the Philippines

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This paper deals with the irrigation system and social organization of the Tanowong people in the western portion of the Mountain Province, in the Northern Luzon highlands of the Philippines. An analysis is made of the organizational impact of the expansion of the preexisting traditional Tanowong irrigation works, and of the problems that ensued in intervillage conflict and enforced cooperation, as well as the Tanowong's emerging relations with the national government as they sought the sanction of the state as the ultimate guarantee of their desperately needed water rights. I propose that this irrigation expansion served to reinforce traditional Tanowong social organization and to integrate their contemporary relationships with other villages at the same time that it enhanced the articulation of the relatively isolated Tanowong community with the outside world, in particular with the structure of the Philippine national state.

The Tanowong Villages: The Social Organization of the Traditional Irrigation System

The Tanowong people occupy four villages located at varying altitudes from the bottom to the summit of a mountainside in the northern portion of the municipality of Sagada. Tanowong, the mother village, is closest to the river

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bed at the bottom of the mountain, Kadatayan stands midway to the top and is the second oldest, while Nadatngan and Madongo, on the plateau at the summit of the mountain, are the youngest villages, having been founded by migrants from the two older villages in 1915 and 1939 respectively. The total population of the four villages is estimated to be roughly 1,000 people. Although living in discrete villages, the people see themselves as one sociopolitical group separate and distinct from their neighbors. Their religious ceremonies are closely coordinated, and before the implementation of the Philippine Barrio Charter in the area, they had only one set of political officials. In spite of the recent split of the group into two different barrio governments, there is still much coordination in the social, religious, and political life of the entire group.

The Tanowong people are Bontoc culturally,¹ although most of their extravillage interactions are with the Lepanto groups, particularly the Sagada group to the southwest of them. Like the other Igorot of the area, Bontoc and Lepanto alike, the Tanowong cultivate terraced rice fields. In this endeavor they expend most of their man-hours and their religious efforts, although more than 50 percent of their year-round diet consists of sweet potatoes rather than rice. As is typical of the Bontoc and Northern Lepanto groups, the Tanowong are organized into different *dap-ay* groups. *Dap-ay* is the Tanowong designation for the men's house, which is better known in the anthropological literature by the term *ato*.² A *dap-ay* group consists of the families belonging to a particular *dap-ay* which in Tanowong would number up to thirty. The number of *day-ay* in a village vary according to size and age of the village. There are four in Tanowong, two in Kadatayan, and one each in Madongo and Nadatngan.

The *day-ay* are the religious, social, and political centers of village life,³ where major decisions are made and through which the villages are mobilized

Grateful acknowledgment is made to the University of Pittsburgh for an Andrew Mellon Postdoctoral Fellowship in Anthropology, during which this paper was written. Being a native of the Pedlisan and Tanowong area, I am familiar with the Tanowong irrigation expansion from its inception. I took a very active part in the concluding negotiations between Tanowong and Agawa during my field work in the area in 1971-72.

1. The diagnostic Bontoc culture traits that distinguish the Tanowong people from their Lepanto neighbors are use of the basket hats called *kinaw-it* or *ballaka*, the singing of the song called *alassan*, and the dancing of the war dance called *tallib*, which is also called *tallibeng* or *ballangbang*.

2. See Jenks (1905) and Keesing (1949). Although in former times *dap-ay* membership was a function of locality or contiguity so that *dap-ay* group corresponded with neighborhoods within a village, this is no longer strictly the case, although it still tends to be that way.

3. It is also an educational center for the males. Boys sleep in the *day-ay* from about the ages of six or seven until they are married. The men go there in the evenings, early mornings, and during the rest days to socialize with one another and with the young men and boys. At such times the young are trained to obey through the performance of chores assigned them by the men, like stoking the fire, scratching the soles of their elder's feet, or massaging their legs and backs. Also, the boys are instructed in village law and morality.

and grouped for communal action. While there is explicit competition among *dap-ay*, they always coordinate their efforts for the welfare of the community as a whole. The competition between the *dap-ay* is always within the framework of a "loyal opposition," with the welfare of the village remaining uppermost in everyone's thinking. Community problems are discussed in individual *dap-ay* gatherings as well as in village-wide meetings held in one of them. There is much consultation between the different *dap-ay* prior to any decision being made for the entire community at one of the meetings. Decisions binding upon the whole community are implemented through the *dap-ay* system. While each *dap-ay* theoretically has an informal council of old men who make the decisions, in actual fact, especially at present, every mature man participates in the deliberations of the council.

The *dap-ay* usually take turns assuming responsibility for the standard calendrical activities of the village. For example, a different *dap-ay* is responsible each year for performing after the planting season the sacrifice to the village sacred tree for the sake of all the village fields. Another *dap-ay* is usually assigned the performance of the main socioreligious ceremony called *begnas* for the village as a whole. While the other *dap-ay* of the village also perform ceremonies at these times, only the appointed one is considered to be the performer of the ceremony, with the others playing an active supporting role.

The *dap-ay* serve as focal points of mobilization and accountability where decisions require implementation, such as the collection of materials or money, and the procurement of labor for community trail and irrigation repairs. The *dap-ay* are important in the discussion and dissemination of information about decisions reached in a major meeting in other *dap-ay* or in meetings outside the village, such as in the municipal government centers which village officials attend. Often each *dap-ay* is assigned responsibility for specific segments of regular projects like trail and irrigation repair. In such a case, year in and year out, the members of each *dap-ay* know exactly where to go at the appointed day or days of work. Temporary assignments are similarly made. With this division of labor and responsibility, it is easy for the Tanowong to evaluate *dap-ay* performance and to spot those which do not fulfill their communal duties.

These convenient groupings within the community provide a healthy medium for competition in the performance of civic duties, since they often try to outdo one another in cooperativeness, promptness, and thoroughness in their assigned work. The *dap-ay* that lags behind is taunted by the others. In order to avoid this, each one tries to keep abreast of the rest. This spirit of competition directly benefits community concerns, such as the maintenance and repair of the irrigation works.

While the *dap-ay* is the unit of mobilization and accountability in community-wide endeavors, the nuclear family within the *dap-ay* is the unit

of assessment for whatever is required by a community project. A *dap-ay* divides the assessment of goods, money, or labor among its families and enforces their delivery.

The rice terraces of the Tanowong people are mostly located in the immediate environs within roughly three kilometers north and south of Tanowong and Kadatayan, the two oldest villages in the group.⁴ There are a few springs in the immediate area, but they are so small as to be insignificant in terms of the volume of water needed for the fields. The required water must be obtained elsewhere. For a long time it was supplied by two streams northwest of the fields in the upper reaches of the plateau on the summit of the mountain on whose eastern side of the fields are located. Because of a history of an egalitarian exploitative pattern of their territory, and an equally long history of village endogamy which is now breaking down, all the rice fields in this area are traditionally owned by Tanowong people. More important, all families in Tanowong own at least one rice field in the area. Given the tremendous effort needed to construct and maintain the irrigation ditches and the dams at the water source which divert the water, and given the fact that everybody in Tanowong is involved because everyone owns terraces, irrigation among the Tanowong is a serious communal affair.

The water from the two streams is conveyed to the fields by a ditch approximately four kilometers long and on the average about two and one-half feet wide and three feet deep. This ditch is repaired annually in late December after the planting season by all the villagers, mobilized through the wards in the manner discussed above, after the date for the work is decided on by the men at a meeting, either in one of the ward houses or in one of their innumerable house-to-house group drinking sessions.

The repair crew is composed of men and women of all ages and sometimes includes young boys and girls, depending upon the available labor in each family. While there is no discrimination regarding sex and age of the participants in this undertaking, if the job requires hard labor, as when typhoons have been especially destructive and ditches and stone retaining walls must be rebuilt, then men if possible should represent their families. Maintenance of the ditches consists of cutting the growth on the banks of irrigation ditches, removing earth that has accumulated and any other obstruction to the water flow, plugging leaks, repairing retaining walls that have given way, sometimes making and installing wooden flumes and bridges across the ditches where such are used as paths, and repairing the dams diverting the water.

Apart from major reconstruction, these jobs usually take one day, at the end of which the water flows freely toward the fields. The working group,

4. A considerable number of rice terraces are found outside of this area away from the villages farther upland, but the terraces involved in this study are the most productive, most valuable, and most important.

particularly the men involved, then split into smaller groups and go to the different Tanowong villages to collect fines from those who failed to participate. The fines take several forms: money (one peso), rice (five bundles), or a good drink and meal for the group.

Once the water is flowing, there are eight to twelve water distributors who take over the task of systematically distributing the water as fairly as they can to the different fields. This practice of having water distributors seems unique to the area. It is convenient and efficient in that it saves the individual owner from having constantly to check his fields and sometimes to sleep by them to see that they receive water. Perhaps more significantly it prevents conflict among the different owners, since they cannot accuse one another of stealing or of taking more than their share of water. In neighboring areas where there are no water distributors, suspicion and 24-hour vigilance is standard practice, punctuated with not infrequent altercations and even violence at the height of the dry season and the peak of irrigation need.

The water distributors are informally selected by the people on the basis of dependability, diligence, and fairness. Men who are thought to be good as water distributors are urged to take the office, or else are mentioned to the leading men of the village as able candidates. Sometimes men themselves apply for the job by indicating to the people their desire; if they are thought fit for the job, eventually they are told to give it a try. No woman so far has been made a water distributor. Distributors are paid at the end of the harvest in kind at 5 percent of the harvest: five bundles of rice for every 100 bundles harvested.

The routine of the water distributors is a demanding one. They rise very early and by 5:30 A.M. are on the job. Some follow the ditch every morning and late afternoon to check that there are no breaks, no obstructions, and no leaks. The rest spread themselves among the terraces, working the water through narrow ditches between the terraces and through each terrace outlet (a cut in the mud dike) to those fields that had no water the day before, or to those that are drying up. By 9:30–10:00 A.M. the first part of the job is finished and the distributors often gather on a knoll at the top of the mountain overlooking the terraces, where they exchange information and from where they can observe which part of the area will need water the most that evening. They then may go home to have breakfast and do chores. At about 5:00 P.M. they begin again and work until dark. They stand on call all day, however, in case of emergencies.

Because adequate water is an absolute necessity for the rice to mature, any source of water is important, particular during the driest months of February, March, and April, when the rice is growing rapidly. Between late February and early March sacrifices are made to the small springs by those whose fields are nearest them. This sacrifice consists of killing a chicken near the spring, cooking it there with salted pork, and having a meal to which the spirit of water is invited and prayed to in order to increase the flow. The performance

of these sacrifices by the few whose fields adjoin a spring is viewed by them as a sacrifice for the sake of all the people in the community. Should this obligation be neglected, it is viewed by the people as selfishness, requiring some form of censure, usually taking the form of a "talking to," if not a fine, by the old men.

After the rains really set in about early May, the irrigation system is no longer needed and the ditches therefore are left untended. From this time until the next season, irrigation is individualistic and not communal. Those who need water, perhaps for the repair or expansion of their fields,⁵ must go alone to clean the ditches for the water to flow from the streams without obstruction.

Although in the past irrigation was not an overwhelming concern of Tanowong village organization, it has been one of the most important concerns in the recent history of their villages. The fact that it was not considered critical was due to the adequacy of the water supply. This complacent situation changed radically in 1954, when the growing insufficiency of the water supply led the Tanowong people urgently to seek out hitherto untapped and remote water sources to expand their irrigation, a venture to which we now turn.

The Bwasao Stream Diversion Project

Over the years the inadequacy of the original irrigation sources became more and more of a problem for three reasons: (1) the expansion and increase in the number of terraces on the original site, (2) the construction of new terraces along and below the irrigation ditch which necessarily diverted water permanently, and (3) the denuding through careless cutting and frequent fires of the pine forest of the mountains in the environs of the streams which served as the source of irrigation water. Gradually, therefore, more and more of the original rice terraces, particularly those located in the lowest tiers, were not adequately watered and thus became increasingly unproductive, leading to their conversion to the growing of sweet potatoes (*camote*). At first the water distributors were blamed for the shortage. They were thought to be lax in checking leaks from the ditches, and unfair in their distribution of the available water. The water distributors became even more strict with the water, looking with extreme disfavor at those people close to the source who had vegetable gardens and who had heretofore diverted water at least once every two days to water their plants. These moves were all to no avail, since there simply was not enough water.⁶

5. Water in such cases is generally used for the process called *gobogob*, to erode soil from one place to another. In this way an area can be leveled by the removal of earth through the use of water power.

6. Although it can be argued that the water supply per se did not decrease and that the cause of the shortage was the increase in the area to be watered, the older people also claim that the amount of water at the source had become much less than in the past.

On realizing the actual water shortage, the Tanowong regarded it as a serious blow to village life, if not a calamity. It was not that they thought it would lead to starvation, because as already noted, sweet potatoes constitute a major portion of the diet and do in fact grow well in the dried-up terraces. Strictly speaking, since rice does not grow very well in this mountain area and its cultivation is so time-consuming, the *camote* or sweet potato is a more economical crop. Rice, however, is considered to be the best food there is. It follows that rice terraces are one of the most highly valued kinds of property for inheritance.⁷ Given this fact, plus the fact that the religious ceremonies, which are very significant kinship group and communal rites of intensification, are keyed to the rice cultivation cycle, the ownership of a rice terrace is like a badge of citizenship and of continuity, rootage, or identity in the group. This cultural significance of the rice terrace is the background for the intense concern shown over the dwindling water supply. In view of the seriousness of the problem, the Tanowong people struck on the bold idea of tapping Bwasao, a fairly sizable stream deep in the forest in the mountains north of them. As Bwasao lies within their hunting, mushrooming, and bamboo-gathering range, and directly on their path to the southern Ikneg territory where they go for trade and employment in building terraces, every male of Tanowong was familiar with it. They knew that water there is steady, that there is no great variation in its flow between the rainy and dry seasons, and that it therefore is a dependable year-round source. But they must have been intimidated by the distance of Bwasao to their fields. It is at least a three-hour fast walk from Tanowong to Bwasao, using the shortest route. Since the proposed ditch would have to follow the contours of the mountains, it would have to be much longer than the path, perhaps up to 25 kilometers long. But everybody agreed that the project was worth the try, for should it succeed, preservation of their precious rice terraces would be ensured.

For some time the Tanowong discussed the technical difficulties and other problems presented by the project. Finally, during the slack season (February, March, and April)⁸ of 1954, the people, mobilized, and organized through the *dap-ay* system, began working at the water source. Their strategy was first to build the dam at a point which was high enough to allow the water to flow

7. One of the most important activities during a Tanowong wedding celebration (also true among the neighboring Bontoc and Lepanto villages) is the announcing of the couple's inheritance by their parents. This takes the form of a "sing" on the night of the celebration by both kin groups involved in the marriage, with each side announcing the inheritance in the form of a song and challenging the other to match what it has given. Rice terraces are the main subject of these songs.

8. During these months the most serious agricultural activities are the *kames*, removing weeds between the rice plants and evening the plants by replanting with shoots from established plants those spots where the original seedlings died, and *agabat*, weeding the banks of the terraces. Since these are ordinarily women's tasks, the men are free and usually go to the neighboring Ikneg (southern Tinguian) area of Maeng, or else to the mines in the province of Benguet to the south to seek employment.

with adequate grade, and then to build a ditch leading from the dam to Tanowong. This remarkable engineering feat, which would appear overwhelming for a strictly gravitational flow through the mountains with no sophisticated surveying equipment, was made possible only through the people's detailed familiarity with the territory from years of hunting and foraging.

Since the Tanowong appreciated that the project would be a long one, they assessed each family five days of labor, with the understanding that after those days were expended, another cycle would begin, and so on until the irrigation system was completed. Because of the importance of the fields to everyone, there was strong commitment to the project and enthusiasm on the part of all.

The Tanowong people were fortunate that at about this time a man from the municipality of Sagada won a seat in the now disbanded Philippine Congress. The Mayor of Sagada at that time was from Tanowong and through his efforts the Tanowong people had supported this winning Congressional candidate. After seeing the serious self-help effort of the Tanowong people, the newly elected Congressman included the Tanowong irrigation expansion project among those to be supported out of his "pork barrel" funds. It then happened that after the donated labor of the people began to lag, compensation became available from the government for the additional labor needed to complete the irrigation works by the following year, 1955. After these government funds were expended, subsequent grants were obtained from the government for further work on the irrigation system for widening and straightening its course.⁹

Maintenance of the Bwasao irrigation system is one of the most important annual activities of the people of Tanowong today. As in the original irrigation system described earlier, the Bwasao ditch is repaired every year in January after the original ditch has been repaired. Because the Bwasao ditch is nearly 25 kilometers long, different *dap-ay* are assigned specific segments of the ditch as their charge. Unusually heavy damage to a segment, however, such as a massive landslide, calls for labor from all the people. Groups from the different *dap-ay* work their way to the forest area early on January mornings. As soon as possible, water is fed to the ditch where part of the maintenance task is tamping (*dedet*) the moistened soil at the bottom and sides to prevent loss through leaks or seepage. As soon as the water is safely flowing through the ditch, the water distributors take over as in the pre-existing irrigation system. In all aspects of the maintenance of the newly

9. It has become a matter of competition for the Tanowong village officials to obtain money from the government or other agencies and to spend it in a most significant way on the irrigation system. The latest development along this line was the procurement of a food assistance grant in September 1971 from the Food for Peace Program through the Church World Service Agency in the Philippines in the form of about 600 sacks of bulgar, flour, and rolled oats to feed workers and their families while they worked on improvements in the irrigation system.

expanded irrigation works, the traditional social organization and patterns of maintenance established for the pre-existing irrigated terrace system prove adequate.

Intervillage Conflict over Irrigation Water

Control of water has been a sore point between a number of villages in this part of the Mountain Province. No sooner had the Tanowong begun work on their expanded irrigation works than another village, Agawa of Besao municipality, made claim to the water source. The upper reaches of Agawa's eastern boundary is by-passed by the Bwasao ditch and Agawa is somewhat more closely situated to the source. But the major basis of Agawa's claim was that Bwasao lies within her territory and that at some time earlier in her history, she had already begun work to divert the stream toward Agawa. The former is a false claim, for in fact Bwasao is an open hunting territory for both Tanowong and Agawa, confirmed by long usage. The latter portion of the claim was based on the fact that early in the 1930s a gold mine, which soon failed, was started in the area; part of the mine's plan was to divert the Bwasao stream to obtain water for a proposed mill and compound three kilometers from the source. The laborers employed to divert the stream were from Agawa. Thus, while Agawa could show they had started a ditch more than twenty years before, it was not part of the Agawa plan to divert the river for themselves. The Tanowong were quick to point this out. After much negotiation between the leaders of both villages, the Agawa people reluctantly agreed not to interfere further with the Tanowong project. Both groups rationalized that such an agreement was in the best interests of all concerned since there was a growing number of intermarriages between Agawa and Tanowong, and fields watered by the irrigation works were as a result owned by people from both groups.

The Agawa people asked, however, that any creeks flowing toward Agawa territory across the path of the irrigation ditch should not be diverted or interfered with. Although this was an inconvenience to the Tanowong, as it meant the construction of two water aqueducts across streams, they conceded. An agreement on paper was drawn up to this effect. In addition, the agreement provided a fine for its violation, the amount of the fine to be determined at the time of the violation.¹⁰ Also, the Agawa people later claimed that the agreement included an understanding not put down on the paper that if at any time in the future Agawa should need water, the Tanowong were to share some with them.

This last claim was a source of contention between the two groups

10. In March 1972 the Agawa people accused the Tanowong people of a violation of this agreement. Although the accusation was not upheld, it provided an occasion for discussing the importance of the agreement, thereby refreshing the memories of both sides.

between 1971 and 1972. In 1970 the Agawa people were given a large contract to install the waterworks for the Besao municipal seat, on condition that they themselves locate or provide a water source. Their solution was to tap one of the springs above the Tanowong dam at Bwasao. This was rumored in Tanowong and was confirmed when Tanowong hunters came upon Agawa men and a government engineer in the environs of the dam. Shortly thereafter, the Agawa leaders and some of the municipal officials of Besao were seen in the provincial capital of Bontoc at the Engineer's Office, purportedly there to draw up the plans for the waterworks.

The Tanowong people were upset by this turn of events; and after waiting in vain for some time for the Agawa people to inform them of their intentions, Tanowong sent some of their officials to Agawa to find out what was going on, fearing that their irrigation works might be in serious jeopardy. The Tanowong officials on their trip to Agawa ascertained what the Agawa people proposed to do. This led to a series of internal meetings in Tanowong to determine how to counteract the Agawa threat, and to a series of meetings with the Agawa leaders as to how to solve the problem between the two groups. The Tanowong people let their determination be known to fight any incursion of their water resources. The Agawa asserted their traditional claim to the water and their recollection that there was an understanding that they could share the water with Tanowong at some future time, and now was the time. Threats of force were made by each side. Cooler heads prevailed through effective appeals in the negotiations to the unity of Tanowong and Agawa as a result of the increasing number of intermarriages and the resulting joint ownership of rice fields.

The Tanowong people proposed that the Agawa tap another stream in the vicinity but one not flowing to their dam. The Agawa countered that the stream was not large enough and that it dried up during the dry season. The government engineer was taken to that proposed source by representatives of both groups and while he agreed that it was small, he pointed out that with sufficient storage tanks it had good possibilities. After much bargaining, the Agawa countered that they would accept the Tanowong proposal if the Tanowong people would carry the pipes from the Besao municipal center to Bwasao (a distance of some fifteen kilometers) and if they would install the pipes from the proposed source for a distance of about two kilometers toward Besao. These conditions were stoutly resisted by Tanowong, but they finally agreed to them in order to eliminate the threat to their water source. A contract was drawn up to the effect that the Tanowong would help Agawa carry and install the pipes, but in return Agawa was never again to interfere with the Tanowong irrigation system in any way. Tanowong immediately mobilized to carry out the agreement and after one month they fulfilled their commitment in the contract. In doing so, they now hope that there will be no further irritants arising from the Bwasao irrigation system to disrupt the relationship between Tanowong and Agawa.

In the course of dealing with Agawa's challenge, the Tanowong people became convinced of the necessity of obtaining government sanction for their irrigation system as a means of ensuring permanent control of the water source. An application to the government for a water right, accompanied by a petition from the community, was filed early in 1956 to initiate the proceedings. Officials of the Bureau of Forestry were then sent several times to inspect the area. A long period ensued during which other requirements were fulfilled. Finally, in April 1972 Tanowong was notified that they had been granted a temporary water right certificate by the secretary of the Department of Agriculture and Natural Resources.

During the filing and follow-up period the officials of the Tanowong community made periodic trips to the provincial capital and to Manila, first to file the application formally and then to follow it up. These trips necessitated contributions by the people to pay for the transportation and food of the village officials sent. The people also contributed to the required filing fees. In addition, gifts in kind in the form of coffee beans and even a live deer were given to government officials as this was thought to facilitate matters. Every occasion on which the people had to contribute necessarily focused attention on the irrigation system. The need for contributions was discussed publicly in the *dap-ay*, and finally the officials went from house to house to collect the required amount.

Before receipt of the notification of their temporary water right further anxiety among the Tanowong people was caused by a rumor that the Agawa people were in fact also applying for the water rights to Bwasao. This rumor spurred the Tanowong to send another delegation of officials to Manila, which necessitated yet another collection from the people. Two such trips were made during the three months preceding their notification in April 1972. The notification quieted their anxiety.

Unlike the conflict it caused between Agawa and Tanowong, the Bwasao irrigation project had a unifying and integrating effect with respect to Tanowong's relations with her northern neighbor, Pedlisan. Pedlisan is also a Bontoc village and the two are therefore very similar culturally. Because they are closely situated about five kilometers from each other and because they are traditionally friendly, there has been a growing number of intermarriages between the two villages. They also share much territory, the Bwasao area being one of them. As a result of intermarriage, the bilateral pattern of inheritance, and neolocal residence, the ownership of the terraces in both Tanowong and Pedlisan is becoming increasingly shared between the two communities.

Tanowong's problem with its water supply therefore affected many families in Pedlisan. Pedlisan was also experiencing water shortage and irrigation problems and this likewise affected Tanowong families with fields in the vicinity of Pedlisan. It was natural therefore for the two communities to

realize the necessity for close cooperation. Whereas they had historically cooperated in matters such as bringing home the body of a member of either community who had died abroad or searching for lost animals, the present critical need to support each other with regard to water is an especially articulated and verbalized reason for more general cooperation between Tanowong and Pedlisan.

Many meetings between the two communities have taken place, in which the theme has been cooperation over the water problem. The meetings are usually held in a hamlet midway between the two, where the Episcopal church¹¹ has a mission establishment in the form of a church, parsonage, and schoolhouse. Cooperation is expressed in varying forms of support for each other in their relations with an outside party: in applying for water rights from the government, in opposing concessionaires who want to exploit the forest resources around both communities, or in contributing signatures to petitions or funds for travel expenses of village officials. In the spring of 1972 the people of both villages united strongly in opposition to the owners of a paint manufacturing firm in Manila who wanted to gain concessions to tap for oleoresin in the pine forests surrounding the villages.

This opposition to the exploitation of the pine forest resources is due to the realization, perhaps belated, of the correlation between the density of trees and the amount of available water. As a result there is a strong movement to have the surrounding forest areas declared a watershed or communal forests by the government, which would make them immune to outside exploitation for lumber or oleoresin. But to gain such protection, the villagers must deal with the national government structure, often a remote, complex, and frustrating entity for the uninitiated to approach.

Discussion: Organizational Impact of the Expansion of the Irrigation System

It is noteworthy that the traditional Tanowong social organization of irrigation focusing on the *dap-ay* proved adequate for the construction and continuing maintenance and distribution of water from the Bwasao water works, a tribute to the vitality and capability of this traditional framework of communal action. However, more significant aspects of the irrigation expansion project lie in: (1) the manner in which it provided and still provides the entire political community with a central issue with which all members identify very strongly at a time when other serious socially disruptive forces are at work; (2) a new consciousness and favorable attitude toward the normally remote national

11. The church is increasingly referred to by the people as the "common *dap-ay*" to which the people of Tanowong and Pedlisan all belong. It therefore has the potential of serving as an intervillage uniting agency, so far as the Pedlisan and Tanowong people are concerned.

government; and (3) a new dimension of experience and education in leadership, particularly in the skills of negotiation with other villages and in dealing with the modern government bureaucracy.

To serve as a stimulus for cooperation and solidarity in contemporary Tanowong community life is no mean contribution of the Bwasao irrigation project. For in these days even the relatively isolated Tanowong villages are racked with all sorts of forces of change: religious change (pagan animism versus Christianity); education and contact with the outside world; old values versus those of the young; and election politics of the barrio, municipality, province, and national government. Any of these singly and especially in combination seriously strain the village structure. Both the old and the newly expanded irrigation systems have been a boon for community integration and for the continuation of traditional communal organization.

The capacity of the Bwasao irrigation works to galvanize community action rests on the cultural significance of the rice terraces to the Tanowong people that was noted earlier in this paper. For this reason, any threat to the terraces, such as the dwindling water supply and the Agawa attempt to prevent Tanowong from constructing the Bwasao project and later to divert one of the springs feeding the irrigation dam, was considered a threat to Tanowong's livelihood and was regarded with immense anxiety and seriousness. Tanowong's old complacency dwindled and their vigilance mounted, for their drying fields had become a serious and alarming problem that touched everyone's heart.

As enormous as the Bwasao project was realized to be, the Tanowong people took to it with great enthusiasm. The meetings in the *dap-ay*, in which the underlying sentiment was "let us give it a try," must have strengthened their resolve, for there is no known case of anyone being fined or punished for outright refusal to cooperate on the project. Instead, there was eager support, and the work crews, composed of both sexes and of all ages, led by the old men, toiled hard and long. It is conceivable that this enthusiasm might have sagged later had not government funds been forthcoming. Government support was important in maintaining the morale of the people and in facilitating their continuing mobilization. The strong feeling of common purpose and solidarity generated among the Tanowong people by the Bwasao project still prevailed in 1972.

The Bwasao irrigation expansion heightened the awareness of the Tanowong people of the national government system as a source of financial, material, and technical aid. In addition, they discovered that the national government could exercise power on their behalf in the form of an irrevocable guarantee of their water rights in Bwasao and against commercial exploitation of their forests and watershed. This aid is an entirely different aspect of the government from the usual association the villagers have had with it. Earlier experience with the government was often negative, in that the government demanded taxes and free labor for roads and other kinds of construction, and

demonstrated its power through incarceration of individuals in prisons. For a relatively isolated cultural minority group, this positive development is of critical importance in furthering Tanowong's identification with and integration into the national political system.

Finally, all of the formal and informal negotiations which the Tanowong undertook with the opposing village of Agawa, with her close neighbor of Pedlisan, and with the various government officials and agencies of the national government have been fertile fields of social and political experience for the villagers. This was especially true for the community leaders, who learned to deal with a much wider universe than the village and who progressively built skills and confidence in coping with internal and external challenges in their delicate and often painful role as intermediaries between their communities and outside forces. Through all the problems and processes that the Bwasao irrigation project led to, the Tanowong gained social and political skills, particularly in the art of negotiation,¹² which are of benefit to them in their increasing extravillage dealings in the contemporary Philippines.

The expansion of the Tanowong irrigation system is an example of the flexibility of traditional Bontoc social organization in incorporating greatly enlarged communal tasks without a change in its structural form. At the same time, the successful accomplishment of the Bwasao irrigation works projected the small Tanowong community into new external relationships at the local, regional, and national levels. In the Philippines, with increasing demand for water and other limited natural resources occasioned largely by a growing population, the Tanowong example may represent a more general pattern of change, whereby ecological necessity brings the once relatively isolated agricultural village into closer relations with the national forms of economic and political organization.

References

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12. To my knowledge the Bwasao problem is the first instance in which the Tanowong people had to negotiate over a protracted period a settlement with another village. It is also the first case in which binding agreements between Tanowong and another group were put in writing.