

Author: Michael Thomas Seigel¹
Email: mseigel@ic.nanzan-u.ac.jp

The Interaction of Local and External Influences in a Case of Deforestation

Abstract: By focusing on a particular case in which logging carried out in the 1970s and 80s led to extensive deforestation, the paper discussed the complex of relationships that led from the logging to the deforestation. The area in question is in the Philippines, in Abra province in northern Luzon. The deforestation should not be understood as a simple link from unsustainable logging to deforestation or slash-and-burn to deforestation. The socio-economic impact of the logging led to an increase in burning and to more concentrated burning, and this along with other factors resulted in formerly sustainable practices becoming destructive. The increased burning overwhelmed the forest's capacity to regenerate. The implications are that a complex network of interrelationships and interactions led to deforestation. These interrelationships can be brought into focus by developing a comprehensive historical profile of the locale. Addressing the problem of deforestation will require that this complex of interrelationships be addressed. This will mean that socio-economic issues, agricultural issues and environmental issues will have to be addressed integrally.

Keywords: logging, slash-and-burn, deforestation, historical profile of the locale, indigenous peoples, traditional practices

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¹ Affiliation: Nanzan University Institute for Social Ethics

Introduction

In this paper present the experience of one particular village and the area surrounding that village, focusing on the interrelationship between social, economic and environmental issues as they have taken place in that specific context. More specifically, in the area where this village is situated, extensive logging was carried out in the late 1970s and early 1980s, and this logging brought a radical change both to the forest cover and to local society. The outcome has been the deforestation of the mountain slopes, an impoverishment of the people, and a substantial change in the traditional culture of the people. My goal in this paper is to try to shed light on the complexity of interactions that brought about these consequences—most particularly on the interactions that lead from logging to deforestation. As we shall see, in the initial stages there were two important external influences, namely a change in the law that affected people's relationship with the land, and logging. There were internal influences such as population growth and traditional practices of slash-and-burn farming. And there were influences that arose as a result of the interaction of the new law, of logging and of other changes such as the introduction of a cash economy and the proliferation of chainsaws on traditional practices.

The goal of the paper is to argue that deforestation ought not to be seen as simply an outcome of are deforestation or slash-and-burn, but as resulting from a complex of interactions. The rationale behind the paper is to suggest that in order to address problems of deforestation, this complexity must be recognized and deforestation must be addressed in an integrated way, with strategies not just to not just to prevent or manage logging and slash-and-burn farming, but with strategies to address the complex of relationships that have given rise to the deforestation. Professor Toshio Kuwako of the Tokyo Institute of Technology has argued that in order to address the environmental issues of a particular locale, it is necessary to draw up a historical profile (the word in Japanese that is here translated as profile is the same word that is used for the CV of a person) of the locale². This paper can be considered one step towards drawing up a historical profile of the region and of the problem of deforestation in that region, and I think

² For a summary in English of Professor Kuwako's views on this, see Michael T. Seigel, *Consensus Building Revisited: The Experience and Approach of Toshio Kuwako*, La Trobe University Centre for Dialogue Working Paper 2012/2, pp. 18-20. See

http://www.latrobe.edu.au/__data/assets/pdf_file/0004/203566/WP2012-2.pdf

that it can be seen as demonstrating the value and importance of drawing up such a historical profile.

Having said this, it will be important to point out that my field is not forestry and I do not have any particular expertise in deforestation over and above the contacts I have had in the region I discuss in this paper. My background is in theology and most specifically in the social implications of theology or social ethics and also what has been called ecotheology. I have had particular interest in the importance of local communities in addressing environmental issues and in the importance of addressing local environmental issues conjointly with other social issues such as poverty. It is this focus that led to my involvement with the region in the Philippines, and it is from this perspective that I approach this paper.

It will be necessary, before going further, to give some information about the village and the surrounding area, to explain what my own relationship with the village is, and what my intention with this paper is.

The Village of Malibcong

The village I will deal with is known as Malibcong, a remote rural village of northern Luzon in the Philippines. It lies in the Cordillera Mountains, in the province of Abra. As well as being the name of a particular village, Malibcong is also the name of the greater municipality to which this village belongs. The climate is tropical although the altitude is high enough (about 1200 metres) to provide coolness. There is a rainy season (the typhoon season) which lasts roughly from May to November and a dry season that lasts from November to April.

The people of the region are Tinggians, an indigenous people of the Philippines. Traditionally, the Tinggians have grown rice in the flatter areas near the streams and otherwise used slash-and-burn farming as a source of agricultural produce on the mountain slopes. Traditionally, they were principally subsistence farmers.

The Tinggians, although living in remote areas, have had a substantial amount of contact with other peoples and have carried out trade for centuries. Many Chinese artefacts, particularly pottery, are found in Tinggian areas.

My Relationship with Malibcong

My first contact with Malibcong was an indirect one. On a trip to Manila in 1985, I met Alois Goldberger, a Catholic Brother in the religious congregation known as the Society of the Divine Word, who had been working in Malibcong for some ten years. Alois' field was agroforestry, and he was trying to use his

expertise to promote rural community development in Malibcong. Alois talked about the rapid decline of forest cover and the need for an alternative to slash-and-burn farming. We kept up contact from that time on. Alois came to Japan in 1987 to learn some agricultural techniques, and I visited Malibcong for the first time in 1988. Since then I have visited Malibcong 6 times and I have kept close contact with Alois and with some of the Tinggian who worked with him.

Over the years, I became increasingly aware of the complexity of the process of deforestation. Since the logging carried out in the 1970s and 80s was extensive and was not followed up by replanting, it may seem obvious that logging resulted in deforestation, but that simple equation leaves out the regenerative power of the forest. In areas where the forest was logged and then left untouched, the forest has regenerated. But for most of the area, burning has prevented regeneration.

So the question becomes: Is the real cause of the loss of forest cover the logging, or the use of fire? This introduces a political element into the debate, since attributing deforestation to logging lays the blame on the logging company and on the Marcos administration that supported it, while attributing it to slash-and-burn farming places responsibility on the people themselves.

As I conversed more and more with Alois, with the people of Malibcong, and with others who had worked in Malibcong, I became more and more aware of a complex set of interactions between the logging and the burning practices of the Tinggian. In September and early October 2012, I visited the Philippines and interviewed people in Manila and in Bangued (the capital of Abra) who either came from Malibcong or the surrounding area or had had worked there (including a good number who had firsthand knowledge of conditions in the area before the logging)³. I also went to Malibcong and interviewed people there.

As a result of these interviews, I drew up a questionnaire to get people's views on the complex of relationships by which the logging had led to deforestation (see Appendix 1). This questionnaire was made up of nine explanations that I had heard regarding the causes of the deforestation. People who answered were asked to indicate the degree to which they thought that particular explanation was an accurate description of a cause of the deforestation.

³ Among those not originally from Malibcong but who have in depth experience of it, the missionaries of the Society of the Divine Word are they most significant. They have been involved in Malibcong since the late 1960s and almost all of those who were involved then are alive today and still in Abra.

It must be pointed out that this questionnaire was intended simply to obtain some basic ideas for preparing more thorough research into this issue. It did not aim at reaching a definitive conclusion about the causes of the deforestation not even to present a comprehensive assessment of the views of the local people on that deforestation. The goal was to generate ideas. I planned on visiting the area again in six months. I left with the request that the questionnaire be distributed to people who would be in a position to answer it, whether they were people from Malibcong or the surrounding area, or people who had worked there.

I returned in six months and collected the questionnaires that had been completed. Some questionnaires had been completed by individuals and had been completed in discussions among a group of people. Since the whole process was not particularly organized and was not supervised, there can be no guarantees that the outcome of the questionnaire represents fairly the views of the local people or that it is not affected by biases. The outcome of the questionnaire, therefore, is no more than what it was intended to be—a means of generating ideas for further research. This paper is based on that questionnaire and on the discussion that led up to, and therefore it is a work in progress. It is not intended as something that will draw conclusion about the causes of the deforestation in the area around Malibcong. Rather, it aims at listing a number of issues that need to be examined in order to understand that deforestation.

There are however, two things that can be said to shown by this paper. One is that phenomena such as deforestation can be understood better by understanding them as emerging from a complex of relationships rather than as simply resulting from simple cause and effect relationships (such as logging→deforestation, burning→deforestation, etc.).

The other conclusion is that focussing on one particular community's experience and drawing up a historical profile of the problems in that area, can be an effective way of bringing to light the multiplicity of factors involved in a specific problem, and it may well be an approach that can highlight this multiplicity in way that cannot be achieved by focussing on single issues such as deforestation at a broader level.

I will suggest at the end of this paper another conclusion as well: namely, that solutions to these problems too must focus on the same complex of relationships that lies behind the problems, and therefore, that solutions to problems such as deforestation will have to include highly localised actions that address both environmental and social issues as well as broader actions or actions that focus primarily on environmental issues.

Before discussing the responses to the questionnaire, I will give an overview of the conditions in the area around Malibcong before the logging began and of what happened as a result of the logging.

I. Conditions before the Logging

Tinggian Use of Fire

The Tinggian have traditionally practiced slash-and-burn farming, or swidden agriculture. The areas being used for slash-and-burn farming are called *kaingin*. As well as burning areas to establish *kaingin*, the Tinggian would also burn areas to encourage new growth during the dry season. This new growth was to provide fodder for livestock.

In discussion with the people, I heard different views of the extent of burning before the logging. Some argue that traditionally only small areas near the village were used in this way to grow rice and other crops. Others argue that, even in the period before the logging, burning was rampant and that people were not aware of the risks of burning. Valentin Grüner (another Brother in the Society of the Divine Word who has spent time in Malibcong frequently since 1968) talks of a project to build a water supply for Malibcong in 1968 that was severely damaged when the plywood molds for a concrete tank were burned as a result of an out of control fire that in fact burned a huge area⁴. He pointed out that when the school was first established, the principal tried to make the students understand the advantages and disadvantages of burning, which indicates that, even at this time, there were some perceptions that the burning was a problem.

However, the view is universal among those who remember, whether they are Tinggians from Malibcong or people who had worked there, that there was substantially less burning before the logging than there has been since. Today, in March and April when the people burn to prepare the *kaingin*, a great pall of smoke hovers in the air around Malibcong, making breathing itself an unpleasant experience. All I have spoken to attest that this was not the case prior to the mid-1970s. One would see smoke rising in the distance from particular *kaingin* or fires lit for other purposes, but there was no pall of smoke hanging over the whole area as there is now. Valentin Grüner points out that the fire referred to above was exceptional. There were other fires, but they were small. Interestingly, he pointed out in this interview that fires did not spread then the way they do

⁴ From an interview with Valentin Grüner, conducted in Divine Word Residence, Ubbogg, Bangued, September 2011.

now—an issue that we will come back to later.⁵

The Lapad System

The Tinggian had an indigenous system of resource management, called the Lapad System. The word *Lapad* means “prohibition”. The Lapad system is an indigenous system whereby a certain area is declared off limits in order to allow for regeneration. For example, there was a *lapad* (prohibition) on fishing during the spawning period. After that fishing would be opened for a few weeks and then closed again. It was, of course, applied to other matters, including slash-and-burn farming. The Lapad System was effective because it was the people’s own system and they would actively monitor and enforce it.

The Forest Cover

The Lapad System appears to have been an effective method of resource management. People who spent time in Malibcong in the late 1960s and the early 1970s, (such as Antonio Alagao, Valentin Grüner, Alois Goldberger—all members of the Society of the Divine Word) attest that at this time, Malibcong was surrounded by forest, as was the road to Malibcong. The area was covered with pine forests. There were various varieties of pine, but almost all the trees were pine. Fish in the rivers were plentiful. There were many deep swimming pools. There was more water in the rivers during the dry season than there is now. Therefore, whether the burning prior to the logging is considered rampant or rare, it appears that it was carried out in a sustainable way.

The Beginnings of Change

1. An Early Introduction of Mining

There were signs of change before the logging, however. By the late 1960s, the Tinggian needed a way to cope with a growing population. Mining was also coming into the area, and this was seen as a means of linking with professionals to develop resources. Copper mining began in 1968 in Lakub (the neighbouring municipality to Malibcong and also a Tinggian district), but the price of copper went down and it became unfeasible. However, this attempt to establish mining lead to the introduction of money, roads and technology. As result of this, keeping the traditional culture intact had already started to become a struggle before the logging.

2. Plans to Build Dams and the Beginnings of Insurgency

In the early 1970s, there were to be four dams built on the Chico River. This

⁵ Interview with Valentin Grüner.

was blocked by the opposition of the local people. This became an occasion for the government to intervene. The NPA had been opposing the dams, and the government responded to this by increasing the presence of government troops in the area. Thus, even before the logging, there were tensions between government troops and the local people.

II. The Logging

III.

In the mid-1970s, two events radically changed the relationship of the Tinggian with the land. These two events were closely related in that the first is best understood as a preparation for the second. The first was the issue in 1974 of a Presidential Decree making all land with a gradient of more than 18 degrees government land. The second was the coming, in 1976, of the logging company Cellophil Resource Company (CRC).

The 18% Law

On 5 February 1974, President Marcos issued Presidential Decree No. 389, known as "Forestry Reform Code of the Philippines". Section 16 of this decree states:

Upon the recommendation of the Director, duly concurred in by the Department Head, the President of the Philippines shall, by proclamation, declare all lands of the public domain eighteen percent (18%) in slope or over as permanent forests or forest reserves, regardless of the condition of vegetative cover, occupancy, or use of any kind, and thereafter such forest reserves shall not be alienated nor disposed of, but shall remain in public ownership as such for forest uses.⁶

Except for small pockets of land along rivers where villages or rice-paddies were already established, the whole of the Tinggian area has a gradient in excess of 18%, so this decree placed practically the whole of the traditional domain of the Tinggian under public ownership and this therefore meant a loss of ownership for the Tinggian. The decree goes on to indicate that "Areas along streams or rivers may be utilized, in the absence of available alienable or disposable areas, as *kaingin* relocation centers, forest villages, and other purposes compatible with the proper management of the forest." This indicates that the decree did mean that the Tinggian were no longer permitted to establish *kaingin* in the 18% and

⁶ P.D. No. 389, Forestry Reform Code of the Philippines, Article IV, Section 16. <http://philippinelaw.info/statutes/pd389-forestry-reform-code-of-the-philippines.html>.

over areas except for those specific areas to which the *kaingin* are to be relocated. In other words, there can be no doubt that the 18% law deprived the Tinggian of the traditional access to the land.

This decree was replaced by Presidential Decree No. 705, known as the "Revised Forestry Reform Code of the Philippines", on 16 May, 1975. At least with regard to land with a gradient of over 18%, this latter decree simply reaffirms the earlier one⁷.

A very high proportion of land with a gradient of over 18% in the Philippines is indigenous land, and consequently, this decree is very much a decree about indigenous land. However, the decree includes no provision for indigenous domain nor does it express any recognition of rights of indigenous people to their traditional domains. The provision making "existing alienable or disposable lands, even if eighteen percent (18%) in slope or over" that are "covered by approved public land applications" exempt from this ruling could, if indigenous title to traditional domain had been more recognized at the time, be interpreted as guaranteeing the continuing ownership of indigenous peoples. However, at the time, such recognition of indigenous title did not exist.

The decree is formulated in such a way as to present the intent of the decree as being the preservation of forests, but the stipulation that these lands "shall remain in public ownership as such for forest uses" arouses concern. What is covered by forest uses? Does it, for example, include logging? What followed would indicate that it did. The recognition of logging becomes more explicit in P.D. 705 in that the latter decree explicitly includes within land to be reserved for public ownership and permanent forest "areas within forest concessions which are timbered or have good residual stocking to support an existing, or approved to be established, wood processing plant"⁸.

With this law, then, the Tinggian lost virtually all their land, and this precisely at a time when they were trying to cope with an increased population. It had been their territorial domain for centuries. This was carried out without any consultation with the people. The lands of the Tinggian were not documented and consequently they had little opportunity for recourse to legal action. Those with whom I have discussed this argue that when the Tinggian tried to assert their right to the land, they were seen as anti-government, and treated as enemies. The

⁷ Presidential Decree No. 705, May 19, 1975, Sections 15-16. <http://philippinelaw.info/statutes/pd705.html>

⁸ Presidential Decree No. 705, Sec. 16.4.

media, too, contributed to creating this kind of scenario.

The Present State of the Law

The 18% law has never been repealed. However, the Indigenous People's Rights Act of 1997 stipulates the right of indigenous peoples to their ancestral domains.⁹ Since much of these ancestral domains are lands with a gradient of 18% percent or more, this law comes into conflict with the previous 18% law. The usual logic of jurisprudence is that a later law supersedes a previous law unless the later law specifically states that the previous law has precedence.

However, the Indigenous People's Rights Act of 1997 itself states that "The State shall recognize and promote all the rights of Indigenous Cultural Communities/Indigenous Peoples (ICCs/IPs) hereunder enumerated within the framework of the Constitution."¹⁰ It is argued by those I interviewed that this is interpreted by the government as giving priority to the presidential decrees over the Indigenous People's Rights Act, since the president invoked the constitution in issuing the decrees. The decrees are introduced with the words "I, FERDINAND E. MARCOS, President of the Philippines, by virtue of the powers in me vested by the Constitution". The understanding among the Tinggians that I interviewed was that this phrasing is being used to give the presidential decrees priority over the IPRA. As I said earlier, this is a work in progress, and I have not yet verified the accuracy of these interpretations. Clarifying this legal issue seems important since, as we will see below, the loss of sense of ownership is considered by some to be a significant aspect of the decline of the forests, and that loss of a sense of ownership persists today.

The Logging

If there was ever any doubt that P.D. 389 and P.D. 705 were issued to facilitate logging, much of that doubt should be dispelled by the fact that the immediate follow up to the issuance of the decrees was the granting of an extensive logging concession to Cellophil Resource Company (CRC), which began logging in 1976. The concession granted covered almost the whole ancestral domain of the Tinggian. The following is a summary of what the Tinggian have told me of the logging:

Cutting was indiscriminate. Cellophil cut so many pine trees that much of the

⁹ See *Republic Act No. 8371: The Indigenous Peoples Rights Act of 1997*, Chapter III. http://www.cop.or.th/epf/philippines/terms_pdf/RA%208371.pdf

¹⁰ *Republic Act No. 8371, Chapter 1, Section 2.*

land was denuded. The amount of employment provided to the people by Cellophil was limited. The only work that people were needed for was cutting trees, and this was done with chainsaws, so it required a limited number of people. The original intention had been to float the logs down the river, but this was unrealistic from the start. In the dry season, there is too little water in the rivers for this. In the rainy season, there is so much water that control of the logs would be impossible. Trucking was initiated to transport the logs. This meant building roads, but these roads were built only with the transportation of logs in mind. These were not designed for good transportation.

Cellophil was also supposed to reforest. This was part of their agreement with the government. They did carry out replanting in a very limited number of areas. They employed very few people for this and in fact little was done. What replanting was carried out was subsequently destroyed by burning.

There were attempts made by the administration of Cellophil to develop good relations with the Tinggian by such things as carrying out activities to preserve their culture. Tinggian festivals or tribal festivals were organized where there were contests for tribal groups.

The Resistance

Many of the Tinggian opposed the loss of their traditional domain by the 18% law and the logging. However, from the very beginning, Cellophil was protected by the military. Opposing the logging, opposing Cellophil, came to be seen as anti-government activity. Some among the Tinggian set out to protect the forests, the livelihood of the Tinggians and their culture, and took up arms for this purpose. The government identified these with the NPA and carried out count-insurgency activities. Conflict persisted in the area and is considered by many I interviewed to be the main reason that Cellophil withdrew from the area.

Failure of Cellophil

Cellophil's logging ended in failure. From the start there was bad economic planning. The failure to recognize earlier that the rivers were not suitable for transporting logs, the expense of transporting the logs by road, and the poor quality of the pulp produced had already made the operations economically vulnerable. With the rise of the insurgency, operations became completely non-viable. The insurgents adopted such strategies as destroying Cellophil's equipment and burning the areas that Cellophil planned on logging, making the project non-viable.

In 1986, after only ten years, Cellophil abandoned its activities in Abra. The

damage done to the environment and to the social fabric of the Tinggians, however, remains. By a complex process of cause and effect, the coming of Cellophil triggered a series of changes that go on exacerbating the problems of poverty and environmental destruction even after Cellophil had left. One outcome was an increase in burning, and in the remaining portions of this paper, I will focus on the increase in burning while drawing in other related factors.

IV. Logging and Deforestation

It seems beyond doubt that the logging carried out by Cellophil is the trigger that led to the deforestation. However, as already noted, the relationship between the logging and the deforestation is not as clear as it may seem. It is not necessarily a case that because logging has been carried out the trees are gone and because the trees are gone the forest is gone. There may be some cases where this is the case, but in Abra, the forests have sufficient capacity for regeneration that, even after logging, *if they were left alone*, they could be expected to regenerate. To understand the deforestation, therefore, it is not enough to look only at the fact of logging. The factors that have interfered with the regenerative power of the forest must also be considered. At the point of writing, more than a quarter of a century has passed since Cellophil withdrew from Abra. This is enough time for a substantial amount of regeneration. However, for the most part, that regeneration has not taken place, and therefore not only the logging itself, but the reasons that the forests have not regenerated must be considered. This will mean looking at the social and environmental impacts of the coming of Cellophil, and most importantly, on the impact of the logging on the practice of burning and on its consequences.

Social Impact

One result of the logging was a loss of food sources. The logging removed the tree cover from the mountain sides. This led to siltation of the rivers as topsoil from the mountains got washed down. The siltation destroyed the habitats of the fish, which disappeared over a number of years, with some species disappearing quite quickly. Prior to the coming of Cellophil, fish in the rivers were so plentiful that, when mothers were beginning to prepare meals, they would simply send their children down to the stream to bring back the required quantity of fish. Prior to the logging, the Tinggian caught fish and ate them on a daily basis, except when restricted from doing so by the Lapad System. Fish was the easiest source of protein and even children could easily catch a day's fare. Today, only

small fish can be found in the rivers. Bigger ones are scarce and the habitats of the eels have been destroyed.

At the suggestion of Alois Goldberger, the people began to make fish ponds, but the fish in the fish ponds are harvested only a limited number of times a year, so this cannot compare with the fish that were caught in the rivers before the coming of Cellophil. Some Tinggian who practiced hunting were still able to catch wild pigs, but the loss of fish as a source of protein was a severe problem. When the fish declined, the people began to turn to wild plants. There is an edible plant called *gabi*—a vegetable grown in the rice fields and in *kaingin*. *Ratang*, a vine of which the shoot is eaten, disappeared. Wild *gabi*, known as *pikaw*, was not too affected by the deforestation, but when the stream dries out it will not grow, so there was less of it in the dry season.

An Increase in Burning

It is widely agreed that the reason the forests have not regenerated is the burning. However, the burning was carried out long before the deforestation took place without the mountains losing their forest cover. What happened as a result of the logging that resulted in the burning becoming unsustainable? As we have seen, there was little sign of damage from burning before 1975, but it has become a widespread problem since then. While there may be other causal factors as well, the two events that most impacted on the Tinggian in the mid-1970s were the introduction of the 18% law and the coming of Cellophil. Therefore, the first question to raise is whether these, directly or indirectly, could have either caused or triggered an increase in burning or the carrying out of burning in a more concentrated and less sustainable way, or whether there could have been some environmental changes that would make burning more destructive.

In the years that I have had contact with the district, I have heard numerous explanations for this. Particularly, in September and early October of 2011, I visited the Philippines and was given a number of explanations from people who were familiar with the situation both before and after the coming of Cellophil. All of the explanations relate to the burning—either to an increase in burning as such (1st to 8th explanations) or an increased impact of the burning (9th explanation). It should be noted that these explanations are not mutually exclusive. It is possible that any number of them, indeed all of them, could be accurate interpretations of what has happened.

Further, different explanations may be more important in different areas. Increased trade with the cities, for example, may explain increased burning for increased production in areas close to roads where transport to Bangue and other cities is accessible, but it is not likely to be a significant factor in areas

removed from such access.

The Links between Logging and Deforestation

As already noted, a questionnaire was drawn up and people with direct knowledge of Malibcong and the surrounding area were asked to respond. The responses are summarised below.

One response to the questionnaire came from a joint meeting of the Concerned Citizens of Abra for Good Governance (CCAGG)¹¹ and the people involved in the Cordillera Highland Agriculture and Resource Management Program (CHARM).¹² Antonio Alagao gave a copy of the questionnaire to this group but in order not to influence them was not present when they discussed it. He also did not receive a list of the persons present so at present I do not have a definite idea of who or how many were present. However, all persons who took part in the discussion were Tinggians who come from either Malibcong or one of the neighbouring municipalities and obviously all were people involved in governance and development issues. On my return visit to Bangued and Malibcong to receive these questionnaires, I was informed that this group's discussions had been lively and at times heated. There were even struggles over the microphone. However, they did reach a consensus and the responses listed below indicate that consensus. They described their discussions as "a very good experience."

Apart from that group, the number of written responses is too small to draw any conclusions. Two of the responses came from priests, one who is currently involved in coordinating activities for indigenous peoples, and another who has spent more than 50 years working in Abra, much of it in the areas affected by the logging. There are interesting differences between these responses and the responses of CCAGG-CHARM joint meeting.

A response was also received from a person who had been active in the NPA and 2 other responses individually from other people in Abra, sometimes through interviews rather than through written responses. The questions covered in the written questionnaire were also discussed in interviews. Interviews were conducted with seven people, all Tinggian, who come from the area affected by the logging and are familiar with conditions before, during, and after it, four people,

¹¹ For information on CCAGG, see <http://ccagg.com/>

¹² CHARM does not have its own homepage, but information on it can be gained from the IFAD homepage: http://www.ifad.org/evaluation/public_html/eksyst/doc/agreement/pi/philippines07.htm

also all Tinggian, who lived in the area during the before, during and after the logging but are currently away from that area, and four people who are not Tinggian but have been in close touch with the situation since before the logging.

There were nine questions on the questionnaire. Each question took the form of a presentation of an explanation for how the logging had led to deforestation. The respondent was then asked to indicate whether this explanation is very accurate, less accurate, significant, less significant, or false. (The choice of the phrase “less accurate” was clumsy. This should have been “fairly accurate”, but the layout of the questions on the page would have indicated that it meant “more than significant but less than very accurate”).

It should be remembered that all these explanations had been given to me over my years of contact with Malibcong. They therefore all came from people who had been in touch with the situation in Malibcong throughout the period of logging and they had been discussed with people from the area before the questionnaire was drawn up. It is not surprising therefore that most responses would list most of the explanations as at least significant. The sequence of the questions is largely consistent with the sequence in which I was given the explanations. I received the explanations in the first and second questions even before my first visit to Malibcong in December 1988, and the explanation in the third question during my first visit. The other explanations were given as I came to discuss this issue more in depth with local people.

Explanation in Question 1:

Due to the size of the concession granted to Cellophil, the amount of land available to the Tinggian for slash-and-burn farming was greatly reduced. At the same time, the Tinggian experienced an increase in population, and they no longer produced agricultural goods merely for their own consumption, but also to sell. Thus, they needed to increase agricultural output but had a greatly reduced area of land. Slash-and-burn farming came to be carried out in an excessively concentrated way, burning areas before they had time to recover. This was unsustainable and led to a rapid decline in the forest.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between significant and very accurate.

Explanation in Question 2:

Even prior to the beginning of the logging, a presidential decree of President Marcos made all land with a gradient of 18% or more government land. This deprived the Tinggian of almost the whole of their ancestral domain. This

resulted in a loss of a sense of ownership so that when fires spread, the people no longer made the same efforts to control these fires as they had done in the past. This resulted in an increase in burning.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between significant and very accurate, except for one response. The priest who had worked in Abra for more than 50 years indicated “false”.

Explanation in Question 3:

With the coming of Cellophil, poverty became a serious problem and food became less accessible. So much of people’s time was taken up with acquiring food that they no longer had time to control the fires. Fires were left to burn freely.

Responses:

CCAGG-CHARM joint meeting: less accurate

Individual responses: ranging between significant and very accurate. In the oral responses, it was pointed out that the people were not permitted to carry out many of their traditional food-gathering activities within the concession granted to Cellophil. Their access to food then became quite restricted. The amount of employment offered by Cellophil was not enough to offset this.

Explanation in Question 4:

The reduced access to food increased the need for burning. Prior to the coming of Cellophil, fish in the rivers were plentiful. After the deforestation carried out by Cellophil, when the rains came, they washed silt into the rivers, destroying the habitats of the fish. This resulted in an increase in slash-and-burn farming in an attempt to replace the lost source of food and led to increased burning during the dry season to promote fresh growth as fodder.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between significant and less accurate. In the oral interviews, there was strong agreement that the logging had a direct impact on the food supply, but, while most of the people interviewed expressed some agreement with the possibility that this had led to some increase in the amount of slash-and-burn farming in order to supplement the food supply, they tended to talk of this with hesitancy and generally the conversation would wander off onto other things that were done to supplement the food supply, such as hunting or building fish ponds. Therefore the conversation would tend to finish up with the conclusion that the loss of access to food could have led to some increase in the amount of slash-and-burn farming carried out, but the impression was that this

explanation was not something strongly felt.

Explanation in Question 5:

Some fires were deliberately lit out of resentment over government policy, the failure of the government to keep its promises, or non-payment of wages.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between significant and less accurate. None ranked this as very accurate. In the oral responses, it was argued that during the Marcos era corruption was rampant and some government officials did pocket money for themselves that was supposed to be given to the people who had been employed for a particular project. Setting fire to the forest was one way of venting frustration over this—especially when the project had been one of reforestation. However, since this burning was not sustained, while it is likely to be a factor, it is a far less significant one than the factors that led to a sustained increase in the burning.

Explanation in Question 6:

There was deliberate burning for various reasons: road builders burned the forest as a means of clearing; the military burned it to reduce hiding places for the insurgents; the insurgents burned it to destroy the resources that Cellophil was trying to exploit.

Responses:

CCAGG-CHARM joint meeting: less accurate

Individual responses: ranging between significant and very accurate. Many who were interviewed orally argued that, although there may be no documentary evidence of this, it was a practice of the military to burn areas of the forest where they suspect guerrillas to be hiding. However, since this too was for a limited duration, it cannot be considered as having the same impact as more sustained increases in the burning.

Explanation in Question 7:

People tend to make *kaingin* in relatively clear areas not obstructed by many large trees. The logging by Cellophil simply made much more land accessible and usable for slash-and-burn farming, so people increased their burning to make more *kaingin*.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between significant and less accurate.

One of the people interviewed (a member of CCAGG living in Bangued)

considered this the main reason for the increased burning. Logging resulted in clearing that made land available for slash-and-burn farming at precisely the time when the Tinggian were trying to increase production to sustain an increased population and to increase monetary income. It made preparation of a *kaingin* easier, and therefore *kaingin* were used more frequently.

Explanation in Question 8:

With the introduction of the 18% law and the coming of Cellophil, the Lapad system largely broke down. Without this system, there is no adequate means to manage the way natural resources are utilized, and the forest is destroyed.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between significant and very accurate. In the oral interviews, this was described as very accurate. With the introduction of the 18% law, the forests were placed under the jurisdiction of the government, and with the coming of Cellophil, this came to be enforced. The forests therefore came to be managed by national law rather than by the indigenous Lapad system. The Lapad system therefore ceased to be applied. After Cellophil pulled out of the area, people began to prepare *kaingin* without reference to that system.

Explanation in Question 9:

Due to the logging, the mountains lost much of their forest cover. Without the forests, rainwater rushes to the valleys in the rainy season and less water is retained by the mountains. The forests have less moisture in the dry season. Fires get out of hand more easily and burn more extensively—increasing the damage that is done by fire even when there is no increase in the use of fire.

Responses:

CCAGG-CHARM joint meeting: very accurate

Individual responses: ranging between less significant and very accurate.

In the written responses, only one person, not a resident of Malibcong or the surrounding area, answered that it was less significant. However, in a conversation, this same person argued strongly that this was the main reason that the logging had led to deforestation, suggesting that when he filled out the questionnaire he did not fully understand the question. In the interviews, this question tended to provoke a significant conversation about the fact that since the logging, fires had come to spread more readily and to burn more ferociously. Therefore, this appeared to be a particularly strongly felt factor. It is different than the previous explanations in that it does not involve any changes in the practices of people but rather attributes the increased impact of the burning and the loss of sustainability to an environmental change. This final explanation, if it

is accurate, would suggest that a relatively short term practice such as logging can lead to a situation in which, even when there are no changes in the practices of people, traditional burning practices can become less sustainable.

A 10th Explanation

After the questionnaire was drawn up and distributed, I was given an additional explanation linking the logging to the deforestation. While this explanation was not included in the written questionnaire, it was included in a small number of interviews where it was consistently rated as “very accurate”. It is also a factor that has been mentioned to me by Alois Goldberger and was only left out of the questionnaire by an oversight. The explanation is that after the coming of Cellophil, the use of chainsaws became widespread and it became easier to clear wooded areas to make *kaingin*. This increased the amount of burning for making *kaingin*. Alois Goldberger pointed out that when Cellophil left the area, they did not collect the chainsaws they had brought, so chainsaws became relatively plentiful in the area.

CONCLUSION

As noted at the beginning, the goal of this paper has not been to determine the exact causal relationships by which logging has led to deforestation nor has it been to carry out an accurate opinion poll of local views on this issue. Rather, the goal has been to come up with a basic set of issues that need to be considered in order to carry out research. It therefore represents a very much stage of research. However, I suggest that there are some conclusions that can be derived from this paper.

Firstly, the paper makes it clear that the process by which logging leads to deforestation is indeed complex. The logging that took place had a broad socio-economic and cultural impact on the people. For example, among the factors not already mentioned in this paper, is the fact that it furthered the introduction of a money economy into the area by giving at least some people wages. As we have seen it affected the traditional customs used for conserving the natural environment (the Lapad system), it affected the food supply and the well-being of the people, and it affected the environment in multiple ways—through the loss of forest cover, the destruction of the streams, the loss of moisture in the mountains in the dry season, etc. It is clear, therefore, that there is a complex of environmental, cultural, social and economic factors by which the logging led to deforestation.

Secondly, I suggest that the paper demonstrates what is undoubtedly already apparent to many: that the complexity of the issues behind can be highlighted by focusing on specific instances of deforestation, such as the deforestation in Malibcong and the surrounding area, and that attempting this must involve intense communication with the people actually involved. In other words, one approach to developing an understanding of deforestation is through developing an historical profile of the deforestation in one particular area.

Thirdly, I suggest (but will not address in detail here) that attempts to deal with deforestation must address the whole complex of relationships that have brought about deforestation. This will have to include addressing the socio-economic conditions of the local people, empowering them, and finding ways to establish, in the new context that has emerged, effective ways of carrying on the valuable practices of their traditional culture.

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