

Impacts on Regional Land Use from Investment in Banana Contract Farming by Chinese Companies

Case Studies in Oudomxay Province, Northern Laos



June 2015

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Mekong Watch



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1. Introduction

The government of Laos, pursuing its goal of raising the country above Least Developed Country (LDC) status by 2020 through economic development, has promoted the modernization and commercialization of agriculture. Under this agricultural policy, the government has encouraged agricultural investment from abroad through land concessions and contract farming.

The use of contract farming has been mainly for the cultivation of crops such as maize, cassava, rubber, sugarcane and vegetables, both for the export market and the domestic market. The contract farming has been implemented predominantly through the “2+3” model—where villagers provide land and labor and investors contribute capital, technique and market access under a profit-sharing scheme between the villagers and companies—and the “1+4” model—where the companies also take on the responsibility for labour. While the Lao government has promoted “2+3” model contract farming, there have been reports of cases where the profits actually received by the villagers have fallen far below the proportion agreed to. In addition, Weiyi Shi [Shi 2008], who surveyed contract farming for rubber in northern Laos, has shown that there is a trend towards companies preferring the “1+4” model, in which production can be controlled more tightly, wages can be held at relatively low levels, and from which somewhat larger profits can be gained. Shi points out that the “1+4” model is essentially similar to land concession.

Since around 2010, contract farming for bananas in northern Laos based on investment by Chinese companies has seen rapid expansion in northern Laos. Much of this has been implemented using the “1+4” model, but local governments have become concerned about environmental impacts and contract problems. In this paper, environmental and social impacts resulting from the introduction of banana contract farming, especially the changes brought about in the land use and working patterns of local residents have been studied through field work carried out in Oudomxay Province, northern Laos.

2. Survey Method

As a staff member of a Japanese environmental NGO, Mekong Watch, from 2005 to 2013 the author carried out a land use survey and assisted in the formulation of a land use plan for swidden farmers with the cooperation of the Faculty of Forestry, National University of Laos, the Pakbeng District Agricultural and Forestry Office (DAFO) and with participation in the

Community-based Watershed Management Project. When the survey activities ended in 2013, Mekong Watch was informed by the Oudomxay Provincial Agricultural and Forestry Office (PAFO) through the Lao coordinator for Mekong Watch that PAFO also had serious concerns about the environmental and social impacts of rapidly expanding banana farming, and that a survey was necessary. Mekong Watch therefore carried out a survey and documentary production of banana farming in the two provinces of Oudomxay and neighboring Bokeo with the cooperation of the Oudomxay PAFO and Bokeo Provincial Television Station.¹

As an integral part of this survey project on banana farming, the author and PAFO staff visited a total of eight villages in Namo, Houn, Beng, and Xay Districts, Oudomxay Province, from February 20 to 23 and August 22 to 26, 2014, and conducted interview surveys with PAFO staff, DAFO staff, local residents, migrant workers and Chinese company staff. PAFO staff and the DAFO staff of each district accompanied the survey activities in the local areas. Also used for reference are the video materials taken by the Lao coordinator of Mekong Watch when he visited the local area with the Bokeo Provincial Television Station and Oudomxay PAFO in October 2013.²

The surveyed villages were selected through introductions from each DAFO. Due to the short period for the survey, it was impossible to conduct household interviews by random sampling. Survey subjects were therefore extracted by selecting households that matched the purpose of the survey³ from among the households that were available for interview during the survey period. For this reason, survey subjects were arbitrarily selected and a comprehensive survey could not be conducted due to the limited time available. Moreover, of the 15 survey subjects with whom detailed household surveys were conducted, only four were women, and it was therefore not possible to survey the impacts of the land use changes on women.

3. Banana Farming in Oudomxay Province

Oudomxay Province is located in northwest Laos and shares a common border with China. The province has an area of 15,370 km² and is a mountainous region with elevations between 300 and 1800 m above sea level. According to statistics for 2012⁴, the rainy season rice harvested area is 14,157 hectares (ha), irrigated land being 730 ha and the upland rice area 9,922 ha.

The two important commercial crops of Oudomxay Province are maize and rubber, the cultivated areas of which exceed 50% of the total farmland area of the province [Wong et al.

¹ This "Community Empowerment Activities through a Survey and Documentary Video on Sustainable Land Use in Laos", implemented in FY2013 and FY2014, was supported by a grant from The Japan Trust for Global Environment.

² The documentary can be viewed at <https://youtu.be/i-wa55NtpYA>.

³ For example, villagers who were leasing land to the Chinese companies, or who were acting as banana plantation managers were selected for the interviews.

⁴ Lao Statistics Bureau, Statistical Yearbook 2013 (<http://www.nsc.gov.la/en/Statisticalyearbook2013.php>)

2014:1061]. From around the year 2000, the province has encouraged farmers to shift from swidden farming to maize production, bringing about a rapid expansion in the area of maize cultivation. The exported volumes of maize from Oudomxay Province to China are the second largest in the country. However, maize easily leads to soil degradation and it is reported that dramatically reduced yields generally set in from the fifth year of cultivation. It is also often seen that large amounts of herbicides are used [Wong et al. 2014:1065]. At present, falling maize yields, soil degradation and soil erosion are serious issues in Oudomxay Province. Rubber cultivation is, to some extent, carried out through individual investment, but in many cases the contract cultivation model known as “2+3” is used. The farmer provides the land and labor, while the plantation company supplies the capital, technique and market access. The farmer and the company divide up the profits according to the contract, usually at a rate of 60% for the farmer and 40% for the company. Due to the region’s geographical characteristics, rubber plantations have expanded into uplands and hill slopes, increasing soil erosion risks, and the use of chemical herbicides has also caused local health issues. [Wong et al. 2014:1065].

Cash crops for which planted areas are expanding in recent years are bananas, watermelon, pumpkins and green beans, all grown using investment by Chinese companies. Large-scale banana farming was introduced from 2010, followed by pumpkins from 2011, watermelons and green beans from 2012. The cultivation of many of these new cash crops is implemented using the contract farming model known as “1+4”. In the “1+4” model, since the farmer provides the land and the company shoulders the labor, investment, technique and market access, the farmer is essentially leasing the land to the company. In Oudomxay Province, as will be discussed in the case studies below, all banana farming based on the “2+3” model have failed, and this model is therefore no longer implemented. Contrastingly, banana plantations based on the “1+4” model are expanding. In this report, we look at how the land use practices and working patterns of the local residents have changed due to the “2+3” and “1+4” contract farming models through case studies in Oudomxay Province.

Table 1. New Export Crops in Oudomxay Province

	Year began	Harvested Area (ha)	Exports (ton)
		*2013	*2014
Banana	2010	795	4,940.3
Watermelon	2012	896	2,746
Pumpkin	2011	371	1,153
Green beans	2012	342	1,183

Source: Prepared by the author from material supplied by Oudomxay Provincial Agricultural and Forestry Office in August 2014

Screening procedures for agricultural investments are carried out in the order PAFO

Cultivation Department > Division of Commerce > Provincial Investment and Planning Office, and the permit is granted when the papers return to PAFO. In the case of foreign companies, it is also necessary to obtain a project implementation permit from the Security Maintenance Office.

Since 2010, ten Chinese companies have been involved in banana farming in five (Beng, Namo, Xai, Houn and La Districts) of the seven districts of Oudomxay Province. According to PAFO materials, the area of banana farming projects permitted in Oudomxay Province up to 2014 was 1,041.2 ha, but the actual area of banana plantations was 1,990.09, indicating that there has been banana cultivation in excess of the permits. Exports of bananas totaled 4,940 tons in 2014.

Due to the occurrence of environmental impacts from the use of chemical fertilizers in banana farming and the fact that rice production has fallen in the province, Oudomxay Province announced in 2013 that it would not issue new investment permits for banana farming for export for the following two years.⁵ In fact, however, four new companies became involved in banana farming in 2014, a total of 321.5 ha being newly opened up for banana plantations.



Newly opened banana plantation in Houn District (August 2014)

4. Case Studies

The villages visited in this survey can be roughly divided into two types, 1) villages where the “2+3” banana contract farming model was introduced but later failed, and 2) villages

⁵ “Oudomxay bans banana projects”, Vientiane Times (May 1, 2013)

which implemented the “1+4” banana contract farming model. The two types of contract farming will be described in the case studies for four of the villages surveyed.

4.1. “2+3” banana contract farming model

4.1.1. H Village⁶, Xay District⁷

Overview of H Village

H Village, an ethnic Kmhmu village, has a population of 382, consisting of 98 families in 78 households.⁸ The village was founded in 1954 and moved close to a nearby road in 1999, in accordance with the government’s village location policy. In 2000, the village was amalgamated with another Kmhmu village, Houay Len. The main occupation in the village is the growing of feed maize, in which all 98 families participate. Maize cultivation in H Village expanded from around 2005, but the yields have fallen recently due to soil degradation. From around 2009, plowing using large tractors has become necessary in order to secure a good harvest. While incomes have declined due to the drop in yield, the cost of hiring tractors is rising, resulting in financial problems for the villagers.

Until around 2009, the majority of households still practiced swidden farming, but under the government’s shifting cultivation eradication program many households have turned to maize and other kinds of farming, leaving only eight or nine families engaging in swidden farming. Since there is also little flat land, only nine families have wet rice paddy fields. In 2010, the German government, the United Nations Office on Drugs and Crime (UNODC) and the Thai Royal Project Foundation initiated a joint project for organic vegetable farming, in which 45 families are now participating.

Land and Forest Allocation Programs have been implemented three times in H Village, as a government project in 1997, supported by an international NGO, German Agro Action (GAA) in 2003, and supported by UNDOC in 2014, but land certificates have not yet been issued to individual households. Villagers currently prove their land-use rights with a Land Tax Declaration or Land Tax Receipt.

Banana Farming in H Village

Contract farming for bananas was introduced into the village over two years from 2009 to 2011, with 34 families participating on an area of 64 ha planted with banana trees. The Chinese company contracts, six-year contracts between the company and the participating households, were carried out using the “2+3” model.

⁶ Any names of villages and individuals mentioned in this report are pseudonyms, in order to protect the identity of the respondents.

⁷ The author visited H Village on August 24, 2014, accompanied by one member of the PAFO agricultural staff, and conducted interviews with three local residents including a member of the village authorities.

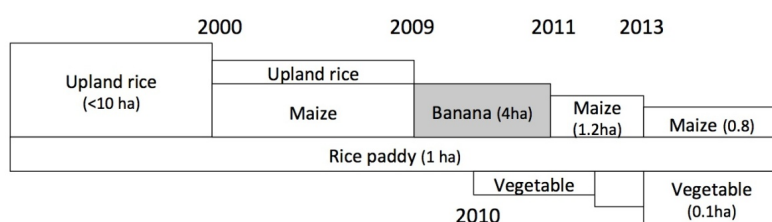
⁸ In this paper, the Lao term *khopkhua*, as defined by the official family book (*peum sammanorkhoua*) is translated as “family”. Similarly, a unit living in a house (*langkha heuan*) is translated as “household”. A household usually accommodates two to three families.

At the time of introduction of the banana farming, the village headman said, “We were told by the company that we would be able to receive a high income, and at the time I did not think that there would be adverse impacts, so I introduced the project to the villagers,” the headman himself also participating in the banana farming project. Two Chinese technicians were stationed in the village, giving guidance on the farming methods while providing necessary materials for production.

Under the contract, the company promised to purchase 700 tons of bananas per year at 300 kip/kg, but since in fact they only purchased 150 tons/year the villagers withdrew from banana farming after only two years. The villagers have received no explanation from the company concerning the reason for the breach of contract.

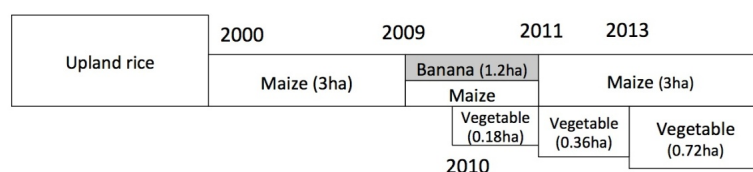
After the failure of the banana farming, while the greater part of the banana plantation farmland was returned to maize fields, a part of the land was converted to vegetable fields with support from the UNDOC project.

Figure 1. Changes in Land Use by Mr. A of H Village



Source: Prepared by the author from an interview with Mr. A, resident of H Village.

Figure 2. Changes in Land Use by Mr. B of H Village



Source: Prepared by the author from an interview with Mr. B, resident of H Village.

Figures 1 and 2 show briefly the changes in land use for two families in H Village. In the past, upland rice cultivation by swidden farming was the main occupation in the village, but the cultivation of maize for feed expanded from around the year 2000 and swidden field areas declined. The families which began banana farming under contract with the Chinese company from 2009 converted their maize fields to banana production. After withdrawing from banana farming due to failure of the project in 2011, the banana plantation was converted back to maize fields again. Meanwhile, as stated above, organic vegetable cultivation supported by UNDOC and others began in the village from 2010 and has been

successful up to now.

Mr. A's (35 years of age)⁹ family carried out banana farming on four ha of land, but he said, "Because the company did not buy the bananas, the costs turned out to be more than the money I got from sales. Not only was a lot of labor required, the transport was very hard as the bananas are heavy, and we had to use a lot of chemical fertilizers, and so we are concerned about a decline in food security." While taking part in the banana farming, Mr. A also began vegetable farming by borrowing land from relatives when the organic vegetable cultivation project began in 2010. In order to place more emphasis on the vegetable farming, after the failure of the banana farming he reduced his area for maize farming and is expanding his area of vegetable cultivation. He is able to harvest around five tons of maize from his 1.2 ha field, but the annual income from this is 6.7 million kip after the cost of purchasing seeds, the wages paid to day laborers for weeding, and other expenses are subtracted from sales income. Meanwhile, his current annual income from the cultivation of vegetables and grapes grown in his four hothouses is 75 million kip, which amounts to over 60 million kip after subtracting costs for land rent, chemical fertilizers, wages for day laborers, and so on. Each vinyl house cost 4.8 million kip to set up, but two of them were built with aid from the project while he paid personally for the other two. He says that he now plans to invest in one further hothouse. Mr. A plans to make his living mainly from vegetable production in the future.

After the banana farming failure, Mr. B (40 years of age) went back to maize farming, but also decided to participate in the vegetable project, and is now carrying out vegetable production in four vinyl hothouses. He said, "There is only one harvest a year of maize, but as vegetables can be sold each month we can receive income each month." He now thinks that he will stop maize farming in two years' time and make a living from vegetable farming.

Due to the failure on the part of the company to keep their promises, after the "2+3" model banana farming failed in H Village, the participating villagers converted their fields back to maize farming. Meanwhile, some of the villagers placed more emphasis on organic vegetable cultivation, which received support from a development project, thus bringing about a change in land use.

4.1.2. B Village, Xay District¹⁰

Overview of B Village

B Village is a multiethnic village of Lao, Leu, Kmhmu, Phu Noy, Ho and Hmong peoples, having a population of 1,903 consisting of 352 families in 334 households. The main occupation is paddy field rice cultivation, and with the exception of 15 families who make a living by day labor, almost all the families own paddy fields.

⁹ In this paper, fictitious names are used for interviewees and companies for reasons of privacy.

¹⁰ The author visited B Village on August 26, 2014, accompanied by one member of the PAFO agricultural staff, and conducted interviews with three local residents including a member of the village authorities.

Banana farming in B Village

In only one year, between 2010 and 2011, the “2+3” model of banana farming was implemented in B Village by the same Chinese company that carried out the banana farming project in H Village. The sixteen participating families converted 26 ha of what was originally paddy field land into a banana plantation. One member of the Xay District Agricultural and Forestry Office (DAFO) staff personally acted as intermediary at the time of introduction of the project, and the contract between the company and the village was concluded without the formal involvement of DAFO or PAFO. Formal contracts between individual households and the company were not drawn up.

The term of the contract was three years, but inappropriate land was selected. As the land converted to the banana plantation was adjacent to paddy fields, the soil absorbed water and the banana cultivation did not proceed well. In less than a year, the company disappeared with no explanation. After appealing to DAFO, the province and the provincial council, the village was granted six million kip/ha as compensation for two years. The villagers were dissatisfied with the compensation, one 62-year-old male villager saying, “We were supposed to have received compensation for three years, the term of the original contract, but we were only paid for two years.”

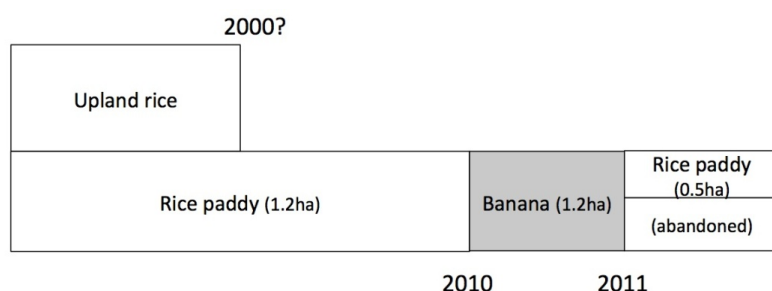
Of the 26 ha converted to banana plantations, only 0.5 ha was converted back to paddy at the personal expense of the owner, but as the cost of conversion was six million kip/ha, the remaining 25.5 ha of land was left as it was. In contrast to the project at H Village, where maize fields were converted to a banana plantation and then later returned to maize cultivation, the paddy fields converted to banana plantations in B Village were not returned to their former land use due to cost, and cultivation on that land was abandoned after the failure of the banana farming project.

Figures 3 and 4 show land use changes for the families of Mr. C (58 years of age) and Mr. D (30 years of age) of B Village. After the banana farming failure, Mr. C paid three million kip to have 0.5 ha of the total of 1.2 ha he had converted to banana plantation returned to paddy field. Concerning the remaining 0.7 ha, Mr. C said, “If possible, I would like someone to buy the land from me. If another company wants to carry out a project, I will also consider leasing the land to them.” Mr. D’s family said, “We were not eager to get involved with the banana farming, but when converting adjacent land to a banana plantation they also mistakenly plowed our land too, so we had little choice about participating. Since we do not have the funds to reconvert the land that became a banana plantation back to paddy field, we have abandoned cultivation on that land. Not only did we lose the land, but now soil erosion occurs when rain falls, damaging the remaining paddy fields.”

Under normal practice, it was necessary for the company to receive a permit from PAFO in order to carry out agricultural investment, but in the case of B Village a DAFO staff member

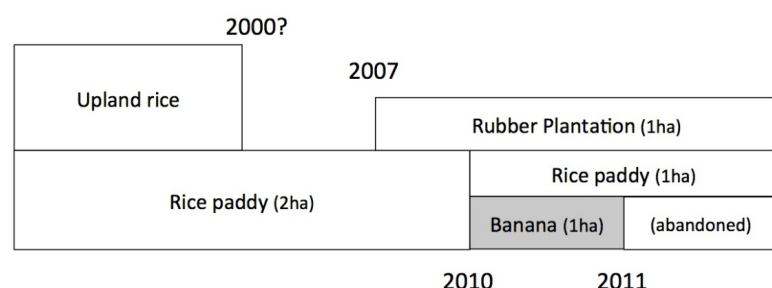
acted personally as intermediary between the company¹¹ and the village, the project being implemented without formal permission. There were also no formal contracts with individual households and adequate compensation could not be received for the breach of contract by the company.

Figure 3. Land use changes for Mr. C's family of B Village



Source: Prepared by the author from an interview with Mr. C, resident of B Village.

Figure 4. Land use changes for Mr. D's family of B Village



Source: Prepared by the author from an interview with Mr. D, resident of B Village.

4.2 "1+4" Model Banana Contract Farming

4.2.1. S Village, Houn District¹²

Overview of S Village

S Village is located 21 km from the administrative center of Houn District, and has a population of 3,952, consisting of 866 families in 668 households. Adjacent villages were amalgamated into this village in 2005 and 2013, the ethnic structure of the population being Lao/Lue 32.5%, Kmhmu 49.5% and Hmong 18%.

The main occupation in the village focuses on agriculture; maize farming and paddy field

¹¹ This company is currently implementing "1+4" model banana farming with permission in Namo, Beng, and Xay Districts.

¹² The author visited S Village on two occasions, on February 22 and August 23, 2014, accompanied by one member of the PAFO agricultural staff and one member of the Houn DAFO. Individual interviews were conducted with the village headman, seven village families, four Lao migrant laborers, and two Chinese migrant laborers. A group interview was also conducted with staff of the Chinese company (one Chinese manager, one Chinese technician, a Lao consultant and a Lao interpreter).

rice cultivation. The planted area of maize was 1,117 ha and the banana plantation area 199.9 ha. In the past, the main occupation was the growing of upland rice in swidden fields, but from around 1998 the Hmong people began to grow maize, which was expanded in 2002 and 2003. Following this, the practice of growing upland rice has almost completely ceased.

Land and Forest Allocation was implemented in 1995, but land certificates have not yet been issued to individual households, and some of the land use rights are secured by Land Tax Declarations or Land Tax Receipts.

Banana farming in S Village

Banana farming is being implemented by two Chinese companies (known here as Company S and Company Y). Company S managing a banana plantation of 137.9 ha from 2013 and Company Y managing a 62 ha plantation from 2014. Originally, a different Chinese company had begun the banana plantation that Company S now manages in the village, but had withdrawn after land rent payments fell into arrears, after which Company S took over the project.



Banana plantation in S Village (August 2014)

The numbers of families participating are 129 on Company S plantation and 45¹³ on the Company Y plantation, both of which are managed under the “1+4” model. As mentioned above, Siboun Heuang is a multiethnic village, but it is mainly the Kmhmu villagers that are leasing land to the banana plantations. One reason given for this is that the banana plantations are in the area of the former Donkeo Village (a Kmhmu village) before it was

¹³ Since there are a number of families that have leased farmland to both companies, these families are counted twice in the figures.

amalgamated with S Village (formerly a Lao/Leu village) and thus many of the villagers who own the land that is now used for the banana plantations are Kmhmu people. Furthermore, the Lao/Leu villagers living in the original S Village own large areas of land which are relatively flat and have fertile soil, where they practice paddy field rice farming, and thus it can be presumed that their motivation to lease land for banana plantations is weak.

The contract between the village and the companies incorporates clauses stating that crops other than bananas will not be planted, that the ten-year contract will be reviewed in the fifth year, that the land rent shall be paid to the landowners on a specified date each year, and that the project will be suspended if payment is delayed.

According to the vice-headman, since under the "1+4" model the company holds responsibility for management, the problems concerning buying price and quality control that often occur under the "2+3" model do not easily arise, and the villagers prefer the "1+4" model because they are assured of the cash income. There is, however, the demerit that the knowledge and skills are not transferred to the local residents. The village authorities are also aware of the risk of environmental impacts occurring due to the use of agricultural chemicals in the banana plantations, but are taking no countermeasures at present.

Let us first look at the changes in the villagers' land use to see the impacts of contract banana farming on the livelihoods of the residents of S Village. Of the seven families interviewed in S Village, the three families who have leased land to the Chinese companies all switched from upland rice cultivation on swidden fields to maize cultivation for animal feed around the year 2000, and are now leasing a part of the maize fields to the banana plantations.

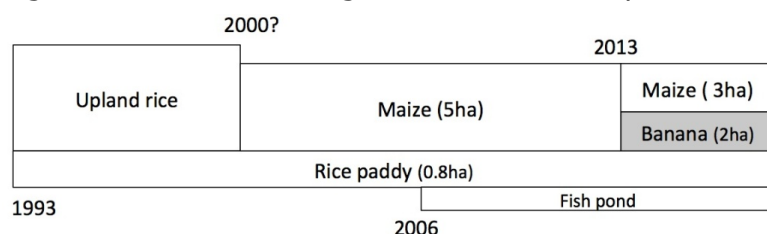
For instance, Mr. E (a 52-year-old Kmhmu man, see Figure 5) has leased two of his five ha to the company for a rent of eight million kip/ha (of which 200,000 kip/ha is paid to the village as tax¹⁴). Mr. E said, "Previously, I planted five ha of maize with my wife, but it was terribly hard work as two people is not enough labor power for this." By leasing land to the banana plantation, the planted area for maize has been reduced and the surplus time gained has been used to raise livestock and manage a fish farming pond. Whereas previously the livestock and fish were mainly for consumption at home, Mr. E has now become able to sell some of what he produces. At the same time, Mr. E said, "We are concerned about soil degradation due to the heavy use of herbicides and chemical fertilizers, and I am also worried that the fish farming business might be adversely affected." Further, as there is a great deal of work to do in banana plantations, he has no intention of investing in and planting bananas himself, and as he is busy with the maize cultivation, livestock raising and managing the fish farming pond, he has no interest in becoming a day laborer in the banana plantations. He said, however, that his son, who is a high school student, participates in day labor, such as weeding and banana transportation, in the banana plantations during school vacations. Regarding the

¹⁴ As S Village is a pilot village for the "Sam Sang" ("Three Builds") policy, under which powers are devolved to the local region, the village and not the local district has the power to levy land taxes.

land use after the contract expires in ten years' time, Mr. E stated, "I'm not sure yet. We may return to maize farming, or we may plant a new crop if there is a recommendation from DAFO."

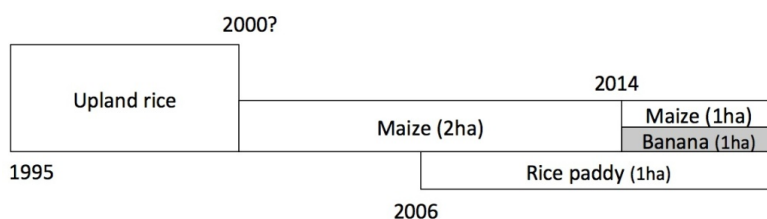
Mr. F (a 37-year-old Kmhmu man, see Figure 6) has leased one ha of his two ha of maize fields to a banana plantation for a rent of eight million kip. He said, "(Due to soil degradation in the field,) the cost of the large tractor to plow the field and the day labor for weeding became too much of a burden." At the same time, he also stated, "As the banana plantations use large amounts of agricultural chemicals, at first I did not want to lease my land, but as the owners of the surrounding land all decided to lease their land, I didn't really have the option of being the only one who didn't." Mr. F said, "I am busy working in the paddy fields and growing maize, so I do not participate in day labor in the banana plantations." As with Mr. E, Mr. F said he is also unsure about his land use after the end of the banana plantation contract.

Figure 5. Land use changes for Mr. E's family of S Village



Source: Prepared by the author from an interview with Mr. E, resident of S Village.

Figure 6. Land use changes for Mr. F's family of S Village



Source: Prepared by the author from an interview with Mr. F, resident of S Village.

In S Village, almost all of the villagers who have leased farmland to the banana plantations have leased land that that were originally using as maize fields, but nearly all of the families have decided not to lease all their land, and have retained some land as maize fields. Mr. E explained the reason for this by saying, "We do not lease all of our land because of the risk involved," and Mr. F said, "We are assured of income from the maize as we grow it under our own responsibility, but we would be unable to live if rent payments from the company were delayed."

Villagers who did not lease farmland to the banana plantations cited the following reasons for not doing so. "The farmland I own is far from the land being used for the project."

(31-year-old Lue woman) "I was asked to lease land for the banana plantations, but as my soil is good, I turned them down because I can make more money planting maize by myself. I'm also concerned about trouble over payment of land rents." (35-year-old Lue woman) "I can live from my paddy fields and by growing maize, so I have no need (to lease land)." (45-year-old Lue man) Some dissatisfaction with the banana plantations was also expressed by villagers who are not involved in the projects. "The banana plantations give off a bad smell, and I am also anxious about the fact that they use large amounts of agricultural chemicals. Also, as the banana plantations pump up water from the Nam Beng River, we are worried that this might cause a shortage of water for our lives and our agricultural work." (35-year-old Lue woman) It appears that there is a possibility that friction over water use might break out between the banana plantation managers and the villagers who farm paddy fields.

Let us look next at the labor situation in the banana plantations. According to the interview with the vice-headman, around 25% of the villagers have had experience of day labor in the banana plantations. The daily wage for work such as chemical spraying, covering the banana bunches with plastic bags, picking the banana flowers, and packing is 50,000 kip, and for cutting and transporting bananas it is 2,500 kip per bunch. A woman (40-year-old Kmhmu), who had been working at a banana plantation since one month previously whenever she had days when she was not working in her own maize field, was receiving 50,000 kip per day for doing work such as picking the banana flowers and preparations for covering the bunches with plastic bags. She said, "Doing this work as well as working in the maize field is tiring, but I do it because I want to make some cash income."

Those who are tending bananas full time are migrant workers from other districts within Oudomxay Province or from neighboring provinces. More than ten families were living in the banana plantation camp to look after the bananas. Each family tends 3,000 to 5,000 banana trees (carrying out weeding, chemical and fertilizer spraying or spreading, flower picking, placing plastic bags over the bunches, and so on), receiving a payment of 8,000 kip per tree. According to the Chinese manager of the plantation, at first he was employing Siboun Heung villagers to tend the bananas, but, he said, "If we employ the villagers, there are many days when they do not come to work in the banana plantation because they are working on their own farmland, looking after their livestock, or because of other family circumstances, and so we now only hire them as day laborers. The migrant workers live in the banana plantation camp, and because they can work every day, the migrant workers are more suitable for tending the bananas."

This survey interviewed three migrant workers who were doing the work of tending the bananas on the banana farm in S Village. A Kmhmu man (21 years of age) from Pakbeng District, Oudomxai Province, was working at the banana plantation along with his mother and younger brother for the second year. His father and other brothers were practicing swidden farming in his home village. He said, "(In my village) our occupation is swidden farming, and

there is no way to make cash income. The Chinese company came to village to recruit workers, and we were told about this work. At first, I was afraid (of going away as a migrant worker), but I came with three other families to S Village in order to make cash income.” Living and working at the banana plantation for ten months of the year, the family looked after 5,500 banana trees in 2014. In 2013, they tended 3,000 trees, and gained a total income of 14 million kip after subtracting 10 million kip for living expenses, which are paid in advance each month. While saying, “We were able to send my younger brother to school with the income,” he also stated that “It is hard to get food here, and as there are absolutely no days off, I have become quite thin since I began working here. I will stop doing this banana plantation work this year and go back to my village to do swidden farming.” A Ho man (17 years of age) from Phonsaly District, Phonsaly Province, had been working at the banana plantation in S Village for three months after an introduction from relatives. Five of his relatives were tending 12,500 banana trees. He said, “I am working to feed my family. I am tired because there are no days off, so I will stop working here at the end of this year and go back to my village.” A Kmhmu man (40 years of age) from Nambak District in Luang Prabang Province, was tending 5,000 trees with his wife. “At first, we were told that we would be paid in accordance with the number of trees tended, but we were (later) told that we would not be paid for bananas that did not meet the quality standard. I’ll think about whether we will work here again next year or not when I receive the final payment,” he said.

In the case of S Village, the predominant pattern was that migrant workers came to the village through introductions from company recruiters or relatives, and worked on the banana plantations for one to two years before returning to their home villages. The vice-headman of the village said, “Thus far, there has been no trouble between the migrant workers and local residents,” but a further survey is necessary to examine what impact the influx of migrant workers has had on the village.

4.2.2. P Village, Beng District¹⁵

Overview of P Village

P Village is a Leu village with a population of 352, consisting of 91 families in 80 households. The main occupation is paddy field rice cultivation, all households owning paddy fields. Secondary occupations are labor in Chinese companies’ banana plantations or watermelon fields, maize cultivation, and upland rice cultivation on swidden fields. Watermelon production is carried out by investment from a different Chinese company than that operating the banana plantation, 35 families leasing their paddy field land to the company during the dry season (December to April) only. According to the vice-headman, the changes in land use after banana farming began under the Chinese company resulted in no change in the main occupation of paddy field farming, but the area of swidden fields and

¹⁵ The author visited P Village on August 25, 2014, accompanied by one member of the PAFO agricultural staff, and interviewed four village families, including one of the village elders.

number of families practicing swidden farming decreased.

Banana farming in P Village

Banana farming has been carried out in P Village by the Chinese company T since 2011. The area of the plantation is 46.74 ha, of which two ha were originally paddy fields. The remainder was maize fields that were converted to banana plantations. Families that have leased farmland to the banana plantation number 51 and nearly all the households in the village have been involved in day labor. In the case of P Village, banana plantation labor has been limited to the inhabitants of the village. Tending of the banana trees is carried out by 42 families, 2,000 trees being generally tended by one married couple, who receive an income of 450 kip per month for each tree. Five villagers are also employed as company staff, and these people receive a monthly salary of 1.5 to 1.6 million kip.

When the company initiated the project, the village acted as intermediary and carried out the selection of the banana plantation farmland. Village authorities, accompanied by the company staff, searched for candidate land within the village and gave explanations to the landowners. Some of the residents, including the four households who own the paddy fields which became part of the candidate land, did not want to lease their land, but were persuaded by the village authorities. The term of the contract is ten years with the contract, including adjustment of the price, to be reviewed in the fifth year.

Income can be gained from day labor, land rent and fees for tending banana trees. Many residents are continuing to farm their paddy fields, and the village authorities consider that there is great merit in being able to obtain cash income from banana farming.

As shown in Figure 7, Mr. G's (a 40-year-old Lue) family leased their maize field and a part of their swidden fallow land to the banana plantation in 2011 and is receiving an annual 5.2 million kip for land rent. At first "we did not want to lease our land, but because we found our land was placed in the center of the candidate area for the banana plantation, we couldn't be the only ones to refuse to lease our land," said Mr. G, who was not very positive about participating in the project. However, Mr. G himself was employed as one of the company staff, earning a monthly salary of 1.6 million kip for water management of the plantation and mixing agricultural chemicals, as well as arranging for villagers to come for day labor. He and his wife also tend around 2,250 banana trees, receiving a wage of 450 kip per month for each tree. In addition, he and his wife participate in day labor for banana transporting and packing, earning a daily wage of 50,000 kip, the couple's total annual income from day labor amounting to about 2.5 million kip. After beginning to participate in the banana project, they have stopped growing maize and upland rice and have abandoned their surplus land. Mr. G says of the advantages of the banana plantation project, "We gain cash income from the leasing of land (to the banana plantation) and from working there, and because of this have been able to buy food and send our children to school," but at the same time, the difficulties are that "we have

to work eight hours nearly every day and are able to rest for only about three days a month. The work requires endurance. Large amounts of agricultural chemicals are used, so we have concerns about impacts on our health and on the environment.” Regarding future land use, Mr. G said, “As I have no capital or skills, I have no intention of investing in banana farming. (Whether or not I will renew the contract for the lease of the land) is something I will consider when I see how the rent and so on change in the fifth year of the term. (In the case that I lease the land for the full ten years) I do not yet know about the land use after that.”

Figure 7. Land use changes for Mr. G’s family of P Village

2000?	2011
Upland rice	Upland rice
	Maize
	Banana (1.28ha)
	Rice paddy (0.28ha)

Source: Prepared by the author from an interview with Mr. G, resident of P Village.

Of the four families interviewed for this survey, Mr. H (40-year-old Lue), in almost the same way as Mr. G, continued to farm his paddy fields while leasing what were originally a part of his maize or upland rice fields to the banana plantation, suspending his production of maize or upland rice, and obtaining cash income in the form of a salary as one of the company staff and wages for day labor.

4.2.3 Investing Chinese Companies: The Case of Company S in Houn District¹⁶

Based in Qinghong, Yunnan Province, China, company S, operator of the banana farming project in S Village, was founded in 2008 to carry out investments in Laos and in began farming and export projects for bananas, watermelons, pumpkins and chili peppers in Houn District in 2009. The company continues to produce and export agricultural products, but also intends to expand its business in Laos to the construction of hotels and markets in the future. The company has a Chinese staff of 19 stationed in Laos, including seven management staff, and a number of technicians, drivers, and so on. The company also employs five Lao nationals, three interpreters and two consultants.

At first the company had wanted to carry out the banana farming project under concession contracts, but permission for this was not granted by the Lao government and the projects began by using the “1+4” model contract farming. Banana farming began in Houn District in 2009 with 48 ha, and in 2013 new farming permission (for the period 2013 to 2023)

¹⁶ On 24 August 2014, group interviews were conducted with one member of the management staff and one technician (both Chinese) of company S, a Lao consultant and a translator (four people in all, and with two Chinese members of the staff of Company M (based in Sichuan Province, China), a subcontractor to company S. Further, on August 23, 2014, an interview was conducted with two Chinese migrant worker families working at the plantation operated by these companies in S Village, Houn District.

was received and the plantation area expanded to 780 ha in 2014.¹⁷ On average, 2,200 banana trees are planted per ha, two bunches (20 to 35 kg) being harvested per tree. The bananas are exported to China across the Boten (Laos) – Mohan (China) international checkpoint and sold all over China.

Four Chinese companies, based in Sichuan Province, Beijing and other locations, manage the banana plantations as subcontractors to company S, which handles the export of all the bananas harvested on these subcontractors' plantations.

The companies search for banana plantation land, taking into account the quality of the soil, the area, the villagers' temperament and interest, and after consultations and conclusion of contracts with the district and village, proceed to conclude contracts with individual households. The term of the "1+4" model farming contract is ten years, the land rent and other matters in the contract being reviewed in the fifth year.

A company S Chinese manager (a 31-year-old man), who is carrying out production management and labor management at the plantation, is from Simao, Yunnan Province, and has been working with his wife on the plantation for two-and-a-half years. Before coming to Laos, he had been engaged in paddy field rice farming, maize production and banana farming in Simao. He received an introduction to his current job from a relative who is an executive at the company. For the future, he says that he intends to work at the current plantation, opened in 2014, until the contract ends in 2023. A Ho woman (35 years of age), also from Simao, is acting as an assistant to her husband, who is working as an interpreter and vice-manager of the plantation. Previously, she worked with her husband in Simao doing paddy field rice farming, cultivating swidden fields and planting rubber trees, but her husband came to Laos about ten years before and was employed by a Chinese company to engage in rubber tree plantation projects in Vientiane, Oudomxay, Luang Namta and Bokeo Provinces. As her husband became unemployed due to a fall in rubber prices, he began to work at this banana plantation, but said that he planned to move to a larger banana plantation in Luang Prabang Province in the near future.

In this case study, company S had moved into several agricultural business areas besides banana farming, and there were also a number of subcontractors working under company S, which had received cultivation permits from provinces. It was also found that the people who worked for the company did not stay in one place, but in some cases moved from place to place in Laos in search of better pay. This complex business pattern and the movement of workers is making it difficult for the administration to maintain knowledge of the actual situation of the investing companies.

5. Conclusion

¹⁷ According to PAFO materials (August 2014, received from a member of the PAFO staff), however, the company's farming permit is for 600 ha, and the actual planted area is 684 ha. There is some discrepancy between these figures and those given during the interviews.

5.1 Land Relations

The following patterns were seen in the land use changes in the villages covered by this survey:

- (i) conversion from paddy fields to banana plantations (B Village, one part of P Village),
- (ii) conversion from swidden fallows (one part of P Village and one part of H Village), and
- (iii) conversion of swidden fields to feed maize fields, followed by conversion of the maize fields to banana plantation (H Village, P Village, and S Village).

Compared to the cases of H Village and B Village, where the “2+3” model banana farming failed, in S Village, where maize cultivation had been the original land use, it was possible to return to the original land use of maize cultivation relatively easily after banana farming had ceased. Moreover, as development project support came into the village, a part of the land vacated by the banana plantation was successfully converted to fields to grow vegetables for the market. At the same time, in the case of B Village, as paddy fields were reformed into a banana plantation, following the failure of the project almost all the land was abandoned due to the cost of reconverting the land back to paddy fields again. The conversion of paddy fields to banana plantations is actually prohibited by Oudomxay Province, but there has been a series of cases of this kind of conversion.

While the “1+4” model is termed “contract farming”, it is essentially land leasing, the rents paid being around five to eight million kip/ha in the case of conversion from paddy field or maize field with good soil on flat land, four to five million kip/ha on hilly land, and two to three million kip/ha on sloping, undeveloped land such as swidden fallows. In some villages in Oudomxay Province, individual household land certificates have not yet been issued and the issue of at least a Land Tax Declaration or Land Tax Receipt is a requirement for the lease. In the case of S Village, where some unsurveyed land was leased to the banana plantation, it was necessary for the landowner to have the land surveyed and registered in advance by the District Land Management Authority at his or her own expense.

In the background to farmers who were producing maize undergoing the land use conversion to banana contract farming is thought to be the fact that maize farming had been continuing for ten to 15 years. While yields were falling due to soil degradation, the financial burden of the rent for the large-scale tractor to plow the field, previously unnecessary, and the cost of labor for weeding became larger, resulting in falling profits when costs were subtracted from sales income. In the case of Mr. F of S Village, maintaining the maize fields came to necessitate plowing using a large-scale tractor and day labor for weeding, but by leasing half of the maize area to a banana plantation it became possible to select the option of reducing the scale of the maize farming to that which could be carried out using the labor of just the husband and wife couple while receiving rent on the remainder of the land. Thus, as a risk aversion strategy, the maize field was retained without conversion of all land owned to banana plantation. Contrastingly, in the case of Mr. G of P Village, the leasing of the land to

the banana plantation became the opportunity to stop maize farming and gain cash income by becoming employed as a staff member of the banana plantation company. Nevertheless, Mr. G continued to cultivate paddy fields in order to secure a food supply.

Both the cases of Mr. F, who suppressed costs he had incurred up to that time by reducing the scale of his maize fields, and Mr. G, who stopped maize farming to gain cash income as a company worker, can be said to be rational decisions at that point in time, when the yields of maize were falling. They did not, however, form a long-term outlook for land use. As the Chinese manager of the banana plantation in S Village said, "When bananas have been planted for ten years, the yields will drop due to soil degradation, and we will move to another place," and thus it can be surmised that there is little possibility that the contract will be renewed and banana farming continued in ten years' time.

It should be pointed out as one of the characteristics of the "1+4" model that the investor, the landowner and the workers who actually carry out agriculture on the land are not necessarily the same people. As in P Village, there were cases where the residents who leased their land also worked in the banana plantation, but cases were also seen where, in S Village for instance, the Kmhmu villagers leased their land to the Chinese company and Ho migrant workers employed by the company did the farm work. With the separation of landowner and cultivator, there is the fear that land use practices that do not take sustainability into consideration, such as the unhesitating use of pesticides and chemical fertilizers, will be carried out. Mr. A of H Village, who carried out banana farming on his own land under the "2+3" model, said that he felt reluctant to use large amounts of chemical fertilizers on his land, but since it is not usually the landowner working the soil in a plantation under the "1+4" model, there is a strong possibility that unsustainable land use practices will be implemented with little hesitancy.

5.2 Labor Arrangement

Lao nationals employed in the "1+4" model banana plantations can be mainly categorized into (i) day laborers, (ii) resident workers managing a fixed number of banana trees, (iii) plantation management staff carrying out tasks such as managing water supplies for the plantation and securing day labor, (iv) Chinese-Lao interpreters, and (v) company managerial staff.

Day laborers are generally hired from among the villagers of the village where the plantation is located or from surrounding villages, and are paid a daily wage of 50,000 to 60,000 kip for carrying out tasks such as mowing grass, picking the banana flowers, covering the banana bunches in plastic bags, and packing the harvested bananas. In all cases, the transport of bananas was carried out on a commission system in accordance with the number of banana bunches carried, and although there are differences depending on the distance from the plantation to the location where the bananas are packed and so on, around

2,000 kip is paid for each bunch.



Day labourers washing bananas with chemicals (Napa Village, Beng District / February 2014)



Day labourers carrying banana bunches (Napa Village, Beng District / February 2014)

Migrant workers are employed as resident banana plantation managers, as in the case of S Village, or local villagers may be employed, as is the case in P Village. Company S, which operates the banana plantation in S Village, has company staff travel around other provinces and districts looking for people to recruit. The banana tree managers, under the guidance of

Chinese technicians, tend an allocated number of banana trees, mow grass, manage water supplies, spray or spread agricultural chemicals and fertilizers, and so on. In the case of a married couple working as migrant workers in S Village, an annual payment of 7,500 kip is made for each banana tree, the couple tending a total of around 5,000 to 6,000 trees. In P Village, the villagers, who tend banana trees while maintaining occupations such as paddy field farming, look after 2,000 to 2,500 trees per married couple, receiving a payment of 5,400 kip per tree.

Village authorities are frequently appointed as banana plantation management staff. They not only carry out work such as water management and equipment maintenance and repair at the plantation site, but also act as intermediaries between the company and the villagers by perform services such as negotiations for land use and the securing of day laborers. In the case of P Village, the vice headman, party members and so on were appointed to these positions, receiving a monthly salary of 1.5 to 1.6 million kip.

In general, ethnic Ho people, who migrated from China to northern Phongsaly Province and other areas several generations ago, and who speak a language similar to Chinese, are employed as Lao-Chinese interpreters. A Ho interpreter from Phongsaly Province working for company S was receiving a 3 million kip-a-month salary.

Company S also has two senior advisors. One of them, who used to work for the Department of Commerce, Ministry of Industry and Commerce in Vientiane, came back to Houn District, his hometown, and began to work for the company. Retired government officers such as this man often play the role of mediator between investors and local governments.

5.3 Concerns and Recommendations

With the failure of banana farming using the “2+3” model, as mentioned above, Oudomxay Province announced a policy of suspending new permits for the “1+4” model in 2013, but in fact banana farming using the “1+4” model expanded rapidly in 2014. It has become clear from this survey that because many of the villagers participating in the “1+4” model contract farming have gained cash income without fail each year the projects have been welcomed, while at the same time there are also a large number of concerns.

Firstly, the system for management of project investors is underdeveloped and thoroughgoing efforts are not being made to ensure observance of the law. We fear that the expanding agricultural investment by foreign businesses is not being adequately managed by the PAFO. In the cases of “2+3” model banana farming carried out in H Village and B Village, the projects were implemented at the district level without passing through PAFO. It has also been pointed out that some corruption took place between the DAFO local staff and the company.¹⁸ It has also not been possible to prevent the conversion of paddy fields to banana

¹⁸ From an interview with PAFO Cultivation Department staff (February 20, 2014).

plantations, which has been prohibited. Problems concerning contracts between the company and the villagers have arisen, for example, in the failure of the “2+3” model and in the case of S Village, where the first investing company failed to make rent payments, and thus it cannot be said that the systems for avoiding and resolving these kinds of problems have been fully developed. Developing these systems and observance of the temporary freeze on new permits for banana farming projects while stemming the expansion of banana farming are urgent tasks that require attention.

Secondly, there is the problem of the consensus formation process for land use. Of the villages surveyed, several villagers in B Village, S Village and P Village, when stating the reason for participating in the projects, said, “I did not want to participate in the project, but as adjacent land was to be leased to the banana plantation, I could not be the only person to refuse to participate.” There are cases where village authorities are employed as company staff, and it may be surmised that there are difficulties in formulating village-level land use plans on the basis of free expression of views by individual households.

Thirdly, there are the environmental impacts of soil and water contamination. Chemical fertilizers and agricultural chemicals, used in large quantities on banana plantations, cause soil degradation and water contamination in the rivers into which they flow. The illegal dumping of waste such as plastic bags and other packaging still coated with agricultural chemicals is also becoming an issue. As of the present time, the investing companies have come up with no measures to alleviate this problem, and the districts and provinces are unable to regulate the environmental impacts. The development and upgrading of environmental standards for agricultural investment projects and their thoroughgoing application to the investing companies is a crucial task.

Fourthly, there are concerns about health impacts. The companies say they are distributing masks, rubber gloves, boots and so on to the workers in the plantations, but there are many cases where these are not used, perhaps because insufficient explanation is given and the workers have little awareness of health impacts, or that the workers do not like to wear the articles because they are not used to using them. Especially, mothers spraying agricultural chemicals while carrying infants on their backs, and small children of migrant workers helping with chemical agent spraying without the use of any safety equipment were seen during the survey. There is a necessity for the companies and the administration to urge the workers to carry out thoroughgoing health management.¹⁹

¹⁹ Mekong Watch, the organization for which the author has carried out these activities, has produced and is distributing, with the cooperation of Oudomxay Province, video materials explaining the dangers of agricultural chemicals and calling for safety measures.



A son of migrant workers working at a banana farm (S Village, Houn District/ August 2014)

Fifthly, there is the fear that water disputes will surface between the banana plantations and surrounding residents in the near future. Banana requires the use of large amounts of water, which is drawn from nearby rivers and sprayed in the plantations by pump. At S Village, water is drawn from the Beng River and dissatisfaction was heard from villagers who are practicing agriculture that the volume of water in the river is declining due to the pumping up of large amounts of water for the banana plantation. In the future, the necessity for planning at the village, district and provincial levels will become increasingly important, not only with regards to land use but also for water use.

Sixthly, it can be pointed out that there is the possibility that social friction may occur between Chinese or Lao migrant workers and local residents. In Na Thong Village, Houn District²⁰, lack of care by villagers when burning a swidden field led to the fire spreading to a banana plantation. This triggered a violent incident between the villagers and the staff of the Chinese company. The village elder explained that, in normal circumstances, consultations about how to handle the matter, including the payment of damages, should have been carried

²⁰ A hearing was conducted with a village elder on February 22, 2014.

out through the village and district authorities, but misunderstandings easily arise when there are differences of language and practices. In some cases, Lao migrant workers and local residents are also of differing ethnicity and cannot understand each other's languages. There is the potential for problems arising from differences in customs, and it is therefore necessary to avoid or alleviate social friction through coordination among the companies, villages and districts.

Finally, there is the grave concern that banana plantations will threaten sustainable land use and food security. None the villagers who are leasing land to banana plantations and who were interviewed for this survey had a clear vision of future land use. Among the local residents, there were many who held to an optimistic view of the future, such as a S Village elder, who stated, "Since we did not anticipate that banana farming projects would be introduced ten years ago, there may be some new crop that we do not know about now introduced in ten years' time." Carrying out scientific investigations of soil degradation caused by repeated cropping of bananas and heavy use of chemical fertilizers followed by the preparation of a long-term land use plan with the participation of local residents is a vital task for the future.

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