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PROJECT NO. SJW-00B1

“AN ASSESSMENT OF THE IMPACTS OF RELOCATION
IN A THAI VILLAGE”

A MAJOR QUALIFYING PROJECT REPORT

SUBMITTED TO THE FACULTY OF THE

WORCESTER POLYTECHNIC INSTITUTE

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF BACHELOR OF SCIENCE

ON FEBRUARY 29, 2000

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PROJECT No. SJW-00B1

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IN A THAI VILLAGE”

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ABSTRACT

The Electricity Generating Authority of Thailand (EGAT) operates a high capacity coal-fired power plant in Mae Moh District, Thailand. In the past, EGAT relocated villagers for developmental purposes. This project evaluated the impacts of the different types of relocation projects, and determined which, if any, would be acceptable in the future. In order to obtain the information necessary for such an evaluation, surveys were administered to over 400 villagers and supplemented with nine focus group interviews.

EXECUTIVE SUMMARY

In Mae Moh District, Lampang Province, northern Thailand, the Electricity Generating Authority of Thailand (EGAT), operates a high capacity lignite coal-fired power plant. In the past ten years, the Mae Moh plant has been the source of ongoing environmental debate due to the large amount of sulfur dioxide that is produced from the burning of this coal. A large-scale epidemiological study was proposed by EGAT, the Pollution Control Department, Ministry of Science, Technology, and Environment, and Chulalongkorn University's College of Public Health to study the health effects of sulfur dioxide on the residents of Mae Moh.

Additionally, from 1980 to 1996, EGAT was involved in a series of 5 relocation projects for purposes of development. As a subsidiary to the epidemiological study, this IQP examined one of the relocation projects at length, in an attempt to assess its success, as well as the feasibility of relocation in the future. To determine whether this project was successful or not, as well as to determine the overall impacts on the affected villagers, several research categories were selected and appropriate data collected. These categories were: health, economic status, environment and infrastructure, political climate, society and culture, and social attitudes. In order to obtain a better understanding of these categories, and of other information pertinent to the project, a thorough review of the background literature was compiled.

Due to the vast differences between Thailand and America, a substantial portion of the literature review was dedicated to understanding Thai environmental policies, energy production, and conflict resolution. These were pertinent to this project because it was necessary to understand the public opinion of the power plant in Mae Moh, and the

political climate there. In addition to studying energy policies in Thailand, methods of utilizing coal as an energy source were reviewed, as well as ways of mitigating the pollution that results from their use. These processes were divided into clean coal technologies, which focus on eliminating pollution from coal-based power plants, and alternative energy sources. The resources examined, hydroelectric, solar, and nuclear power, are by their nature, more environmentally friendly. Because of the controversy over the purported health effects of the Mae Moh power plant, it was also necessary to investigate the health impacts of sulfur dioxide on both humans and agriculture. The last topics examined in the literature review looked at the specific details regarding the relocation projects in Mae Moh, guidelines set up by the World Bank for involuntary relocation, and an analogous case in the United States known as Love Canal.

This situation was examined in light of the five categories mentioned previously: health, environment, economics, social atmosphere, and political climate. Each category was further defined by a set of specific research questions. It was decided that the answers to these questions would serve as an accurate indicator of the success of each category. The research questions were refined, subdivided, and included directly in three questionnaires—one each for the villagers of Moh Seri, *Tambon Na Sak*, and Moh Luang / Na Kam. Additional questions were not appropriate for the survey and were instead reserved for the focus group interviews. Personal observations, as well as limited use of secondary and tertiary data sources, provided additional information that was used in triangulation with the primary data we collected.

The data collection processes included the administration of over 400 surveys, nine focus group sessions, secondary data collection, and observational study. While the

majority of our research went as planned, several limitations prevented the collection of all intended data, especially that which was to be derived from secondary and tertiary sources. These limitations included severe time constraints, travel limitations, and language barriers.

Analysis of the data required the incorporation of qualitative data from focus groups and observations with large amounts of quantitative data that was obtained through the questionnaires. Consistent with the process outlined in the introduction, each research question was carefully addressed in light of the data obtained. We were able to determine an answer for each question by carefully weighing all available facts and opinions in as objective a manner as possible. Each research question, as it was answered, contributed to an overall finding for its respective area of inquiry, thereby helping us to form an appropriate set of conclusions.

During the course of our study two different relocation options were examined. Villagers in Moh Seri were given a pre-determined amount of money and independently found the site to which they relocated. In Moh Luang and Na Kam, residents were compensated for the land that they lost and were moved to an area where certain facilities were provided for them by EGAT. Operating under the assumption that the condition of the relocated villagers would have been analogous to that in Na Sak if they never moved, the residents of Na Sak were used for comparative purposes. From all the results, we determined that neither relocation procedure could unequivocally be termed a "success," although the one for Na Kam and Moh Luang showed the greatest potential for future applications.

In order to apply the procedures that were used in moving the residents of Moh Luang / Na Kam to future relocation projects, several changes must be made. From the survey results, we found that approximately half of the people in Moh Luang and Na Kam did not think that the agreement was fair, and, possibly as a result, their responses indicated a low approval rating of EGAT. Similarly, the impact of relocation on political awareness and involvement of the residents should be taken into account. From our results, it is apparent that the people in Moh Luang and Na Kam did not feel appreciated by the government, and it is our recommendation that this issue be addressed in any future migration projects.

Although no reliable recommendations could be made about health, it is important that future projects consider any possible adverse effects on the total health (both physical and mental) of the villagers. A significant source of displeasure in Moh Luang and Na Kam was the effect of moving on their economy and occupational lifestyles, yet another parameter that needs to be rectified in future endeavors. In general, the people were pleased with the development of their infrastructure, although this had damaging effects on the social culture of the village, which must be remedied in any upcoming projects.

Lastly, our recommendations for future study include a revised, more in-depth evaluation of all the criteria we initially selected. In terms of health and healthcare, substantial conclusions cannot be made without clinical data that was collected by a trained healthcare professional. To determine the changes in economic structure, a comparison of salary and cost of living expenses before and after relocation should be made as well as a determination of the change, if any, in economic status. An important

topic to inspect under infrastructure would be to determine any change in the rate of infrastructure development. More quantitative data regarding political involvement and awareness would be helpful, such as the participation rate in elections and the attendance rate at political meetings. Physical laboratory data about the soil, air, and water quality would provide a more substantial assessment of the change in environment.

A more comprehensive section covering mental health and social well-being should also be incorporated. In addition, it would be prudent to ask the residents how they would prioritize their needs. For example, would people be willing to own and farm 100 rai of land if it meant being several kilometers away from their nearest neighbor? Or, does the benefit of having old neighbors and relatives close to them outweigh the drawback of having to buy bottled water? Would the villagers be happier living in an area where there was an adequate amount of farmland, or would they sacrifice that farmland to be closer to a modern hospital? These types of questions, ones that ask people to prioritize the aspects of their lifestyle, would provide better insight into how to develop a relocation agreement that is acceptable to both the relocating agency and the people to be moved.

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GLOSSARY

<i>Amphoe (Umper)</i>	District, like a U.S. County
<i>Aubotol</i>	English transliteration of a Thai acronym meaning village government. Similar to a village council. Includes <i>Pu-Yai Ban</i> , Kam Nan and other elected community representatives.
Baht	Thai currency. At time of publication, approximately 37baht = \$1 U.S.
CCT	Clean Coal Technology
<i>Changwat (Jangwat)</i>	Province
EGAT	Electricity Generating Authority of Thailand
FGD	Flue Gas Desulfurization
<i>Kam Nan (Gamnan)</i>	Governor of <i>Tambon</i> (Sub-District).
<i>Mu Ban</i>	Village, small community
<i>Ngan</i>	Measure of land area, equal to ¼ of a Rai.
<i>Passa Nua</i>	Northern Thai Dialect
PCD	Acronym: Pollution Control Department. Similar to the U.S. Environmental Protection Agency.
<i>Pu-yai Ban</i>	Head of a village. Term of office is 5 years. Literally translated as “village adult”.
<i>Rai</i>	Measure of land area, equal to 2/5 of an acre or 1,912 square yards. Also equal to 4 ngan.
<i>Tambon (Tamboon)</i>	Sub-District, like a Town

1.0 INTRODUCTION

Mae Moh district is located in Lampang Province in northern Thailand, and is the site of one of the world's largest deposits of lignite coal. The Mae Moh valley is also the site of a thermal plant that generates approximately 30% of Thailand's electricity (that is produced by the Electricity Generating Authority of Thailand (EGAT)) by burning lignite coal. The high content of sulfur in this coal, coupled with the lack of enforced environmental regulations, has led to an enormous amount of ambient air pollution produced by the power plant and mining operations. It is thought that there is a correlation between the high levels of sulfur dioxide and the respiratory illnesses that plague the valley's residents.

1.1 PROJECT GOAL

As a result of the high levels of ambient air pollution produced by the power plant, several organizations proposed a study of the effects of this pollution on the health of the residents of Mae Moh for the years 1994-1999. These organizations were the Ministry of Public Health, the Ministry of Science, Technology & Environment, the Electricity Generating Authority of Thailand (EGAT), and the College of Public Health at Chulalongkorn University. As outlined in the proposal for the study, there was a great need for further epidemiological research on the health effects of sulfur dioxide pollution and a great scientific advantage to conducting this research in Mae Moh.

The goal of our project was to make a significant contribution to the on-going epidemiological study. In order to accomplish this, we will focus on a specific sub-topic involving the relocation of families to a new village. Past relocations were carried out for development reasons, but as relocation becomes more of an issue it

will be necessary to study its impacts in the past so that appropriate plans could be made for any future relocations.

1.2 PROJECT OBJECTIVES

Since the opening of the power plant and mining operations, EGAT has needed to periodically resettle villagers in order to obtain the land necessary for the continuing development of its operations in Mae Moh. We looked at a community that was relocated several years previous as a result of this continuing development. Part of the community was resettled some distance from the power plant and mining operations, while the remaining villagers were resettled within several kilometers, near the current Mae Moh Hospital. This project analyzed the condition of the villagers in light of the question of whether they were better off having been relocated, so that we could determine whether or not relocation as it had been carried out in the past was a feasible option for the future.

1.3 PROJECT TASKS

In order to fully answer the question of the residents' well-being, a number of tasks had to be completed. These items are discussed at length below, as they were intended to be carried out. Obstacles and limitations to the completion of these tasks are discussed in Section 3.

1.3.1 TASK ONE: HEALTH EVALUATION

First, current health profiles of the residents needed to be compared to profiles from before the time of relocation as well as to profiles of residents who had not been relocated. This allowed us to quantitatively judge whether or not relocation was a viable option from a medical standpoint.

1.3.2 TASK TWO: EXAMINE CHANGES IN ENVIRONMENTAL CONDITIONS

Second, an attempt was made to determine and analyze the environmental conditions in the area where the residents were currently living, in the area where they had lived prior to the move, and the conditions in which the remaining residents of Mae Moh *Tambon* (Sub-District) resided at the time of this study. Every attempt was made to pay strict attention to distance of the village from the plant, agricultural conditions, and current environmental concerns.

1.3.3 TASK THREE: ANALYZE ECONOMIC IMPACTS OF RELOCATION

Third, the economic profiles of the residents were compared in the same way. The economic changes in the Mae Moh district itself were significant over the several years prior to this study. It was important to examine what economic changes there had been within the relocated communities.

1.3.4 TASK FOUR: EXAMINE THE CHANGE IN SOCIAL ATMOSPHERE

On a more subjective, but equally, if not more important, note, this project attempted to assess the residents' feelings about the relocation. For example, were they happier after the move than had been before? What, if any, were the effects on social and familial relations? What, if any, were the effects on the unique cultures of the Mae Moh *Tambon*, Na Sak *Tambon*, and Moh Seri?

1.3.5 TASK FIVE: EXPLORE ANY CHANGES IN POLITICAL CLIMATE

The project also explored changes in the political climate as a complement to the changes in social atmosphere. Politics were examined in light of residents' awareness of procedures, involvement, activity, and influence in governmental matters. Data was gathered from both primary and secondary sources that pertained to government financial support as well as the villagers' feelings about the government.

1.3.6 TASK SIX: DETERMINE THE SUCCESS AND EVALUATE THE IMPACTS OF RELOCATION

The final aspect of this project examined the success and feasibility of relocation as it related specifically to EGAT and the villagers residing in the Mae Moh district at that time. A number of different topics were examined in order to evaluate the impacts of relocation and to make an educated recommendation about its feasibility for the future. This list included, but was not restricted to, economic, geographic, cultural, and social implications, as well as the permanence of this option--people may be relocated to a new area and later have to be moved again because the resettlement was not conducted properly. By analyzing these topics, this IQP attempted to arrive at a delineation of the most important variables necessary to understand the impact and success of relocation in an objective and quantitative manner. This makes an evaluation of the present success and future feasibility of a similar venture possible. With the dissemination of this information it was hoped that EGAT and the government would take appropriate and well-researched actions on any future relocation projects for the residents of the Mae Moh district.

2.0 BACKGROUND

It is important to consider many factors when evaluating the condition of Mae Moh and its residents. The background research appropriate to this project can be broken down into several key areas: the specific history of Mae Moh; conflict resolution in Thailand; Thai views of the environment and Thai environmental legislation; energy consumption in Thailand; coal and clean coal technologies; alternative power sources; ambient air pollution; health and environmental impacts of air pollution; and relocation of different communities. Each of these subjects was relevant to the situation in Mae Moh for various reasons, as outlined in the subsequent sections.

2.1. MAE MOH, LAMPANG PROVINCE, THAILAND

Thailand is roughly the size of France or Spain and has over sixty million inhabitants. It is a constitutional monarchy with a National Assembly that is comprised of a House of Representatives and a Senate. A tropical nation largely dependent on its agricultural base, only about 20% of Thailand's citizens live in urban areas. Furthermore, more than two-thirds of the labor force is involved in agriculture ("Kingdom of Thailand").

Thailand is divided into five regions and seventy-three provinces. *Amphoe* Mae Moh (Mae Moh District) is located in Lampang Province in the north (see Appendix A) and is best known for its significant deposits of lignite coal. Indeed, of the roughly 1.13 billion tons of mineable lignite coal believed to be dispersed throughout Thailand, the single largest deposit, with over 810 tons, is found in Mae Moh.

Lignite coal, which has a high sulfur content, was estimated to generate 19.5% of the total energy produced in Thailand in 1996 (Power Development Plan). Because

lignite can be readily used as an energy source, a power plant began operation in Mae Moh in 1960. Two units of 6250 kW each remained in operation until 1977. Prior to the termination of these operations, however, EGAT had begun construction on Units 1-3 of the present plant in 1975, with all three in operation by 1981. In 1985, stacks 4-7 were completed about four kilometers away from the site of the original stacks with a capacity of 150,000 kW each, twice as much as the 75,000 kW for which the original stacks were constructed. As Thailand's economy grew so did its use of electricity, and so the construction of stacks 8-11 and 12-13 was begun and completed by 1995. With the addition of six stacks of 300,000 kW each the total capacity of the plant reached 2,625,000 kW or 2,625 MW, making it the largest thermal power plant in the country operated by EGAT ("Power Development at Mae Moh"). Several sources document the plant as producing approximately 30% of Thailand's energy in 1999 (Leightner 240), contradicting the government's published figure of 19.5% energy from lignite coal.

Several companies were placed under contract to mine the coal in order to supply the increased capacity of the plant. As Thailand's economy grew so did its demand for energy, and the plant was greatly expanded as a result. However, the demand for electricity has recently decreased due to the current economic crisis plaguing the country.

Readers' Digest *Places of the World* listed Mae Moh as a district with a population of approximately 28,000 people in Lampang Province. Thailand is organized in a similar fashion as the United States. The nation is divided first into provinces, *changwats*, roughly equivalent to U.S. states, and then the provinces are divided into districts, *amphoes* (similar to counties within the states). Within the district there are further subdivisions, specifically into *tambons* (towns) and villages

known as *mu bans* (villages or communities within the towns). Mae Moh district is located in Lampang Province, and within the district there is also a Mae Moh *tambon* that is further subdivided into *mu bans* (including one named Mae Moh).

Nearly \$200 million U.S. of the region's Gross Provincial Product (approximately \$1 billion total) can be attributed to Mae Moh District. Prior to the construction of the plant over ten years ago, however, the significantly smaller number of residents in Mae Moh were subsistence farmers. The majority of the district consisted of a small fertilizer plant and a highway until facilities (such as schools and hospitals) were built, partially to provide services and addresses the growing needs of the power plant and mining community. At the time of this project, the plant alone employed in excess of 8,000 people and has stimulated the growth of Mae Moh district.

When one attempts to assess the situation in Mae Moh, especially the villagers' attitudes towards EGAT and the government, it becomes clear that one must have an understanding of Thai culture, as well as the attitudes and behaviors of the people. In particular, it is vital to have a knowledge of the methods of conflict resolution so that issues of relocation in Mae Moh may be evaluated thoroughly and appropriately.

2.2 CONFLICT RESOLUTION IN THAILAND

There are a number of common preconceptions held by Westerners about the Thai people and their attitude towards confrontation that are important to note. The deviations from these expected behaviors, which have become more and more prevalent with western influence, are particularly evident with respect to the on-going controversy in Mae Moh.

Above all else, the attitude and demeanor of the Thais can be described by the term “cool heart.” In maintaining a cool heart, Thais seek to preserve social relations and to avoid overt expressions of anger, hostility, or displeasure (Klausner 70).

Although this characteristic may be found to a greater extent in the rural villages than in larger, impersonal urban areas (since it is more necessary in the villages for the continuation of regular life), it is a prevailing characteristic to at least a certain degree in nearly all Thai men and women.

This is not to say, however, that a Thai never feels these extreme emotions or expresses them. Subtle actions speak volumes in Thailand, and their meanings are seldom lost on those at whom they are directed. As Klausner explains, there are several “round-about” ways that displeasure may be expressed, such as a straight face or even a brief frown. Individuals may also avoid contact with the offending person or postpone things that need to be done for them. The Thai word for a type of indirect expression is *prachot*; it refers to an instance where the individual expresses his anger or displeasure by focusing it at another object in such a way that it is clear to the offender what is being done. For example, it is common for a mother to reprimand her children when she is, in fact, really angry with her husband (Klausner 73). Gossip and false accusations are also common types of *prachot* practiced in Thailand.

The demeanor of a cool heart owes much to Thailand’s strong Buddhist and animistic traditions. Buddha taught that virtue lies in avoidance of emotional extremes both in thought and in practice. While it is impossible to determine if the majority is able to avoid extremes in thought, there is great social pressure to avoid extremes in any behavior, and even more so for those behaviors that are deemed to be socially unacceptable. This norm is further enforced by the Thais’ strong belief in the control of spirits over numerous facets of their lives. It is believed that overt

expression will bring about the displeasure of the these spirits, and restitution on the part of the individual is demanded not by those who have been wronged but rather by the spirit who has been offended. In this way, people are able to further maintain friendly relations with one another because they are not the ones passing judgment or seeking compensation.

Related to the Thai reluctance to be demanding and imposing is the notion of *krengjai*. There is no English equivalent for *krengjai*, but it can roughly be translated and understood as a combination of deference and consideration, or of diffidence. It is manifested in the respect and deference shown to others, particularly those deemed to be superior because of age, rank, or social status. For this reason, Thais are often extremely reluctant to ask for anything from those whom they believe that they should be practicing *krengjai* towards (Klausner 115).

The cool heart and practice of *krengjai* have implications for the methods that Thais will use to resolve conflicts. Oftentimes, no request needs to be made in order for a wrong to be corrected. In nearly all cases, compromise is the overriding means of resolving the conflict, in particular so that neither side is embarrassed or loses face. Lawsuits are relatively uncommon, in part due to the Thai attitude and in part to certain characteristics of the judicial system in Thailand. Of those cases brought to court, however, many are resolved through a discussion mediated by the judge in his or her chambers. Violence is not very common, but it is not unheard of either. It may seem strange that Thais go from a frown to extremely violent behavior, but that is seen as the next step once the acceptable alternatives have been exhausted and are no longer satisfying.

Although these are the prevailing attitudes in Thailand, it is important to note that they are more and more in a state of flux as **the nation** becomes increasingly

westernized. It is this change in attitudes and practices that has profound repercussions for the actions and attitudes of the residents of Mae Moh with respect to requests for and actions taken concerning relocation.

2.2.1 CONFLICT RESOLUTION AS IT RELATES TO MAE MOH

The actions of the villagers in Mae Moh, when examined in light of the typical Thai attitudes stressing avoidance of conflict, and respect and deference, seem highly atypical. As Thai attitudes continue to change and become westernized, however, these uncharacteristic behaviors will become increasingly common and it is important to consider these as alternative and acceptable means of resolution that might be applicable to Thailand.

Recent developments in relation to the power plant in Mae Moh and other environmental issues seem to run contrary to conventional wisdom about conflict resolution in Thailand. Several editorials in the past two years have appeared in the Bangkok Post (“Bangkok Post Collection”) denouncing the violent actions taken by protesters. One man comments in an editorial, “As usual with Thai protests things were set to get ugly...Thai people are normally good natured and kind. The mob’s behavior, however, seemed totally out of character.” Numerous other articles make mention of the increasing use of violent force in response to problems in Thailand. For example, Anchalee and Vasana reported on a violent protest against the development of a power plant in Prachuab Khiri Khan, saying that, “The incident reflects the widening gap and growing distrust, between the government and the people. A gap which, quite often, ends in the use of force. As with so many cases, the catalyst for the hostility between the government and the people are development projects.”

It seems that protests are becoming an increasingly useful means of conflict resolution as well. A protest on May 19, 1996 by villagers affected by the pollution from the power plant in Mae Moh resulted in EGAT's agreement to relocation pending evidence that the plant was indeed the cause of pollution in the valley.

Many people are also recommending legal action as a means of resolving the conflicts in Mae Moh and in other similar cases. Veera Prateepchaikul, a reporter for the Bangkok Post, recommends that the residents protesting the construction of the Prachuab Khiri Khan plant "should also have legal experts who can advise them on how to take the government, EGAT or other state agencies to court." In July 1999, a group of villagers from Mae Moh filed a lawsuit demanding three million baht in compensation for damage to their animals and crops. The deputy managing director of the plant confirmed the residents' right to sue for compensation if their crops and animals had indeed been damaged. The suit was accepted for consideration by the court, and October 14, 1999 was set for the first hearing.

One of the variables that has shaped the situation in Mae Moh is the attitude towards the environment as it pertains to Thailand. It is not necessarily the same as it is in the U.S., and the situation is very different in terms of regulations, legalities, and enforcement as well.

2.3 ENVIRONMENT AND DEVELOPMENT IN THAILAND

A 1995 report by the Thailand Environment Institute (TEI) states: "The past thirty years of Thailand's development have been geared toward economic growth. As a consequence of this growth, natural resources have been depleted, and pollution problems have been intensified (Taylor)."

While laws and regulations do exist, there is little done to enforce many of them, a fact which is acknowledged even by those in control departments. According

to Taylor in his article “Trade-offs in Thailand,” Supat Wangwongwattana, the director of Air Quality and Noise Control stated that “There are laws and regulations about this but there is no serious enforcement.” For example, the sulfur dioxide limits that Mae Moh was reported to have exceeded are actually an industry-imposed standard and are not law (Somsak 2). Furthermore, many of the poor who are the most adversely affected might believe the benefits to outweigh the costs in this case. Lengthy studies have been conducted related to poverty distribution, political influence, and environmental hazards. Markandya states that although there is much discussion on this topic little has actually been shown empirically in terms of establishing linkages (Markandya 459).

2.4 ENERGY PRODUCTION AND REGULATION IN THAILAND

In his book *Energy and the Environment*, John Fowler describes the first two laws of thermodynamics as “You cannot get something for nothing,” and “You cannot ever get all you pay for (2).” Given the state of energy production around the world today, as well as its impact on society, this is quite an appropriate paraphrase.

Certainly in Thailand, there have been high costs associated with the growing demand for electricity. The Electricity Generating Authority of Thailand (EGAT) is responsible, either directly or indirectly, for all of Thailand’s electricity. Some of the power is bought from neighboring countries such as Laos and Malaysia, contracted for with private providers, or actually produced in EGAT’s own plants.

In 1996, the National Energy Policy Office (NEPO) was established as a department under the Prime Minister in order to help manage the affairs related to energy more effectively. Previously, several government agencies throughout the nation had varying degrees of control over energy in Thailand. According to the

National Energy Policy Council Act of B.E. (Buddhist Era) 2535 (1992), the duties of NEPO include the following:

- Study and analyze energy policies, management, and development plans of the country to be presented to the National Energy Policy Council.
- Monitor, evaluate, and act as focal point for coordinating and supporting the implementation under the energy policies, management and development plan.
- Gather information, observe changes in the energy situation, analyze trends and evaluate any possible effects in order to make recommendations on energy policies, management and development plans, and also disseminate energy statistics.
- Perform any other tasks as may be assigned by the Prime Minister or the National Energy Policy Council.

From this it can be seen that there is no mention of legislation or regulation of energy use and production. Two of the responsibilities of the Energy Conservation and Renewable Energy Division are to: (1) Recommend policies, management and development plans as well as measures for energy conservation and environmental protection and the mitigation of impacts on the environment resulting from the development and utilization of energy, and (2) Recommend policies, management and development plans as well as measures for new and renewable energy.

2.5 COAL AS AN ENERGY SOURCE

Leightner states that 30% of Thailand's electric power is generated in the Mae Moh lignite coal facility (240). This figure is not very far off from that of the rest of the world where coal supplies about 37% of total world electricity. Coal, combined with all of the other fossil fuels, accounts for nearly 90% of total world electricity (Global Overview). Thus, it is likely that fossil fuels and, in particular, coal will

retain their prominence as energy sources for quite some time. Coal has long been called “the dirtiest” of the fossil fuels. Like all fossil fuels, its combustion is responsible for the release of toxic gases like CO as well as greenhouse gases or GHGs, sulfur dioxide (SO₂), and oxides of nitrogen (NO_x). These gases, some of which are significant contributors to the greenhouse effect, have been shown to cause health and respiratory problems. In the case of Mae Moh and the large lignite mine and power plant, these health issues are already becoming apparent. This is due to the volume of coal being burnt, as well as its quality. Lignite, the softest and “youngest” type of coal, is close to the surface, making it easy to mine. However, it is also lower in carbon content and its combustion produces larger quantities of pollutants-- especially sulfur dioxide and oxides of nitrogen. Because of the low quality, more of it must be consumed in order to produce the same unit of energy.

Although there are many new technologies and techniques that improve efficiency, the basics behind combustion of coal for electric power generation are really quite simple. First, the coal is mined from the ground deposit. The raw coal, known as “run-of-the-mine” is then processed to remove unwanted rock and dirt. At this point, it goes on to the power plant. It is estimated that 60% of coal is consumed within 50 km of the mine (Power for Progress).

Modern power generation plants use “pulverized” coal. That is, the coal is ground to a fine powder and blown into the furnace to be burnt. The extreme temperatures of 1400°C or more heat water in the boiler to produce high-pressure steam that is used to turn a series of generator turbines. Once the steam is exhausted (around 100°C), it is condensed using a cold water bath and returned to the boiler for re-heating.

Because coal combustion can cause so many environmental and medical problems, it is important that efforts be made to alleviate these effects. Two methods of lowering the pollution produced by coal combustion include the implementation of various clean coal technologies and the adoption of alternative power sources.

2.6 CLEAN COAL TECHNOLOGIES

The difficulty in using coal as a power source is that it produces a large quantity of different pollutants, which impact both human and environmental health. While options are available to reduce the severe effects of coal-combustion, they are often considered too expensive to implement on a large-scale; pollution control requires advanced technology as well as a large financial investment. It is precisely because of economic constraints that industrially developing nations do not impose or follow pollution-mitigating practices. In this section, different technological alternatives are presented, and evaluated on the basis of their cost-effectiveness.

The term “clean coal” first manifested itself in the United States after the Clean Air Act was passed in 1963, and first amended in 1970. It is a phrase used to describe any technology that mitigates the detrimental effects coal-burning has on the environment and human health. This legislation was followed by the Clean Coal Technology Program of 1984 in an attempt to promote the demonstration of clean coal technologies (Rose 668). These laws were updated in 1990, when the Clean Air Act Amendment (CAAA) was passed, which created specific deadlines for the reduction of pollutants. Specifically, Title IV of this act calls for “a two-step program to reduce emissions nationwide by 10 million tons from 1980 levels by the year 2000” (Bretz 24). This requirement was broken down into two Phases. The Phase I deadline was Jan. 1, 1995, and required specific stations to reduce their sulfur dioxide emissions by an average of 2.5 lb/million Btu (Bretz 24). By the Phase II deadline—

the year 2000—all power plants operating over 25 MW must reduce sulfur dioxide emissions to 1.2 lb/million Btu.

The Department of Energy (DOE) has taken innovative steps to enforce this legislation. One measure to encourage companies to observe the Clean Air Act and the CAAA has been to implement it in phases, as mentioned above. This allows power plants to fulfill the requirements of these laws in increments, instead of all at once, which may be less costly. An alternative to complying with the emissions standards is to purchase “allowances.” These allowances permit a power plant to buy the right to operate outside of the emissions limits. While these quotas offer the advantage of letting essential power plants operate without complying with the CAAA, they completely nullify any environmental benefit.

There are many technological options for a power plant to use to comply with the clean air legislation, aside from the option of switching to lower-sulfur coal. For Phase I compliance, by far the most popular choice was Flue Gas Desulfurization (FGD), also called “scrubbers” (Bretz 23). This system utilizes the reaction of sulfur dioxide with limestone to reduce this gas to either elemental sulfur, hydrogen sulfide (H_2S), or an environmentally safe compound. FGD is a “retrofitting technology;” it adds a scrubber system onto an existing facility to reduce emissions (Blasing 518). In FGD, after coal is burned, the gas is sent through a chamber containing limestone, where calcium carbonate in the limestone can reduce sulfur dioxide, forming calcium sulfide (CaS) and molecular oxygen. Usually, however, calcium oxide (CaO) and a thick sludge are formed. While this sludge does not cause air pollution, it can leak into groundwater supplies and compromise the quality of drinking water. The advantages of FGD are as follows:

- it does not require a new facility to be built;

- it achieves as much as 90% reduction in sulfur dioxide emissions (Bretz 23);
- it is projected to be 10% cheaper than switching to “non-local” low-sulfur coal (Bretz 24);
- it accommodates a wide variety of coals;
- it does not impact other aspects of the power plant.

For these reasons, FGD has seen widespread use in America.

A newer version of FGD is Advanced Flue Gas Desulfurization (AFGD), pioneered by the Pure Air Bailly Station in Indiana. While it still uses the basic principle of FGD to react flue gas with limestone to eliminate sulfur dioxide, this process then refines the resulting sludge into gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), which can be made into plaster of paris or plasterboard (Brown 173). AFGD is also capable of higher efficiency of sulfur dioxide removal, reaching over 95% (Brown, 173), although using low-sulfur (2.25% or less) coal produced the best results.

Unfortunately, Brown did not specifically relate in his article how cost-effective this technology was for the Northern Indiana Public Service Company, only stating that it was “very cost-effective.”

Gasification and Integrated Gasification Combination Cycle (IGCC) are two other prevalent methods of reducing air pollution. Gasification involves the conversion of coal to a cleaner-burning gaseous fuel before its combustion (White 25). IGCC also involves converting coal to a gas, but may directly use coal as a fuel, and involves different levels of “integration”—the degree to which gasification is utilized.

The fuel produced by gasification—called syngas—is a mix of carbon monoxide and hydrogen. In order to obtain it from sulfur- and other impurity-containing coal, the coal is often reacted first with limestone or other sorbents such as zinc ferrite to remove sulfur (Bretz 51). An advantage of this method is that elemental sulfur can be obtained (Bretz), and then used as a fertilizer; this would definitely be beneficial in an agriculture-based economy such as Thailand's. A drawback of IGCC is that it is not as economically feasible as other forms of power production, although this may be remedied in the future through standardization of parts, use of advanced turbines, and lowered overhead expenditures (White 33). However, White (32) reports that gasification is economical even when low value fuels are used, such as petcoke or low cost coal. It is reasonable to infer from this that lignite coal would be an appropriate candidate. In contrast, a major disadvantage to gasification is that it can produce toxic organic compounds, organo-metallics, toxic metals, and amines (Krupa 159). Given this problem, gasification may not be a reasonable solution for Mae Moh.

Around the world, power plants employing IGCC technology are becoming more and more common. In the Netherlands, the Buggenum project has shown consistent 43% efficiency for its IGCC plant (White 27), making it the cleanest coal-based plant in Europe. However, the exact amount of sulfur dioxide emissions was not mentioned in the available literature. In Germany, the SVZ Schwarze Pumpe plant has been experimenting with gasification of coal in combination with sludge from industrial processes (such as that produced when coal is burned), and waste-plastics; the obvious benefit is elimination of sludge and solid wastes. This plant has processed 50,000 tons (nearly 45,500,000 kg) of fluid waste per year in this way (White 31).

Another field of clean coal technology focuses on minimizing air pollution created during the combustion process. Reburning is a process that reduces emissions from oxides of nitrogen by using multiple burning zones (Bretz 42). This retrofit technology is capable of reducing these emissions by over 50%, although it does not affect sulfur dioxide emissions. A retrofit system that controls both oxides of nitrogen and sulfur dioxide levels is the limestone injection multistage burner (LIMB) process. This has been shown to reduce emissions of sulfur dioxide by 70%, and oxides of nitrogen by 40-50% (Bretz 42).

Fluidized-Bed Combustion (FBC) is another CCT worth review. This combustion technology operates similarly to FGD, in that it uses limestone to remove sulfur dioxide. In Fluidized-Bed Combustion, streaming air is used to suspend sulfur absorbing particles, such as limestone or dolomite. Sulfur is absorbed while the coal burns very rapidly. This allows for high volumetric heat release, and higher heat exchange, which means that lower temperatures are required, and a smaller amount of oxides of nitrogen is formed (Krupa 159). Heat converts limestone to lime, which reacts with sulfur dioxide, water, and molecular oxygen, resulting in the formation of calcium sulfate and calcium sulfite (CaSO_4 and CaSO_3 , respectively) (Krupa, 160). When coal is added, continuous mixing improves combustion of the coal--reducing carbon monoxide and hydrocarbon emissions--and a lower temperature reduces the production of oxides of nitrogen. Two different types of FBC are Pressurized (PFBC) and Atmospheric (AFBC). Atmospheric Bubbling FBC is the oldest fluidized combustion technology. Among the advantages of Bubbling FBC are the following:

- it can be applied to a variety of fuels, including lignite coal
- it can be retrofitted and applied to new stations

- plants using bubbling FBC report good combustion efficiency and comply with U.S. emissions regulations (“Cleaner Coal Technologies Option”)

Pressurized Fluidized-Bed Combustion (PFBC) and Circulating Fluidized-Bed (CFB) are two more FBC technologies that show excellent reduction of air pollutants—in the case of CFB, sulfur capture was better than 90% (Bretz 39).

Pressurized Circulating Fluidized-Bed (PCFB) has been demonstrated at McIntosh Unit 4 by the City of Lakeland Department of Electric and Water Utilities (“Advanced PCFB Technology”), although neither CFB nor PCFB were tested on a scale comparable to that of the Mae Moh facility. PCFB is divided into two different categories: non-topping, where the turbine is driven by hot flue gas; and topping, where flue gas is fired with syngas to raise the temperature (“Advanced PCFB Technology”).

Non-topping PCFB has been shown to be most effective for stations producing 100-200 MW of energy, and therefore may not be a good model for the Mae Moh plant, which operates above 2600 MW. However, if this system could be modified to function for the Mae Moh plant, it would have distinct advantages:

- low cost of less than \$1 million per megawatt
- lowered emissions

Topping PCFB was developed for stations producing between 250 and 500 MW of energy; it may be more feasible for the Mae Moh power plant. According to *Advanced PCFB Technology*... it offers the benefits of increased cycle efficiencies near 50%, in addition to all the benefits of non-topping.

All of these options could potentially alleviate the suffering of the residents of Mae Moh, provided that EGAT has enough money to invest in these projects. Since

financial constraints are a limiting factor, it is important to evaluate different methods of financing Clean Coal Technologies. Some options for financing the installation of CCTs, as well as organizations that offer aid for such projects are as follows. The Asian Development Bank was founded in 1966, and its functions include:

- providing loans and equity investments
- offering technical assistance for the preparation and execution of development projects
- encouraging investment of public and private capital in development projects

A similar organization is the Global Environment Facility (GEF), which also provides funds for developing countries for projects that aim at protecting and preserving the environment ("Cleaner Coal Technologies: Financing"). However, the GEF typically reserves its assistance for projects with global environmental effects. It is possible that the problem in Mae Moh is too localized to qualify for assistance by this organization. The *Cleaner Coal Technologies: Financing* booklet also provides examples of different CCTs and how they were successfully financed and implemented worldwide.

2.7 ALTERNATIVE POWER SOURCES

In addition to "cleaning" the coal that is currently being used, there are a number of alternative power sources that Thailand is currently utilizing and may further be able to utilize in order to help meet its energy demands in the upcoming years. As reported on the OSTC web site ("OSTC: Fuel Options"), EGAT is currently researching several alternative energy sources. These technologies include are discussed below.

Hydroelectric Power: While most fossil fuel-based electric power is generated via heated steam-driven turbines, hydroelectric power harnesses the Earth's natural moving water resources instead. Geographical features like waterfalls, rivers and even the tides produce a tremendous amount of kinetic energy that can be used to turn huge generator turbines. Because this type of power generation uses features of the Earth that will exist in the foreseeable future, hydroelectric power is very “environmentally friendly” and one of the most long-lasting sources of power on the planet. Barring unexpected changes in the geographic landscape or extensive deposits of sediment in water dams, hydroelectric power plants can produce power virtually forever.

One of the few environmental concerns in hydroelectric power generation involves the damming of water resources. Damming physically restructures the waterway and could potentially impact its ecology. Great care must be taken to assure that wildlife such as fish, beavers and vegetation are not mutilated, trapped or starved by the construction and operation of a dam or power plant. Even the slightest change in flow can negatively impact life in the body of water.

The first hydroelectric power plant was built in 1895 in northern New York State. The plant, which is still powered by Niagara Falls, provided much of the electricity for the city of Buffalo and surrounding area. By 1970, hydroelectric power provided 53,000 megawatts (MW) of electricity for the United States, approximately 32% of the potential 161,000 MW. Southeast Asia and South America have been estimated to have the largest potential for hydroelectric power at 63% of the world total (“The Power and the Glory”).

Interestingly, only 26.5% of the total capacity for hydroelectric power has been exploited in Thailand. EGAT claims that the remaining amount is

“environmentally difficult to exploit.” In later documentation, it is stated that there has been a lack of public support for hydroelectric power projects in Thailand (“OSTC: Fuel Options”).

It is also feasible for hydroelectric power to be generated by harnessing the power of the ocean’s tides as they move in and out. However, the locations where plants could be erected are limited by the geography of the earth, as only areas with extremely high tides are suitable. Even today, one of the only tidal generation plants in the world running at near full capacity is located on English Channel. When it opened, the plant could provide 240 MW of power (Morgan 16). Both Canada and the United States have had plans since 1910 to construct a similar site at the Bay of Fundy where the tides are the highest in the world. However, the project has been shelved indefinitely, primarily due to ecological concerns. Only a small prototype plant exists on the causeway over the Annapolis River. The plant produces about 20 megawatts of electricity for the Nova Scotia power grid (“BOFEP”).

Natural Gas: This fuel has often been dubbed by the industry and environmentalists as “the cleanest of the fossil fuels.” Although it is acquired from the Earth’s crust and burnt, as coal, oil, gas are, natural gas produces fewer GHGs, and pollutants. Deposits of natural gas have recently been found in the Gulf of Thailand, but only a small portion of that gas is currently being piped to the four gas-fired power plants within the country.

Very little gas is currently being used for electricity production, but it is clear that EGAT is moving in that direction. Sometime during the next year, Thailand plans to have several units of a new power plant operational in Ratchaburi Province. Once in full operation, the plant will house three blocks of combined-cycle gas and steam turbines, which produce 2,175MW, and four thermal units, producing

2,940MW. The 1999-2000 milestone for the plant includes the completion of the Thermal units 1&2, as well as the three Combined Cycle Blocks (“EGAT: Overall Structure”). Ideally, these facilities will begin to burn domestic gas, drawn from the Gulf reserves. The Bangkok Times reports that in the future (perhaps as late as the year 2011), EGAT hopes to see as much as 60% of all power generated from natural gas, although there appears to be conflicting documentation on this matter. This could be due to the significant changes constantly being made in the 17-year *Thai Power Development Plan*. The original plan proposed that by the year 2011, 10.4% of the nation’s power would be generated by conventional gas fired plants (“OSTC: The Power Development Plan”).

Liquefied Natural Gas: According to the *LNG Express* web site, Liquefied Natural Gas (LNG) is literally what its name implies: a liquefied version of the regular fuel, cooled under pressure to approximately -162°C. By cooling the gas, heavier substances such as carbon dioxide and sulfur are removed, leaving a much purer methane product.

Because it is nearly pure methane (sometimes nearly 99% pure), LNG is considered to be relatively safe for the environment. However, it is more expensive than coal and its trade, though growing significantly, is still rather limited. Usually, natural gas is liquefied and stored at remote gas reserves and transported to ports in Europe, Asia and North America. Southern Asia currently only has 5 facilities for liquefaction and no active storage or generation facilities.

Orimulsion: An emulsified bitumen found in eastern Venezuela, orimulsion is similar to heavy oil. Like lignite, it has a high sulfur content and is a comparable heating source. Unfortunately, it can only be imported from one location on the

Orinoco Belt of Venezuela and specific feasibility studies would need to be done for each potential site (due to the high sulfur and ash content).

Nuclear Power: Aside from naturally occurring resources like hydro and solar, nuclear power generation is one of the cheapest and arguably one of the cleanest power sources available today. It is virtually emission-free, producing no “controlled air pollutants” (“NEI Facts & Quotes”).

The first experimental reactor, which produced power for four light bulbs, was built in 1951. Shortly after, in 1955, reactors began commercially producing power for homes. In the short time span of nearly half a century, this power source has become an important staple in the world power generation industry. Likewise, it has generated a lot of controversies.

Public perceptions of nuclear technology and well-known nuclear disasters like the ones at Chernobyl and Three Mile Island have plagued the industry since its inception. Misconceptions and worries about safety and the environment have driven the public to take stands against power plants being built in their neighborhoods. An example is the plant at Seabrook, New Hampshire. Residents in the Seabrook area went so far as to have themselves arrested as a result of their protest efforts. Although the plant was built anyway, future plans for expansion of the Seabrook plant have been on hold for many years.

Although environmental and safety concerns over nuclear power are not completely unwarranted, these concerns are perhaps the most meticulously documented and accounted for. According to the Nuclear Energy Institute, the low volume of waste by-products from each generation plant are carefully contained, catalogued, and stored under national and international regulations. Thus, the nuclear power industry is perhaps the only such industry to date to have successfully

accounted for its waste products and impact on the environment. As far as personal and environmental safety is concerned, the NEI points out that the largest source of man-made radiation in the world actually comes from medical treatment devices (e.g. x-ray machines, radiation therapies, etc.) and similar devices in the security field (such as airport security). The NEI goes further to say that “Even if you lived right next door to a nuclear power plant, you would still receive less radiation each year than you would receive in just one round-trip flight from New York to Los Angeles” (“Nuclear Energy Institute”).

According to the NEI, nuclear power provides around 16% of the world’s energy. Major generating countries include European and Scandinavian countries such as France Switzerland, Belgium and Sweden. Japan and Korea also produce a significant amount of nuclear generated electricity. Perhaps the most startling statistics are from the former Soviet countries, most of which rely upon nuclear power generation for nearly half of their respective energy consumption. Lithuania, for instance, uses 77% nuclear power.

In Thailand, EGAT has been working for several years to gain public support for and acceptance of nuclear energy as a potential energy source. Likewise, it has been recognized that elaborate studies will be necessary to determine the economic, engineering, security and safety issues involved in production of nuclear electric power. Consequently, EGAT has no current plans to implement this technology in the immediate future (“OSTC: Energy Resources”).

Solar: Solar electricity generation is the process of taking thermal energy from the sun and converting it, by means of photovoltaic cells or other methods, into electric power. The power obtained from 10% of the sun’s radiation, if collected over one square kilometer, would produce 14.5 MW. At this same rate of 10% collection,

an area of 25,000 km² (9,000 square miles) would be required to generate 350,000 MW, enough to support the entire United States (Morgan 16). To put things into perspective, 9,000 square miles is roughly the area of 10% of the state of Arizona.

It does not appear that EGAT has in the past or is currently putting much effort into solar energy research. However, this method of producing electricity could prove to be a significant subject for Thailand to explore, given the country's relatively high exposure to sunlight.

2.7.1 POWER PRODUCTION CONSERVATION TECHNOLOGIES

Although they will not directly reduce the volume of pollutants being released into the atmosphere, several conservation technologies are available that could make EGAT's power production much more efficient and consequently safer. By producing and utilizing more energy from the same amount of fuel, there would exist a much smaller need to add additional power generation units and consequently, fewer pollutants would be released into the atmosphere.

One important conservation process is known as cogeneration. During fossil fuel-based electric power production, the fuel is burnt in order to produce heat. The heat is in turn used to warm pipes filled with water and produce steam, which under pressure, turns the large turbines of a power generator. Under ordinary circumstances, the heated water is condensed and recycled into the system to be reheated again. Cogeneration units are designed to harness the wasted thermal energy by making use of the steam, which is still nearly 100°C, for things such as heating systems and/or hot water supplies.

Technologies like cogeneration, although increasing thermal efficiency, still do little to reduce the amount of gases released into the atmosphere per unit of

combusted fossil fuel. Thus, It is unlikely that cogeneration will be an appropriate alternative at this time for the power plant in Mae Moh.

In order to understand which options will actually be appropriate, it is important to know a little about the EGAT operations in Mae Moh. These topics will be discussed in the next section.

2.8 ELECTRICITY, EGAT, AND THE MAE MOH LIGNITE POWER PLANT

The Electricity Generating Authority of Thailand (EGAT) was formed as a result of the 1969 merger, by the government, of the three state electricity generation utilities: the Yahnee Electricity Authority (YEA, 1957), the Lignite Authority (LA, 1960) and the North-East Electricity Authority (NEEA, 1962). With the formation of EGAT, the responsibility of all electric power production and transmission in the country (rather than region by region) was in the hands of a single state enterprise. According to the OSTC web site, “EGAT’s activities encompass the development, construction, operation of dams, reservoirs, power plants of various types, transmission system and substations; the production of lignite and its by-products; formulating policies concerning the production and sales of electricity, lignite, and lignite by-products (“OSCT:Intro”).”

In order to increase competition in the electrical business and to encourage private participation, EGAT has implemented three different plans to involve other companies. According to amendments to the EGAT Act of 1968, EGAT may establish subsidiary companies or contract with “Small Power Producers” (SPPs) or “Independent Power Producers” (IPPs). Legislation has been enacted to formalize and structure these transactions as well. A stipulation is that the fuels being purchased should be “environmentally clean, acceptable to the public, have stable price, assured supplies and support the government policy on fuel diversification for

the country ("OSCA: PPP).” Ironically, coal is listed as a fuel that meets the above-stated criteria, including environmental cleanliness, despite numerous examples that would indicate otherwise.

Since 1985, the power system operation of EGAT has been divided into five areas, and it is the Northern Region Operation that provides for the electrical needs of the eighteen provinces in the North and Upper Central areas that are under its control. The Mae Moh lignite plant was one of seven thermal plants operated by EGAT in 1994, generating over 2025 of the 6101.5 MW (approximately one third) produced by the thermal plants and of the 12990.148 MW (approximately one sixth) generated in total. By 2001, it is estimated that lignite combustion will generate only 5.6% of the nation’s energy ("OSTC: PDP"). Today, the Mae Moh plant is Thailand’s largest lignite plant and generates nearly 30% of the nation’s electricity produced by EGAT operated plants.

2.9 AMBIENT AIR POLLUTION

A 1994 study by the World Bank, one of EGAT’s primary lenders, concluded that a 20% improvement of overall air quality would result in an estimated \$3 billion worth of health benefits. Although it is obvious that even a 100% improvement for Mae Moh would not save \$3 billion dollars, it is clear that environmental management has a long-term economic benefit. Economics aside, an improvement in air quality would greatly improve the health of residents.

There exists a substantial amount of literature on the medical affects of sulfur dioxide and oxides of nitrogen on human health. In addition to the medical references, there are a number of legal cases that attest to this fact. “In 1972, the Yokkaichi Branch of the Tsu District Court concluded that various respiratory illnesses suffered by thousands of citizens living in heavily polluted areas of Japan

were ‘indisputable facts’ and that sulfur dioxide was ‘beyond a doubt’ the cause (Moore).”

2.10 EFFECTS OF AIR POLLUTION IN MAE MOH

In Mae Moh, effects of air pollution were critical because the villagers existed in an agricultural society; therefore pollutants could affect not only human health, but that of the crops and livestock as well. Therefore, it was important to review the effect of various pollutants on not only human health, but on agriculture and livestock as well.

Exposure to air pollution and the consequential effects on human health, agriculture, wildlife, and the environment can be divided into two different time frames. Acute exposure means short-term exposure to high concentrations of pollutants while chronic exposure is long-term exposure to low levels, punctuated with brief intervals of high concentrations of pollutants. In the case of Mae Moh’s residents, chronic exposure seems to be prevalent. These terms differ, however from acute and chronic illnesses. Acute respiratory illnesses are respiratory conditions that are not long lasting, and chronic respiratory illnesses are persistent disorders of the respiratory system. There is, however, no pre-determined distinction between acute and chronic disorders; rather, the difference is resolved by the duration of the illness in question.

The significant illness-causing pollutants in Mae Moh were sulfur dioxide (SO_2), oxides of nitrogen (NO_x), and particulate matter less than ten micrometers in diameter (PM_{10})—specifically sulfate (SO_4^{2-}), sulfuric acid (H_2SO_4), and nitric acid (HNO_3). Sulfur dioxide is released into the air when flue gas is not treated after combustion of coal containing moderate quantities of sulfur and sulfur-compound

contents. The lignite coal consumed in Mae Moh is especially high in sulfur ($\geq 5\%$), and as such produces a large amount of sulfur dioxide.

The effects of sulfur dioxide on the human respiratory system are typically limited to the nasopharyngeal passages, and to the bronchi and trachea (Krupa 84). In these tissues, sulfur dioxide dissolves in the saliva and mucus because of its high solubility in water. This alters the function of these secretions by increasing the viscosity of the nasal mucus, thereby decreasing the rate of airflow through the nasal passages (Krupa 84). This causes acute respiratory distress in many people and increases the risk of chronic respiratory disease (Boubel 108). Asthmatics are especially sensitive, as they respond with bronchial constriction, which occludes breathing. Another effect of sulfur dioxide is eye irritation (Boubel 107).

For plants, sulfur compounds are essential nutrients, but only in limited amounts. In leafy plants, sulfur dioxide enters the plant through the stomata, openings on the underside of the leaf, as well as via diffusion through the cuticle, the surface of the leaf (Krupa 102). This process can cause necrosis of the leaf (Krupa 103).

The ill effects of sulfur dioxide are not only present in the air, but can also be destructive in the form of acid rain. When the cold season begins in the north, conditions are favorable for the condensation of sulfur dioxide to form acid rain, compounded by the fact that Mae Moh is located in a valley. In animal studies, sulfuric and nitric acids at concentrations slightly higher than ambient levels have been correlated to a decrease in the ability of the upper respiratory tract to remove foreign particles (Krupa 87). Unfortunately, Krupa does not define quantitatively (in $\mu\text{g}/\text{m}^3$) what “ambient levels” are. Additionally, these pollutants have been linked to bronchitis in the elderly and in children.

Although the main concern was focused on how sulfur dioxide affected the health of the Mae Moh residents, oxides of nitrogen could have serious effects as well. In coal combustion, oxides of nitrogen are formed when coal is burned at extremely high temperatures, usually above 800 or 900°C. The two main oxides of nitrogen formed in coal combustion are nitrogen dioxide (NO₂) and nitric oxide (NO), which is rapidly converted to nitrogen dioxide in the atmosphere (Krupa 83). The physiological effects of nitrogen dioxide are much worse than those of sulfur dioxide. Nitrogen dioxide at a concentration greater than 500 parts per billion (ppb) can destroy cilia lining the respiratory tract, disrupt alveoli in the lungs, and cause obstruction of bronchioles (Krupa 83). In addition, this gas can aggravate other respiratory conditions such as infections or asthma. The breathing of nitrogen oxides for a long period of time has also been associated with an increased susceptibility to bacterial infections, lung cancers, and, in children, respiratory illnesses (Taylor 1289). Furthermore, because most of the abatement measures are aimed at reducing the levels of sulfur dioxide, it is likely that the toxicity of nitrogen oxides will become the main threat to the residents' health in the future.

The extent to which a gas can enter the respiratory system is a function of that gas's solubility in water (Boubel 195). Gases such as sulfur dioxide that are very soluble in water usually do not penetrate past the nasal passages or pharynx. In contrast, gases like nitrogen dioxide that are less soluble in water are capable of penetrating all the way to the alveoli and pulmonary system.

Normally, the human respiratory system has methods of removing undesirable gases. Some gases are irritants that cause responses such as sneezing, or coughing, which exude harmful particles--these responses are usually effective for sulfur dioxide. Gases like nitrogen dioxide that reach into the pulmonary system are not as

easily removed, and can enter the bloodstream (Boubel 106). It is possible that biochemical processes throughout the body remove this gas, although this is not presently determined in the available literature.

Aside from the toxic oxides produced in the combustion of the lignite, soot and dust from the plant as well as from the mining operations contribute to particulate pollution. Smaller particles (those measuring under 3.3 micrometers) are thought to be the most dangerous because they are able to penetrate further into the lungs (Taylor). However, it was beyond the scope of this project to examine the effects of particulate matter in great detail.

2.11 PROPOSED MEASURES TO ALLEVIATE POLLUTION AND ITS EFFECTS

Because all but a small fraction of the sulfur dioxide in the Mae Moh valley came from the burning of lignite, it could be determined that this type of pollution was a direct result of the power plant operation. EGAT had a number of possible solutions to help lower the levels of pollution and to address the concerns of residents of the community at the time of this project. Plans to attach desulfurization plants to more than two-thirds of its 1996 generating capacity should reduce emissions by 95% (Leightner 241). However, this will have no effect on the emissions of the other third of the stacks, nor will it have an effect on the emissions of nitrogen oxides.

In addition to sulfur dioxide produced in the combustion of lignite, the dust from the mining operation was a serious threat, which EGAT contended to be the true source of the problem. The *Bangkok Post* reported that the assistant manager of the plant asserted that the pollution came from the mine dug by companies under contract to EGAT, although this would presumably result in EGAT being responsible either way. To minimize the pollution from this source, EGAT planned to install sprinklers

around the site while the Chiang Mai Construction Company (one of the companies under contract to mine the lignite) allocated 100 million baht to correct the situation.

Despite these efforts, complaints abounded that not enough was being done. Jirapong Sonthitham, chairman of the Mae Moh Environmental Protection Organization, accused EGAT of “not making sincere efforts to solve the problem of excessive sulfur dioxide emissions” and said that the planned installation of sulfur scrubbers would not result in a significant enough reduction.

Many of the residents were requesting that EGAT relocate them because of the negative health effects thought to be caused by the power plant. The scope of this IQP, however, was limited to the evaluation of the overall success of relocation of residents from Mae Moh in economic, political, health, social, and cultural terms. By conducting an overview of these topics it will be possible for EGAT and others to use the results to identify areas that necessitated further research, and to use the information obtained to guide judgments and practices related to relocation of villagers.

2.12 RELOCATION OF COMMUNITIES

The relocation projects at Mae Moh were not the first of their kind. In fact, cases of relocation for development or to escape environmental deterioration can be found throughout history and many are happening at the present moment. In order to proceed with an effective study of the problems in Mae Moh, it was important to examine some of these situations from the past, as well as the situation at hand. The following section presents one such case that is well known and shared many characteristics with the situation in Mae Moh.

2.12.1 THE CASE OF LOVE CANAL

According to the its 20th anniversary web site ("Love Canal Collection"), Love Canal is a 6-7 mile stretch of land in northern New York State between the Upper and Lower Niagara rivers. It was at this location that William T. Love had a plan to dig a canal and create a waterfall to produce inexpensive electric power. However, due to economic constraints, Love was forced to abandon his project with only a 60×3000-foot section of the canal having been dug. In 1920, it was sold and became a chemical waste dumping ground for the city, the U.S. Army, and primarily the Hooker Chemical Corporation. In 1953, the area was covered over and sold to the City of Niagara school department for one dollar under a contract that exempted Hooker from future liability.

By 1955, the school department had completed the construction of a 400-student school on the property and numerous homes were built in the surrounding area. It should be noted that most of the families weren't aware that over 20,000 tons of toxic wastes existed beneath their homes. Thus, by 1978, there were approximately 800 homes and 240 apartments on the area that was once Hooker's chemical dumping grounds. Throughout the time period from the 1950s to the 1970's, residents often complained of odors or substances seeping into their yards. The city's response was to cover the substances with new topsoil ("Love Canal 20th Anniversary").

In 1976, a private corporation completed a study of the area and found toxic chemicals in the soil and water disposal systems in the south end of the community. However, the city did nothing until 1978 when the New York state Department of Health performed a study that linked reproductive problems with the chemicals in the air and soil ("20th Anniversary of Love Canal").

Throughout the next two years, residents were in an uproar over the situation. In August of 1978, the 99th Street School was ordered closed by the Department of Health and the State agreed to purchase 239 homes in one area of the canal. Following this, the area was arbitrarily fenced-off and declared a hazard.

The move and all that it involved prompted the formation of the Love Canal Homeowners Association, which fought vehemently for the rights of the residents. Those residents outside of the original 239-family area became angry because the State knew, as well as they, that health problems existed beyond the fenced-in area. They petitioned the State, picketed and marched throughout the winter, demanding to be relocated as well. Their efforts were assisted by several volunteer scientists and environmentalists who completed their own study in 1979. This study showed an increase in birth defects, miscarriages and disease among the residents. In the case of pregnancy-related complications, the number had risen from 8.5% to nearly 25.2% from the time of the first study to the second. Armed with this and other detailed information from the study, the residents continued to fight and in 1980, President Carter ordered total evacuation of the remaining 900 families in the community (“20th Anniversary of Love Canal”).

Since 1980, lawsuits have been filed against Occidental Chemical Company, the parent company that owned Hooker. In addition, attempts were made to re-settle the community in the late 1980s and early 1990s. A chemical waste treatment facility was erected at the Love Canal site and as of 1995, Occidental Chemical and the U.S. Army have agreed to pay approximately \$227 million in reimbursement to the state and federal governments for cleanup costs. According to the EPA Website, the money is being channeled directly into federal Superfund and FEMA (Federal Emergency Management Agency) budgets. Occidental Chemical has taken control of

and will continue to operate the on-site treatment facility. Rehabilitation and cleanup activities are still being performed in the area. Approximately 250 homes have been re-sold in recent years and new development on "clean" properties has been made possible ("Love Canal 20th Anniversary").

Years later, the case of Love Canal stands as one of the few and perhaps most memorable relocation projects to have been almost entirely voluntary and prompted by the residents themselves. Most relocation projects, however, are involuntary and prompted by increased demand for development-land. As a result of the relatively high frequency with which involuntary relocation occurs, many funding organization have established guidelines for relocation in projects that they sponsor.

2.1.2 INVOLUNTARY RELOCATION GUIDELINES

Most of the guidelines that exist for involuntary relocation projects are actually minimum standards written by a creditor or other lending agency that must be met by parties seeking funding for a project that requires resettlement. Guidelines for two such agencies, the Inter-American Development Bank (IADB) and the World Bank (the Bank), are discussed below.

The Inter-American Development Bank document on involuntary resettlement states a number of criteria that should be met and followed ("Involuntary Resettlement"). To begin, every possible attempt should be made to find an option that does not require resettlement. Should this not prove possible, there are a number of points that must be met in the preparation of a resettlement plan. At the very minimum, the following principles should guide all resettlement programs:

- Avoid or minimize population displacement
- Ensure community participation
- Regard resettlement as an opportunity of sustainable development

- Define criteria for compensation
- Compensate the loss of customary (informal) rights
- Provide economic opportunities for the displaced population
- Provide an acceptable level of housing and services
- Address security issues
- Obtain accurate baseline information
- Include resettlement costs in overall project costs
- Establish independent monitoring and arbitration procedures

Whenever relocation is required, a resettlement plan must be formulated that proves that the people being moved will receive fair and adequate compensation. The IDAB defines fair and adequate compensation as such that the population in question will: have a basic standard of living at or above the standard from which they were moved; recover any losses suffered; sustain as little disruption as possible to social ties, social interactions, and economic opportunities; have access to development opportunities. While the resettlement plan is being developed and considered, the communities in question must be involved and participate in every step and decision-making process.

In addition to the points listed above, the IDAB also makes note of several special cases that must be taken into consideration, those for which impoverished risk analysis is appropriate ("Involuntary Relocation"). If the baseline data indicates that the population to be moved is a marginal or low-income group then special care must be taken to ensure that they are not at risk of impoverishment due to the move. An analysis should be carried out as soon as possible so that preventive measures can be designed against the loss of: housing and land, employment, access to means of

production, and access to education. Furthermore, food insecurity and the disarticulation of social networks should be avoided as well. The IDAB states that cash compensation is only an option in such cases if it can be ensured that its investment will restore the standard of living.

Another high-risk group identified in the document is indigenous peoples. For the purpose of the resettlement guidelines, they are broadly defined as people whose identity is based on the land that they occupy. As such, they often lack property rights to the land upon which they rely for their subsistence, and have a disadvantage when pressing for compensation and rehabilitation. It is therefore recommended by the IDAB (in fact, the IDAB will only support projects that ascertain these criteria) that the resettlement directly benefit those being moved, that their rights are recognized and compensated, that the compensation includes a land-based resettlement, and that the people to be moved give their informed consent to both the move and to the compensation.

A resettlement plan should include all of the information necessary to allow the relocating agency to formulate a proper compensatory package. In order to ensure that this is the case, there are a number of areas that must be first studied. Baseline information should be obtained on socio-economic and cultural characteristics of a representative cross-section of the population in question in a timely manner. An investigation of the environment and the effects that growth and development of infrastructure will have on it must also be made.

The options presented for compensation and/or rehabilitation must be a fair offer to the people being relocated. The IADB requires that the replacement value must be met for all assets lost, whether they are tangible (i.e. housing) or intangible (i.e. social networks). The disruption that will result from the move, including the

loss of crops or employment and moving costs, among others, are to be compensated for appropriately. Furthermore, the package offered must ensure that basic standards of shelter and access to facilities and services are met, regardless of their standard prior to the move.

As part of its environmental assessment for projects, the World Bank, EGAT's largest creditor, requires that a social analysis be included ("Social Analysis and Resettlement"). A statement from their *Environmental Sourcebook* shows the effects that development projects may have on affected populations and the importance of establishing and meeting specific guidelines for relocation projects. "Development projects are intended to modify social and natural environments in order to create or enhance the economic, health, educational, and other benefits that are valued by society. This goal, however, can be denied through unanticipated or unintended negative social and environmental impacts that reduce desired benefits or, if severe enough, threaten the sustainability of the project."

Similar to those of the Inter-American Development Bank, The World Bank guidelines for resettlement indicate five aspects that are vital to ensure a successful move for all concerned:

- Restoration of pre-displacement income levels
- Organizational capacity for resettlement and follow-up
- Physical progress of relocation work
- Consultation
- Project specific issues relating to budget, timetables, monitoring, and reporting

Regardless of whether or not EGAT's past relocation projects in Amphoe Mae Moh were financed with money from the World Bank, the criteria stated in this

section are important for anyone examining the impacts of relocation to keep in mind. Should EGAT apply for funding from the World Bank for a project that would require resettlement in the future, they would very likely need to meet their requirements in order to obtain the money. Because we are looking at the success of relocation and its feasibility in the future, these guidelines provide an appropriate context for the analysis of the specific projects in Mae Moh.

2.12.3 RELOCATION OF MAE MOH COMMUNITIES

Several years ago, a number of community members from Mae Moh were resettled by EGAT as a result of the continued development and increased capacity of the Mae Moh thermal power plant. The complete details of the plans for these relocation projects as provided by EGAT in Thai, as well as a rough English translation, can be found in Appendix B. This IQP focused on only three of the relocated villages: *Ban Moh Luang*, *Ban Na Kam*, and *Ban Moh Seri*. We chose to also examine two other non-relocated communities located in *Tambon Na Sak* (Na Sak Sub-District) so that a comparison could be made between the relocated and non-relocated residents. The communities that had not been relocated were Mae Luang and Ban Na Sak (Na Sak village). A brief description of each of the relocated communities and the circumstances surrounding their migration follows, and a detailed summary with maps can be found in Appendix C

The residents of the original Moh Luang were asked to move in order to provide the land needed for a reservoir and dumping area for the power plant. Under the agreement, which took nearly three years to refine, there were two options. Villagers who accepted the first option would receive a lump sum of money subject to several criteria: (1) ownership of their land, (2) government documentation of land usage, and (3) willingness to dismantle their own house and remove it. The amount of money

that they received was in no way dependent on the amount of land that they owned. Under option two, residents would move to an area south of the power plant where EGAT would rebuild the Mae Moh Hospital (which was also displaced by the move) and construct district municipal facilities, such as schools. Residents who accepted option two would not own their land, but instead would continue, as they had before, to use government-owned land under an agreement known as *sotorkor*. This agreement allows the family to make use of the land and pass it on from generation to generation, but not to sell it. Once the agreement was finalized, approximately 166 households chose the first option (and moved to Moh Seri) while the remainder (nearly 1000 households) chose the latter.

Ban Moh Seri, officially documented in provincial records as "*Ban Patana*" (Development Village), was formed by the 166 families who chose the first option. Although there seemed to be some controversy over the logistics of the village's formation, it is generally accepted that the villagers pooled approximately 50,000 baht per family in order to purchase an orange orchard in *Amphoe* Muang (east of *Amphoe* Mae Moh). The orchard land was sub-divided and each family re-constructed its home on the property, in many cases with the materials removed from their old homes. Of all EGAT-related relocation projects, Moh Seri was the only instance where the community no longer receives assistance (financial or otherwise) from the power plant. It is outside of the district and is relatively far from the area affected by the pollution. From this information one may conclude that this was the reason the villagers used the name *Seri* to describe themselves, which means "free" in Thai.

Ban Moh Luang was originally situated in central *Amphoe Mae Moh* (*Mae Moh* District), just north of the power plant stacks 8 and 9. Villagers residing in Moh Luang moved under option two of the agreement with EGAT. The infrastructure and

municipal facilities were provided by EGAT, but the residents do not own their land. Upon moving, the residents chose to retain the name of their original village.

Ban Na Kam had been previously located where stacks 4-7 of the power plant were constructed. Unlike the agreement with Moh Luang, the agreement with Na Kam residents gave only the choice of moving to an area close to the new Moh Luang. Residents of Na Kam do not own their land. In past years, there were arguments over which of the two villages (Na Kam or Moh Luang) was the "real" village, as they shared a common market, school and municipal facilities. Recently, the decision was made to recognize the villages as separate and to elect two different *pu-yai bans* (village heads).

Although these three relocation projects were undertaken because of EGAT's need for the village lands, relocation had emerged in another light. The *Bangkok Post* reported in 1997 that "about 500 families in *Ban Huay Fai*, *Tambon Ban Dong* in Mae Moh district have demanded that EGAT relocate them from the project site as soon as possible." These families were not alone. Villagers had requested relocation from the vicinity of the plant in an attempt to avoid the excessive pollution. Despite this pressure, no definitive decisions had been made at the time of the study. By following the articles, editorials, and reports published in the *Bangkok Post* over the previous 15 months it was possible to get an idea of the confusion and vacillation that mark the situation in Mae Moh.

In January 1999, senior environmental officials were quoted as saying that the installation of sulfur scrubbers on stacks 4 through 7 would reduce sulfur dioxide emissions by 90%, from 150 tons to 15 tons per hour. The Director of Air Quality and Noise Management, Supat Wangwongwattana, admitted at the East Asian Workshop on Acid Deposition that Mae Moh contributed the largest amount to the

nation's sulfur emissions, but also went on later to say that the remaining three stacks would not be fitted with the sulfur scrubbers because they "are too old and are not worth the cost of installation."

Exactly one month later, in February, authorities from Lampang demanded that 50 to 100 million baht be set aside in a fund to assist the residents of Mae Moh while they awaited the cabinet's decision on relocation. Of twelve villages in the five *tambons* surrounding the power plant, three were being considered for relocation: *Ban Huay Fai*, *Ban Hang Hung*, and *Ban Huay Ped*. Numerous officials made statements in favor of relocation, including the Deputy Education Minister, Pairoj Lohsunthorn, and the Lampang Governor, Chalernpol Prathipavanich. Furthermore, Lampang Defense Officer Sitthisak Pornprasertsuk estimated that it would cost EGAT approximately one billion baht (written as 1,000 million in Thai because there is no word for 'billion,' but for the sake of convenience will be written in billions) to relocate the 5000 families in the three villages in comparison to the twelve billion baht it would cost to install six desulfurization devices on the plant. These were approximately equal to \$25 million and \$300 million, respectively, at the time of writing.

Pinit Chanthasurin, Chair of the House Committee on Energy, was quoted as saying that "EGAT should urgently relocate the affected villagers to safer and fertile areas and provide assistance to them in developing the new area." Previously, Deputy Education Minister Pairoj cautioned that it was essential to ensure that villagers would be taken care of after relocation, pointing out that problems are usually left to provincial officials after the compensation is paid. On February 22, however, an abrupt announcement by Savit Bhodwihok of the Prime Minister's office ruled out relocation of the villagers. The move of such a large number of families was equated

with a failure in national development, and so it was recommended that a rehabilitation plan and special fund be set up to aid the affected villagers. Mr. Savit insisted that relocation was not a solution for Mae Moh because “past experiences had shown that the quality of life of relocated villagers deteriorated rather than improved.” To what past experiences the minister was referring, or in what way the quality of life had deteriorated, were not specified

Despite the announcement from the Prime Minister’s office, the push for relocation continued. Less than a week later the district chief of Mae Moh, Payon Suwanson, was reported as saying that the cabinet would have the final say as to whether or not the villagers would be moved to another location. About six weeks later, Governor Chalernpol said that relocation was no longer an option for the residents. He had previously been a supporter of relocation, and his change in stance prompted numerous attacks on his sincerity and motives.

April passed relatively quietly, but on May 6 the chairman of the Mae Moh Environmental Protection Organization announced that the group would be making a complaint to EGAT’s largest creditor, the World Bank. Chairman Jirapong said that EGAT was not making sincere efforts and argued that the sulfur scrubbers would not be an effective solution. The flue-gas desulfurization devices were scheduled to be installed on stacks 4 through 7 in January, but Director Supat admitted that it had not been done yet. He did mention, however, that the emissions restrictions were being enforced and that the amounts of air pollution had dropped considerably. Three days later, the tripartite committee that had evaluated the petition for relocation approved the plan, making this the third time that it had made such recommendations and not seen them implemented. Governor Chalernpol changed his stance yet again, assuring residents that the relocation would proceed despite the fact that no time frame had

been established. Minister Savit remained opposed to the decision, and on July 16, 1999 it was announced that a group of villagers were filing a lawsuit against EGAT for damage sustained to their animals and crops during a period of particularly high emissions.

On August 25, 1999 the National Environmental Board set emissions standards for sulfur dioxide, oxides of nitrogen, and particulate matter from EGAT-run power plants in an effort to force plants to seek cleaner technologies. The Pollution Control Department believes that these standards will allow it to enforce these laws. The standards passed are specific to each power plant, but Mae Moh was not included in the list because it is a “special case” requiring “special attention” as a result of its location and meteorology. An acceptable level of emissions has been determined for the plant, but it is not official and likely to be replaced in several months.

It is evident that the situation in Mae Moh is highly volatile and subject to change. In the course of the previous year, EGAT had failed to carry through on its promises to install sulfur scrubbers. At the same time, residents petitioning for relocation saw officials change policy several times, eventually to a stance that would keep them in place. Although emissions standards had been enacted for EGAT, the Mae Moh plant was not included and continued to be a source of a large amount of ambient air pollution for the area. From this background, it is easy to see the frustration that many felt with the situation and to realize that it was unlikely to be resolved in a conventional way anytime soon.

3.0 METHODOLOGY

In order to obtain the information necessary for a successful completion of this project, a thorough and organized methodology had to be followed. Before implementing this methodology, however, it was vital that we had an understanding of the restrictions and limitations, as well as the benefits, of the different options for data collection. The methodologies and their limitations are outlined in the sections below.

3.1 DATA COLLECTION METHODS

In preparation for the work in Thailand, this group examined several data collection methods that were thought to be appropriate for the situation. Below is a brief description of these methods as applied to the project itself, as well as a discussion of limitations and alternatives.

3.1.1 SURVEYS

A substantial portion of information on the status and conditions of the relocated villagers came from survey research conducted in Mae Moh. Surveying is an important and widely used research tool that can lend important insight into a wide variety of problems if conducted properly. Surveys also have the added advantage of allowing data collection to proceed relatively quickly with as few human resources as possible.

In order to conduct a survey properly, the researcher must take numerous variables into consideration. One of the first things often considered is the sample type and size. Although random sampling is difficult to conduct, it ensures that every person in the population has the same probability of being selected, thereby making the sample truly representative of the population under study. Any survey that attempts to extrapolate information obtained from a small subset of the population and

to assume that it is applicable to the entire population is subject to sampling error (Dillman). Despite this sampling error, a 1200 person sample will enable the researcher to be 95% confident in describing a population of 100,000,000 with an error margin of less than 3% (Dillman).

It would be ideal, albeit impractical, to survey every member of the population under study. If it is not possible to survey every person in the population, however, it is important that an appropriate sample be chosen that accurately represents the population being studied. For example, if a researcher were trying to assess opinions on relocation, it would be remiss to survey only EGAT plant authorities or officials, because the results might be biased towards the view of EGAT. It is also very likely that families who strongly wish to be relocated would have a different opinion than individuals who are indifferent.

Once an appropriate sample group has been obtained, the researcher must be careful not to introduce any bias into the survey. Bias can be introduced unintentionally in several ways. Primarily, the order in which the questions are asked can affect the responses. When one structures a survey, he or she should place the most interesting questions in the beginning of the survey to draw the respondent in. These should be followed by the most difficult questions, and then by the most sensitive questions (Jamison, personal communication). The presence of response options in opinion questions can also introduce bias to the survey. Questions followed by a finite number of specific choices may cause the responses to be slanted, depending on what the response options are. Schuman and Scott illustrated this effect in a survey on national problems in the United States. When asked what America's biggest problem was, 32% cited public education when it was given as a response option. When the question was left open with no response options, only 1% of those

surveyed named public education (Schuman). The presence of these response options can lead people to think in a certain way or sway them towards a particular direction, and result in a different response than if the question was left open. Since this project's surveys utilized a finite set of responses in some cases, as opposed to open-ended questions throughout, it was essential that the choices did not influence the responses.

Other factors that must be considered are form, wording, and tone, all of which can predispose the respondent to answer in a certain way. Wording can also frame the type of response depending on the connotation. For example, using the term "mentally ill," as opposed to "insane," likely evokes a different response. Tone can have a similar effect. Phrases such as "not allow" are likely to cause a different reaction than "forbid." Additionally, responses may be affected by the order of questions. Questions asked in a particular order may lead to a specific answer in subsequent questions, as was found in a research survey by Tourangeau et al.

In order to obtain unbiased results, survey researchers need to pay close attention to the aforementioned items. Wording, tone, and format can predispose people to answer in a certain way, and may lead respondents in a particular direction. This must be avoided so that the study is able to generate valid, impartial, interpretable results that will be of use to the researcher.

Our surveys were carefully designed to be as comprehensive, clear, concise, and unbiased as possible. In order to help reduce the difficulties with translation, each survey was pilot tested and revisions were made before beginning data collection. Copies of the surveys in both English and Thai can be found in appendices D - F.

3.1.2 SAMPLING METHOD FOR SURVEYS

Ideally, we would have chosen our survey respondents from a random sampling in order to achieve a group of sufficient size that would accurately represent the entire population. A number of factors, however, limited our ability to do so, and the survey sample was chosen by different criteria.

For Moh Seri, the targeted sample was every household. The village was small enough for this to be feasible, and no previous data existed that could be used to otherwise reduce the size of the sample. The remaining four villages, on the other hand, were included in the epidemiological study conducted by Chulalongkorn University and so our survey population was taken from their sample. By selecting the same households, we were able to eliminate several questions from our survey, thereby reducing the time it took to administer them. We were able to obtain the data for the eliminated questions from previous records because several of the questions had been copied exactly.

The sample populations for Na Sak, Mae Luang, Moh Luang, and Na Kam were the total samples of the Chula study for those villages that had been chosen at the beginning of that project. All of the children in the *tambon* schools were followed from school to obtain their addresses, and their homes were added to the sample.

3.1.2 INDIVIDUAL INTERVIEWS

Working under the assumption that the resources necessary for surveying the general population of Mae Moh Seri would be available but a dedicated translator would not, we chose to rely heavily on focus groups and survey data, only conducting interviews with the individual respondents if they could not be accommodated in a focus group. In addition, a series of informal interviews with government and EGAT officials was necessary. For linguistic reasons, these were also conducted with the

direct assistance of our liaison or translator. For interviews, it was often necessary to formulate an appropriate series of questions ahead of time and review them with the translator in order to obtain the information desired from these individuals. The information that we wished to acquire from individuals was often determined by their relationship to the power plant and EGAT, and so those interviews differed substantially in format and information obtained. In any case, it was necessary to prepare questions ahead of time for the interviews.

Regardless of the party or parties being interviewed, the semi-standardized format was almost always utilized. The use of a combination of set questions and probing inquiries pertinent to the situation provided several advantages:

- 1) The interviewer was familiar enough with the discussion topic ahead of time so that the conversation could move as smoothly and rapidly as possible.
- 2) If unexpected topics were introduced by the respondent, the interviewer was able to move away from the pre-determined questions in order to pursue the applicable diversion.
- 3) If a tangent was introduced into the conversation that was irrelevant, the pre-determined questions helped to redirect the discussion to the main topic.

The use of set questions ensured that a minimum amount of required information was obtained in the same format from all respondents. The semi-standardized style gave us the flexibility of an improvisational, non-standardized interview in conjunction with some of the defined structure of a standardized one (Berg). This style allowed us to ask scheduled questions along with unscheduled questions in order to probe deeper into the subject at hand.

The administration of the surveys, however, was similar enough in form to a standardized interview to warrant a brief discussion here as well. The surveys were designed and printed as standard questionnaires, but they were not simply given to the respondents. Because many of the villagers were illiterate, it was not feasible to give them a written document, and so the surveys had to be administered orally.

Berg explains that in the case of standardized interviews the interviewers “are required to ask subjects to respond to each question...so that responses to the questions, ideally, will be comparable (Berg 60).” Such interviews make the assumption that the questions are comprehensive and unambiguous in meaning, but the truth in these assumptions cannot be determined without feedback.

The field managers for the project team went into the selected villages each night with approximately 20 data collectors to orally administer the surveys. In order to make the questions as clear and comprehensive as possible, the surveys were pilot tested and revised before data collection began. However, because this mix of a survey and standardized interview allowed for no discussion or exploration, and because there was information required that could not be obtained from the larger population, focus groups were conducted as well.

3.1.3 FOCUS GROUPS

In some cases, surveying villagers would not have provided an adequate amount of information that could be used in the evaluation our established criteria. Furthermore, some of that data collected could have been invalid, vague, or impossible to interpret. In order to compensate for these obstacles, it was necessary to use focus groups to clarify and/or extract the missing information from a smaller, representative segment of the population. For the present study, village leaders and different age-specific segments of the population were interviewed in focus groups. It

proved beneficial to schedule several one- to two-hour group discussions so that an adequate amount of time was provided for discussion.

Focus groups provided an adequate compromise between interviews and surveys. The goal of the focus group sessions was to collect as much information from the participants in a shorter time frame than standard interviews with the individuals would require. Like surveys, they required few human resources, but instead made efficient use of those available, such as the translators. The focus groups were designed to guide discussions towards specific topics or issues in order to promote interaction between the panel members. This type of interaction provided substantial qualitative data for study.

In a focus group, it was possible to ask clarifying questions, push topics further, and even view interactions caused by people with opposing views on a given topic. In this way, focus groups were used to bring out and examine everyday social tensions that existed in underlying situations. Questions asked by the moderator promoted and encouraged discussion of the terms of the agreement, the impacts of the migration, and feelings about the relocation. The use of focus groups also helped to resolve some of the language barrier issues that will be discussed at length in section 3.2.2. The questions prepared to guide the focus groups can be found in Appendix G, and a summary of the information gathered from these groups can be found in Appendix H.

3.1.4 OBSERVATION AND THE "RAPID RURAL" APPROACH

To some extent, our observational data collection followed a method known as Rapid Rural Appraisal. Although not quite as rapid as its name implies, this method is defined by Tony Dunn of Charles Stuart University as, "A qualitative survey methodology using a multi-discipline team to formulate problems for agricultural

research and development (Dunn 3).” In short, its methods allow a group of researchers with different backgrounds to observe and qualitatively measure problems that involve people. As Dunn explains, observations are “filtered” through the perceptions of the diverse observation team and provide a range of perspectives to be analyzed and interpreted (Dunn 4). In many cases, such as ours, Rapid Rural data serves as an excellent supplement to quantitative data. Because of the diverse educational backgrounds of the members of this IQP group, each group member had a separate insight on what was seen, thereby producing a set of qualitative data on which to base the conclusions. These observations can be found in Appendix I.

3.1.5 SECONDARY AND TERTIARY DATA SOURCES

While a large amount of information that was used to judge the feasibility of relocation came from primary sources such as surveys, interviews, and observations, a substantial amount also came from secondary and tertiary sources. We were unable to collect some of the data needed through primary sources, and so other materials were used in their place. Moreover, both time and resources were severely limited in this project, and so it was of extreme importance to make use of information that had already been collected by other agencies and individuals.

Provincial Health Data

Without the assistance of medical professionals, we were unable to gather any clinical data regarding the health of the villagers. While some health information was obtained through the survey responses, this data was subjective and prone to bias. For this reason, it was important to obtain objective medical information that could be used to determine if the general health of the population had been maintained or improved. This data was primarily acquired from the provincial health reports for the areas in question.

Provincial Government Documents

Many departments in the provincial government office in Lampang had knowledge of and references on some of the investment plans and growth projections for the district of Mae Moh. Documents were gathered from their facilities that allowed us to determine whether or not the economic health of the villages and their residents had been maintained or improved.

Mae Moh Epidemiological Study "Raw" Data

A substantial amount of the information that this project utilized in its evaluation came from the raw data collected by field workers as part of a study at Chulalongkorn University under the direction of Dr. Nuntavarn. This information included, but was not limited to the health, social, and economic status of villages that was compared to that of the resettled communities. It was safe to assume that the data from non-relocated communities would be similar for the resettled residents had they not been moved, and in this way we were able to judge the positive or negative changes that had occurred over the past several years.

Monitoring Station Data

There are 18 monitoring stations located in Mae Moh district that report the levels of sulfur dioxide pollution. The Pollution Control Department (PCD) maintains five of the stations, while the remaining thirteen are maintained by EGAT. All are subject to a monthly review by the PCD, and readings are collected daily. The majority of these stations are also connected to the district hospital via telephone lines, and so the information may be easily obtained by health officials and community members. Tables of pollution levels may be found in Appendix J.

Electricity Generating Authority of Thailand (EGAT) Documents

One of the most important sources of information regarding the villages was EGAT. The terms of the relocation agreements were made available for examination, as well as some brief demographic information for the villages prior to relocation.

3.2 RESEARCH QUESTIONS AND DATA COLLECTION QUESTIONS

To begin research, our group established several broad categories that needed to be addressed in order to evaluate the effects of relocation. By evaluating its impact, we were able to arrive at a decision as to whether or not relocation was successful and if it could be a feasible option for the future. Once these criteria were decided upon, specific research questions were formulated for each category that allowed us to evaluate each category and successfully complete the tasks outlined in the introduction. After deciding how each research question could be answered, a series of specific data collection queries were designed to extract and assemble the information necessary for each research question. For example, in order for relocation to have been judged successful in the category of health, it was decided that the general health and the access to healthcare of the relocated population had to have been maintained or improved. The majority of the data collection questions, as shown in these examples, were directly incorporated into the surveys and focus groups, while others were answered with information obtained from tertiary data.

Once all of the data collection queries were answered, it was possible to answer each research question and, consequently, to complete each categorical task as outlined in the introduction. The task headings, followed by their respective research queries can be found in Appendix K. The data collection questions, separated into survey and focus group formats, can be found in Appendices D - G. Once the tasks were completed it was possible to examine relocation from several

different perspectives, to evaluate its success and feasibility, and to make recommendations.

3.3 LIMITING FACTORS IN CHOOSING AND EXECUTING THE METHODOLOGIES

Thailand is a country quite unlike the United States. Because of the differences, it is extremely difficult for Westerners (*farang*) to fully understand the culture and language of the Thai people, as well as how these characteristics might impact the methods that are chosen to collect data. The research that we conducted as background, particularly that on conflict resolution, Thai culture, and Mae Moh alerted us to several obstacles that we encountered during the course of our study. In addition, many unexpected obstacles also arose that oftentimes prevented us from continuing until they were resolved. The following section discusses all of these obstacles at length, as well as how we chose to deal with each of them.

Limitations with Regards to Travel

Since our study group was based primarily in Bangkok for a period of seven weeks, direct interaction with the people of the Mae Moh community ultimately was limited by availability of funding and time with which to travel north. These limitations on travel had an enormous impact on the types of data collection methods that could be used, as well as our overall reliance on each of those methods specifically.

It was decided that three trips would be made to Mae Moh. The first was taken from January 12-14, 2000 with our liaison, Dr. Nuntavarn. During this time, our group was able to meet a number of the field workers, EGAT staff, and other parties concerned with our project. In addition, we were able to become acclimated with the area and make a preliminary assessment of the intense political climate. Our

second trip was taken from January 24 - February 12, 2000 for the purposes of primary and secondary data collection. During this time period, relationships were established with district, village and provincial officials, and administration of focus groups and questionnaires commenced. A complete schedule of this trip can be found in Appendix L. A final presentation was scheduled to be made to EGAT by all team members on February 25, 2000, but had to be postponed due to an opening ceremony at the power plant. It was rescheduled for March 3, 2000.

Time Limitations with Regards to Data Collection

While in Mae Moh on the second trip, several obstacles prevented us from continuing with our original schedule for data collection. The first was the limited availability of Dr. Nuntavarn's research assistant, who acted as facilitator for our focus groups. The researcher was only able to travel to Mae Moh during the second week, thus imposing on the focus group sessions a condensed schedule. In order to accommodate this schedule, it was necessary to omit focus groups with village monks.

A second obstacle surrounded the scheduling of survey administration. Under the original plan, surveys for Na Sak were scheduled to be administered simultaneously with the surveys for the Chulalongkorn University study. However, due to resource allocation and time restrictions on the Chula project, our surveying could not begin until the third week, when we would have exclusive use of a 20-person data collection team.

Data Entry Time Limitations

The original schedule for the second trip to Mae Moh assumed that surveys would become ready for data entry as they were completed over the course of three weeks. Unfortunately, however, the abbreviated schedule during the last week of the

trip made coding and translation a cumbersome task. For this reason, data entry did not commence until Friday, February 11, 2000.

In order to complete the analysis of the data in a timely manner, it was decided that the data would not be entered twice and verified, as is standard practice in epidemiological studies. Instead, visual spot-checking of approximately 20% of the data set was performed. All of the surveys had an error rate of less than 0.5%, a figure that allowed us to analyze the data with few worries about entry errors. While this may be acceptable for the purposes of an IQP, the data should be re-entered and verified according to standard practice if it is to ever be used in conjunction with further research.

Time Limitations to Results and Analysis

In addition to time constraints on the data collection process, the analysis and conclusion phases needed to be scheduled appropriately. Since its inception, the scope of our project had not only changed, but also expanded and grown immensely. Oftentimes, it was necessary for our advisor to delay deadlines and make exceptions so that we could present him with our best work. We, as the project team, often found ourselves working extended hours in order to meet deadlines and complete tasks.

Limitations With Regards to Health Data

From the beginning, we were aware of the possibility that no recent assessment of the health of the people of Mae Moh had been performed, although this seemed unlikely due to the recent controversy in Mae Moh. In order to assure that we had access to appropriate health data, we chose to include questions regarding physical health in interview and survey questions. By utilizing the same questions that were asked in the Chulalongkorn University study, it was believed possible to conserve time by asking those questions only of Moh Seri residents and later linking

Na Sak and Mae Moh data with raw data from the Chulalongkorn databases. In order to make use of more clinical data, we planned to supplement these questions with information obtained through the provincial health reports.

We were not able to obtain the required information from provincial health reports. Because the data was not computerized, it would have been necessary to manually collate and sort information by cross-referencing of patient identification cards. This was not an option that we had the resources to entertain.

A second obstacle arose as a result of unexpected schedule changes in both our own project and the Chulalongkorn University study. When our survey could not be administered simultaneously with the one from Chula in Na Sak, we no longer had direct access to raw health and economic data while in the field. That data would, instead, need to be entered and merged via computer in Bangkok. When we arrived back in the city, data entry was not yet complete, and so (as an alternative) our data was merged with data from a previous study three years ago. This data was not heavily relied upon in the analysis due to its age and the economic crash of the Thai baht that occurred during the year it was collected.

Limitations with Regards to Translation

As a group, our mastery of the Thai language is inadequate for meaningful exchanges and our knowledge of Thai written script is almost nonexistent. Although our host organization allowed us the use of several translators, there were many concerns that were introduced by the necessity for translation. It was important to be constantly attentive to these deficiencies and concerns throughout the development of the project.

Many nuances and idioms are often lost in translation, and it is not uncommon for the original meaning to be changed completely. This fact is compounded when

information must be translated twice, in this case from English to Thai and back to English. In many cases, our group was faced with a triple-translation, due to the existence of a northern Thai dialect known as *Passa Nua*.

In order to mitigate the effects of translation, the survey and focus group questions were carefully formulated and whenever possible, discussed at length with our liaison and translators. In addition, questionnaires were rigorously field tested and revised as appropriate. In order to ensure the conservation of meaning when the responses were translated back from Thai to English, members of our team worked closely with the data collection team translators to assure that consistent meanings were expressed. Additionally, prepared survey questions from the epidemiological study were used directly from the original Thai documents whenever applicable.

For focus groups, a skilled bilingual moderator was used. Audio recordings were made of all sessions and used to aid the transcription of summaries immediately after they were concluded. Notes were also drafted on the spot through the use of two translators who verbally translated as events occurred.

Translations are time-consuming and labor-intensive, which were two factors that were taken into account when designing the final methodology. In order to ease difficulties with translation, surveys were designed so that little actual translation was necessary. They were made available in the same format in both English and Thai, with very few open-ended questions. Thus, responses could be coded and entered into a computer database with minimal help from translators.

Limitations with Regards to Secondary Data

The ability of this group to determine the success and feasibility of relocation of residents in Mae Moh was largely dependent on quantitative comparisons between data about previous and current conditions. From the beginning, it was decided that

we would need information from a number of secondary data sources in order to make these comparisons. Unfortunately, however, the majority of these sources, when they were available, were written in Thai script. Although we were able to get summaries for some of the documents, particularly those from EGAT, complete translation was not an option. Thus, the determination of practicality for relocation was hindered by the limited access to the secondary data relating to previous years.

3.4 ANALYTICAL MEASURES AND ANALYSIS OF DATA

In order to analyze the collected data, it was necessary to organize it appropriately. For focus groups, copious notes were taken and, when possible, organized into relevant categories using the software program Ethnograph. An audio recording allowed for review and inquiries to be made as necessary. Survey data was coded numerically and entered into Microsoft Access. We planned to enter it twice, as that is generally accepted practice by epidemiological researchers, but time constraints did not allow for that. Opinions or other subjective answers were collected and grouped according to similarity so that they could be given quantitative weight.

Following the organization and quantification of the data, it was possible to search for correlations that would point to an overall set of findings. Essentially, that allowed the project team to determine, through the various tasks on different levels, an answer to the original question: Was relocation a success and feasible option for the future for residents of Mae Moh?

4.0 RESULTS AND ANALYSIS

The survey, focus group, and observational data are presented and analyzed in the following chapter by the appropriate subheadings. The findings on each topic are discussed for all of the communities at once so as to facilitate understanding of the comparisons that were made. Furthermore, extensive use of tables and figures was made to help the reader and to highlight information pertinent to the analysis and arguments.

4.1 SURVEY INTRODUCTION AND DEMOGRAPHICS

In order to evaluate the success and feasibility of relocation, five different villages were surveyed because of their unique situations. The two villages selected from *Tambon Na Sak*, Ban Na Sak and Mae Luang, have never been relocated. The other four villages were selected because they were relocated by EGAT under two different agreements. Villagers in Na Kam and Moh Luang were relocated with infrastructure provided for them, while villagers in Moh Seri were given only monetary compensation. Contrasting both types of relocation projects in conjunction with a group that had never been resettled allowed the project members to evaluate relocation in a more thorough manner.

Three surveys were designed for the different groupings of respondents. The chosen sample to be surveyed for Na Sak was mirrored against the sample of the Chulalongkorn University epidemiological study. This was necessary for logistical reasons surrounding the data collection process. In addition, the choice afforded us the ability to merge our data with data collected by the university staff, thereby saving large amounts of time, money and effort.

A 24-question survey was administered to 137 households in the two villages selected from *Tambon Na Sak*. No distinction was made between respondents of

these two villages because neither had ever been moved. The survey in its entirety can be found in Appendix F. A total of 125 of these surveys were successfully matched with subjects in the Chulalongkorn study in order to make economic, health, and education information available for analysis.

For Moh Luang and Na Kam, a 37-item questionnaire, nearly identical to Moh Seri's but without the health questions, was administered to 124 people in a sample obtained from Chula's epidemiological study participants. For the purposes of this study, there was no distinction between Na Kam and Moh Luang. Of the 139 households in the sample population, one person from each of the 124 households that were surveyed in conjunction with the Chula project conducted in 1997 (2540 B.E.). The data presented in this report on salary, occupation, education, and any respiratory symptoms were taken directly from that study.

Two of the people surveyed responded that they did not move to the village because of EGAT, and as a result were not included in our analysis. Additionally, one survey did not have a birth date recorded, and so it was not used in any age-related calculations.

A complete survey with all health and socio-economic questions was prepared for residents of Moh Seri. Because no data had ever been collected on this village before, it was necessary to obtain all of the information that would be needed from the surveys. The entire village was selected as the target sample, and the survey was administered to one person in each of 150 of the estimated 166 households (90.3%).

The demographical profile of the villagers does not vary too substantially from village to village. In Na Sak, the average age of respondents was 41 years, compared to 43 years in Moh Luang / Na Kam and 48 years in Moh Seri. Of the three villages, however, Moh Seri was the only one with a nearly even gender distribution (52%

female, 48% male). The numbers for *Tambons* Na Sak and Mae Moh were 69.3% female, 30.7% male and 67.7% female and 33.3% male, respectively. In order to ensure that the large number of female respondents did not skew the data, several questions were analyzed separately for male and female respondents and are discussed as appropriate.

Having never been relocated, Na Sak villagers had the longest average time of residency, 33 years. The time reported for length of residency in Moh Seri ranged from 7 to 11 years, with an average time of 8.5 years. The *pu-yai ban* assured us that all of the residents had been relocated by EGAT under the same agreement, and so we assumed that the discrepancies in time were a result of poor memory. The average time of residency in Moh Luang / Na Kam was a little under 11 years.

4.2 HEALTH AND HEALTHCARE

Although both Moh Seri and Moh Luang / Na Kam were relocated for developmental reasons, and not for health reasons, it was still important to evaluate any change in the physical well-being of the villagers. Another important factor to consider when examining the impacts of relocation was the accessibility and quality of healthcare. Unfortunately, due to time constraints, two obstacles were encountered in performing these tasks. First, the current health data for Moh Luang / Na Kam, and Na Sak were not available for this report. Therefore, for sake of comparison, health data obtained from the Chula epidemiological study conducted in 1997 was utilized. Second, no clinical health data collected by a nurse or doctor, such as incidence of acute respiratory illness, could be obtained from the district hospital. Findings on the health and healthcare of the villagers are presented below.

In Figure 4.1, the results from the 1997 epidemiological study's questions regarding symptoms are presented for Na Sak, and Moh Luang / Na Kam; for Moh Seri, the data was taken from the present survey. Of interest to this study are symptom 2, cough; symptom 3, phlegm; symptom 5, irritated nose, symptom 7,

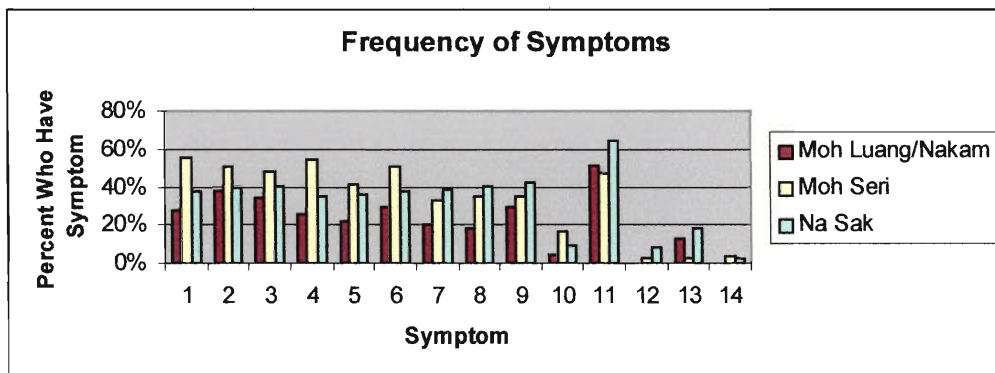


Figure 4.1 - Bar graph of medical symptoms for Moh Seri, Moh Luang/Na Kam and Na Sak residents

“stingy” or irritated throat; symptom 8, sore throat; symptom 9, irritated eyes; and 13, tightness of chest because they are the most likely to be caused by high levels of sulfur dioxide. From this chart, it can be concluded that the people in Moh Seri are, for twelve of the fourteen symptoms listed, in poorer health than the people in Moh Luang / Na Kam, while the people of Na Sak show the highest number reported for six symptoms. However, it is unwise to draw any deeper conclusions because the data for Na Sak and Moh Luang / Na Kam were over three years old. Full statistics for the symptoms can be found in Appendices N, P, and R.

Questions were asked about healthcare facilities. The first asked whether the villagers felt they had adequate access to a healthcare facility. Because the Thai healthcare system differs substantially from American healthcare, it was necessary to define the term “healthcare facility” as any hospital or clinic at which there is at least a registered nurse, if not a doctor. Surprisingly, 100% of the survey population in Na

Sak answered that they do have adequate access to healthcare. In Na Kam, 98% responded yes, and in Moh Seri, 94%. From these nearly uniform answers, it can be concluded that access to healthcare was not an issue that needs to be addressed in any of the villages this project studied.

The next question about healthcare asked whether the nearest healthcare facility was near or far. In Na Sak, only 45% of the population responded that the nearest healthcare facility was near. This is not surprising, however, because Na Sak is very far-removed from the rest of the district, and the nearest facility employing a licensed physician is the Mae Moh District Hospital located in Na Kam. The respondents in Moh Luang and Na Kam, for the most part (92%), replied that the nearest facility was closer than it had been in their old village, with 7% saying it was farther, and 1% saying it was about the same distance away. It was predicted that a larger portion of this population would answer “near,” because the district hospital is located in *Tambon* Na Kam. In Moh Seri, 57% of those surveyed said that they were farther from the nearest healthcare facility than they had been before moving. During the focus groups in this village, one of the village leaders explained that the people were closer to the health center in the old village, and some even wanted that facility to be moved with them, but many do not remember that far back. Interestingly enough, however, Moh Seri is located a relatively short distance down the road from both the *tambon* health center and a military hospital. It is evident from this that only residents in Moh Seri perceived a problem with the distance to healthcare, and so this is clearly a function of where the residents were relocated. If they were relocated to the same area as Moh Luang and Na Kam were, there would presumably have been no problem.

The final question regarding healthcare asked the villagers to evaluate the quality of their healthcare facilities. Because Na Sak villagers were never relocated,

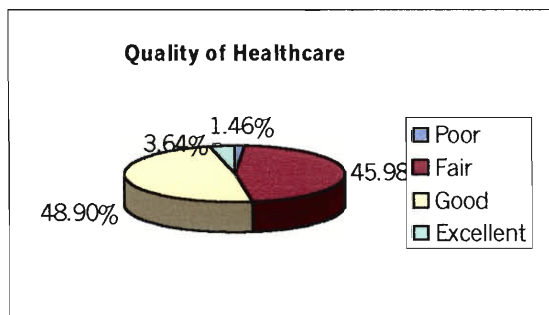


Figure 4.2 - Quality of Healthcare in Na Sak

their question was worded differently, and asked them to assess what was currently available to them. In this village, slightly less than half (48.9%) of the target population rated the quality of healthcare as

“good” (see 4.2). Nearly the same proportion rated it as “fair” (46.0%). Ratings of excellent (3.6%) and poor (1.5%) proved to be extremely rare choices.

Overall, the results of the survey on health are not very surprising. *Tambon* health centers, although they are usually just a short distance from the village, are only staffed by people with nursing skills. Thus, for any serious medical condition, it was often necessary for villagers from Na Sak or Moh Seri to visit the Amphoe hospital in Na Kam. Observational data revealed this facility to be a 30-bed hospital with basic services such as radiography, a maternity ward, and a pediatrics unit. The facility is undoubtedly of adequate quality to treat most patients.

Focus groups conducted with the *Aubotol* in Na Sak revealed ambulatory service to be one of the biggest concerns in Na Sak. According to one *Aubotol* member, “[The Village] used to have a van to take people to the hospital. Now, there’s no money. Now, we must share the cost of transportation as a village.” The same group also expressed concerns over the cost of healthcare compounded with the cost of transportation. The hospital makes available insurance cards for 500 baht that

allow the holding family to receive free medical coverage for all illnesses. However, in a village of subsistence farmers, 500 baht is a difficult amount of money to obtain.

For Moh Luang / Na Kam, and Moh Seri, the question asked the villagers to compare the current healthcare to what was available in the old village. For Moh Luang / Na Kam, 24% replied that it was worse than in the old village, 10% replied the same, and 66% replied that it was better. For the villagers in Moh Seri, 71.6% felt that it was the same or better in terms quality when compared to the care available prior to relocation. Therefore, it would not be necessary to upgrade the quality of healthcare facilities currently available to these two relocated communities.

4.3 ECONOMICS

In order to assess the economic changes that occurred a result of the relocation projects, it was necessary to create an economic profile for the residents of each village in question. This was done through survey results and focus group questioning. The following sections examine each of the components of these economic profiles, comparing and contrasting the three communities in order to obtain an accurate picture of the changes that have occurred.

4.3.1 INCOME AND SAVINGS

An important section of the questionnaire addressed the impact of the relocation projects on the economic health of the villages. Again, Na Sak (*Ban Na Sak* and *Ban Mae Luang*, collectively) was used as a baseline view of what conditions in the relocated villages would have been if no migration took place.

In the interpretation of our findings, we make the assumption that Na Sak represents an economy and environment similar to that of Moh Luang / Na Kam and Moh Seri before the relocation. Na Sak remains a community of primarily subsistence farmers. For the most part, those who are able to grow agricultural

products such as rice usually do so only to feed their own families. If there is extra product, it may be sold for additional income. In addition, villagers often seek part-time employment during the off-season.

In 1997, the average annual household income for Na Sak was about 10,664 baht, compared with 36,753 baht for Moh Luang / Na Kam and 40,387 baht for Moh Seri. However, several extraordinarily high incomes in each village skewed the overall average, which is not completely indicative of the average annual salaries of most people. Therefore, we take the median values of 5,000 baht, 24,000 baht, and 12,000 baht, for each of the villages, respectively, to be slightly more accurate representations. It should be noted, however, that the mode (most common) salary for Na Sak and Moh Luang / Na Kam is 0 baht, and for Moh Seri, 36,000 baht. For comparison, all nine salary figures can be found in Table 4.1.

	Average	Median	Mode
Na Sak	10,664	5,000	0
Moh Luang / Na Kam	36,753	24,000	0
Moh Seri	40,387	12,000	36,000

Table 4.1 - Salary comparison for Na Sak, Moh Luang / Na Kam, and Moh Seri

Although the older 1997 figures for Moh Luang / Na Kam and Na Sak should be taken somewhat cautiously when being compared with the recent figures from Moh Seri, observational data and other current information still strongly support the conclusions that can be drawn from these numbers. For example, the median household savings values for all three villages are in the low range (about 0 to 1000 baht). Focus group members for all three villages explained that income is spent almost immediately due to the high cost of living. "The economy is terrible," complained one youth from Ban Na Sak, "you need to buy too much."

The noticeable difference in annual salary between Na Sak and the two relocated villages is also not very surprising when considered in terms of the relocation agreement. According to documentation from EGAT, the land area of the village of Na Kam was reduced from 2,400 rai of land to 1,400 rai. Moh Luang was reduced from 18,000 to 1,945 rai, not including the land that was purchased and allocated by the residents of Moh Seri.

Altogether, families reported an average of 5.5 rai for Na Sak, 1.07 rai for Moh Seri and 1.70 rai for Moh Luang / Na Kam. With such a tremendous reduction in land for agriculture and housing space, families in Moh Luang / Na Kam and Moh Seri have transitioned from sustenance farming to an employment-based economy. Elders from Moh Luang / Na Kam described it as a situation where everyone was either "rich or poor with nothing in between". They explained further that those who were subsistence farmers used to serve as a middle class, a class that could take care of themselves at the very least by means of farming. Without farmland however, the unemployed cannot even feed their families. Thus, they drop to the level of poverty.

One question on the survey that produced some rather inexplicable results asked, "Do you make more or less money now than you did before the relocation?" Interestingly, 77.5% of those in Moh Seri claimed their salary to be less. Likewise, nearly 56.1% reported the same in Moh Luang / Na Kam. Our only explanation for this striking set of results is that the respondents may have been considering their overall economic situation (i.e. expenses as well as income) when answering the question, perhaps due to changes in meaning caused by translation. Alternatively, it is also possible that residents of the old Moh Luang were farming for more than simply subsistence, thereby making a significant profit. Data from EGAT shows that the old Moh Luang consisted of nearly 18,000 rai of land, which might have been sufficient

to include for-profit farming. This is clearly an area that needs to be addressed in future studies.

4.3.2 FAIRNESS OF THE RELOCATION AGREEMENT

A question on the survey that clearly was impacted by the information above is, "Do you feel that the agreement with EGAT was fair?" In Moh Seri, approximately 80% of the respondents responded negatively. The response in Moh Luang and Na Kam was more evenly divided; 52% of the general population felt that the agreement was fair. Most often, the additional comments were that EGAT gave too little money and did not provide any agricultural land or compensation for it.

It would seem possible that age, gender, income and savings may have played a role in the distribution of responses for this question. Thus, for age distinction, the respondents were grouped by "under 50" and "50 and over". This age division was chosen because it was felt that the number most accurately represented the diversity between the "elders", people who were likely to not be working full time, and those who are members of the working class. For Moh Luang / Na Kam, a salary division of 36,000 baht was chosen to differentiate "rich" from "poor". In Moh Seri, the number was 40,000 baht. Both figures were relatively close to the mean value, making the assumption that anyone over the mean made well above a "normal" salary.

Although a large difference in opinion did not exist between the sexes or generations, a few clear trends did emerge from this cross-linking of data. First of all, it was evident that in Moh Luang / Na Kam, 63% of the people who make more money now than they did in their old village claimed that the EGAT agreement was fair. Similarly, those who made at least 36,000 baht in 1997 were also more likely to be satisfied with the agreement. A full table of distributions for Moh Luang / Na Kam by gender, age, more money, and income is shown in Table 4.2.

	All	Male	Female	Old	Young	More Money	Less Money	>36000	<36000
No	48%	50%	46%	50%	47%	37%	51%	40%	51%
Yes	52%	50%	54%	50%	53%	63%	49%	58%	49%

Table 4.2 - Moh Luang/Na Kam distributions of answers to "is the agreement fair" by gender, age and relative wealth.

In Moh Seri, the data showed a similar trend where people who made more money after moving or those who made more than 40,000 baht per year responded that the agreement was fair. See Table 4.3 for further details.

	All	Male	Female	>50yr	<50yr	More Money	Less Money	>40K	<40K
No	76.2%	77.6%	75.9%	80.9%	73.2%	67.7%	80.3%	66.6%	80.2%
Yes	23.2%	22.4%	24.1%	19.1%	26.8%	32.3%	19.7%	33.3%	19.8%

Table 4.3 - Moh Seri distributions of answers to "is the agreement fair" by gender, age and relative wealth.

For both Moh Luang / Na Kam and Moh Seri, it appears that economically stable and successful residents were less likely to want or need additional money from the agreement, and that they would be more likely to be able to sustain losses from the move than those who do not have access to as much money.

4.3.3 STYLE OF LIVING

The final set of economic indicators on the survey attempted to assess the economic standing of the villagers with respect to their style of living. This was done primarily through questions about the residents' possessions and household assets. A brief examination of Figure 4.3 shows that the three most popular assets for all three villages are a television, motorcycle and refrigerator. In Na Sak, 89.0% of families own a television, 81.0% own a refrigerator, and 75.0% own a motorcycle. Similarly, in Moh Luang / Na Kam, the numbers are 86.7%, 90.1%, and 86.7%, respectively,

and in Moh Seri 88.7% own televisions while 84.8% and 73.5% own refrigerators and motorcycles. Informal interviews conducted with data collectors and other workers familiar with rural northern Thai villages suggest that these amenities are often purchased on a payment plan from the store.

With regards to possessions, it is fairly clear which amenities and conveniences are most important to the population of all three villages. Additionally, it is worth pointing out that each village, regardless of its individual economic standing, continues to find the same assets important for much the same reasons. For instance, a vehicle is a necessity in order to leave the village and in many cases, travel within. Most of the villages, with the possible exception of Moh Luang / Na Kam, are characterized by long dirt roads with some houses set far apart. Moh Seri and Na Sak are located some distance from provincial and district facilities such as hospitals and schools and none of the three villages are very close to the city.

The television, as in Western society, is a centerpiece of modern family entertainment. In villages like Na Sak, there are no streetlights, so people generally

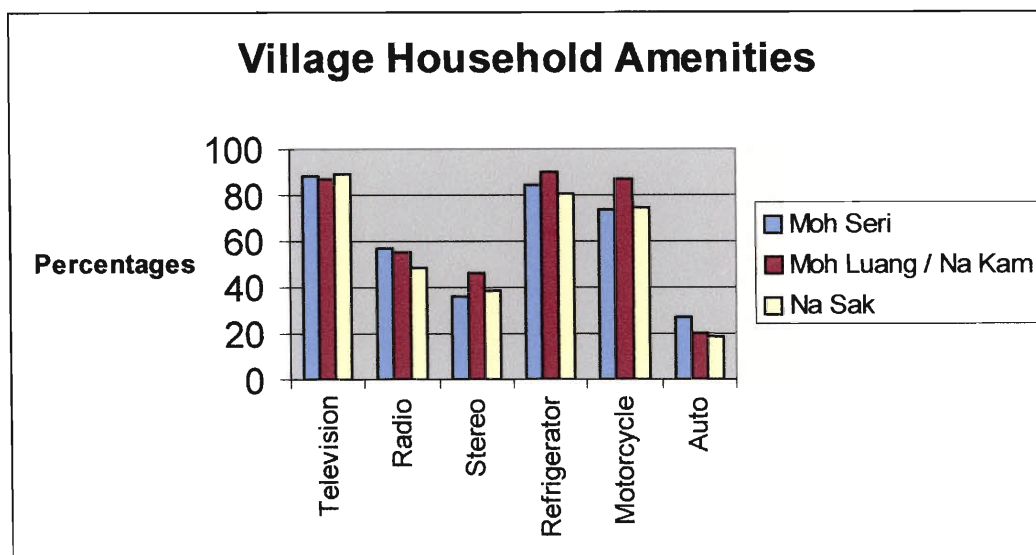


Figure 4.3 - Household amenities for Moh Seri, Moh Luang, Na Kam and Na Sak

find themselves indoors for most of the evening hours. Thus, the television was the preferred form of entertainment at night. A refrigerator, usually a small one, provides the same modern convenience of food storage that it does in western kitchens. For many families, the market is a distance away and having a refrigerator could save significant travel time.

Economic Empowerment

There is one more issue that should be considered -- land ownership. All land in *Tambons* Mae Moh and Na Sak is owned by the Thai Ministry of Forestry. Under an agreement document known as *sotorkor*, families are allowed to live on a designated plot of land and develop it for agricultural purposes. The land cannot be bought or sold, but may be passed on to future generations as long as it remains in use. If the land is no longer in use, the Ministry reclaims it. In contrast, residents in Moh Seri own their land; they each contributed approximately 50,000 baht and collectively bought the village land. These residents therefore have proper ownership documentation, known as *nososam* or *chanod*, that allows them full property rights.

The significance of these different types of ownership comes into play when one considers the issue of economic empowerment. During focus group interviews in Moh Luang and Na Kam, it was stated that the villagers were under the impression that they would own their new property upon moving to the new village. When the time came, however, *sotorkor* documents were issued instead. Although the documentation available from EGAT refuted the villagers' claims regarding this part of the agreement, the matter was a moot point at the time of this study. It had become increasingly evident that the lack of a sense of ownership had impacted how villagers felt about themselves and their ability to increase their own economic stability. They felt that if they wished to move away from the village, they could not afford to

because they did not own anything that they could sell. As one focus group participant put it, there was a feeling of "hopelessness."

Moh Seri, on the other hand, seems to have gained something from the ownership of its land. Although the residents often complained about the cost of constructing an entire new village, they seemed to have a sense of accomplishment for what they have built. For example, during their focus groups, *Aubotol* and elders pointed out how the community worked hard to get electricity into the village nearly a year and a half after they moved. Their most recent battle was to have the roads paved, a financial burden that the provincial government was not ready to take on by itself. To some extent, Na Sak residents shared this sense of satisfaction that Moh Seri possessed. One Na Sak elder boasted, "The youth of today have it comfortable because we built all of the comforts for them. Running water, electricity..."

4.4 INFRASTRUCTURE

To determine how relocation may have impacted the infrastructure of the villages, respondents were asked to compare certain aspects of their current village with the same in their previous village. For Na Sak, the subjects were asked to quantify the quality of their infrastructure according to comparable scales. The following section examines the responses and discusses them at length.

Table 4.4 depicts frequency distributions for Mae Moh resident evaluations of roads, schools, access to electricity, access to the market, recreational facilities and the temple. Table 4.5 shows the same for Moh Seri. Several key statistics stand out from these tables. For instance, one can safely say that in Mae Moh, the villagers consider nearly all aspects of the infrastructure to be better than before they moved. The only exception is the 23% who consider the temple to be worse. In Moh Seri, roads are rated better, while schools, access to the market, recreational facilities and

the temple are rated worse. The quality of electricity in Moh Seri is simply rated as "the same". The condition of the temple, in fact, has the most extreme response, with 88.1% saying "worse". Focus group analysis reveals that this is most likely due to the fact that temple construction was never completed.

	Roads	Schools	Electricity	Market	Recreation	Temple
Better	96%	80%	72%	60%	63%	63%
Worse	1%	8%	3%	31%	6%	23%
Same	1%	9%	22%	8%	30%	12%

Table 4.4 - Moh Luang/Na Kam Infrastructure Ratings

	Roads	Schools	Electricity	Market	Recreation	Temple
Better	53.6%	27.8%	31.3%	24.5%	23.8%	7.3%
Worse	19.9%	47%	16.6%	58.3%	48.3%	88.1%
Same	27.8%	24.5%	51.0%	16.6%	26.5%	3.3%

Table 4.5 - Moh Seri Infrastructure Ratings

	Roads	Schools	Electricity	Market	Water
Poor	21.9%	3.6%	2.1%	32.1%	20.4%
Fair	45.3%	40.1%	30.6%	46.7%	32.1%
Good	32.8%	55.4%	64.2%	21.2%	47.4%
Excellent	0.0%	0.73%	2.9%	0.0%	0.0%

Table 4.6 - Na Sak Infrastructure Ratings

For the most part, respondents in Na Sak felt that roads and drinking water were fair to good. Although most roads in Na Sak are simple dirt passages, it makes sense that not much else would be required when the primary vehicle in use is a motorcycle.

Schools also received a fair to good rating, although information obtained in focus groups indicated that access to education and educational opportunities was far from adequate, primarily for financial reasons. This contrast is likely due to the narrow scope of the survey question. For instance, village schools are compulsory, funded by the government, and only provide education up to the 6th year. Anyone who wishes to obtain education beyond year 6 must travel to the district school, and

pay tuition, room and boarding costs. Since the survey data collection team was asked to indicate the village school as the facility being evaluated, the concerns regarding cost and distance that were voiced in the focus groups were not included in the response. An illustration of the further problems with the interpretation of this question can be found in the Moh Seri data, where schools were generally rated as "poor." It was later discovered that Moh Seri does not maintain its own school, but shares one with an adjoining village. Thus, it was likely to have been rated poorly due to distance or because the rating process was flawed.

The final four queries dealt with availability of electricity, access to the market, recreational facilities and the temple. In Na Sak, unlike Moh Seri and Mae Moh, 60.6% rated the temple as good. Observational data supports the fact that the temple is well kept and in very good condition. Recreational facilities, however, showed a low point when more than half (51.8%) rated them as fair. Moh Seri was equally as low (48.3% rating of "worse") and Na Kam was rather high (63% rating of "better"). Observational data showed that recreational facilities in Na Sak are usually centered around the schools; Moh Seri's facilities are limited to a volleyball net and Na Kam appears to have use of a public park. Although most of the facilities are in good condition, they are often a distance for the homes and difficult to use in the evening, after dark.

One factor that could have contributed to mixed ratings of recreational facilities in all villages was translation. The term "recreational facilities" does not translate directly into Thai. Thus, it was often up to the data collector to explain or clarify in his or her own words. This clearly would introduce inconsistencies and biases into the data set.

The evaluations of electricity are also perplexing. All three villages rated it rather poorly. Observations show that electricity was widely available to nearly every house in the village and nearly every house seemed to be a subscriber. Without further inquiry involving the village leaders or the power company, it would be impossible to explain this anomaly.

The final infrastructure response, accessibility of the market, varied from village to village. However, most of the ratings can be explained. Mae Moh rated its access to the market at 63%. This is not surprising since the largest market in *Tambon* Mae Moh is located just behind the Mae Moh Hospital in Na Kam. The majority (58.3%) in Moh Seri, on the other hand, rated the access to the market as poorer than it was in the old village. Observation and informal questioning of the *pu-yai ban* revealed that the Moh Seri market has been abandoned for years. Thus, villagers must travel into Lampang for necessities. Na Sak residents also rated their access to the market as poor to fair (32.1% and 46.7% respectively). Again, informal questioning revealed that the market near *Ban* Na Sak and *Ban* Mae Luang is quite a distance from the villages. From this information we concluded that accessibility is an issue.

It was believed that many of the above infrastructure variables might have shown differences between gender, age or wealth. Therefore, a thorough statistical analysis was conducted in these areas. No significant correlations were found for Na Sak and Moh Seri. However, responses from Mae Moh showed several interesting trends. This could be due to the nature of the infrastructure in the area, since it was almost all provided by EGAT. For brevity, the complete tables of these comparisons have been placed in the appendices and only highlights are presented here.

The two groups that stand out in Mae Moh are elders and people who claim to make less money than they did prior to relocation. Both of these groups have a higher instance of "same" responses than their counterparts (young people and people who make more money in the new village). A similar trend showed that older people and people who make more money in the new village). A similar trend showed that older people and people who make more money also showed higher ratings for schools and recreation. The data thus support the conclusion that people who are better-off economically after resettling were more likely to rate their infrastructure as being of better quality than would people whose economic health has suffered. It is also possible that the elders gave higher ratings for the infrastructure than did younger residents because they do not have as high expectations or as much knowledge of the facilities (e.g. schools).

4.4.1 ENVIRONMENTAL CONDITIONS

When villagers in Moh Seri were asked to compare current the distances between home and job with the distances between home and job in the old village, 82% replied that they were farther away from their

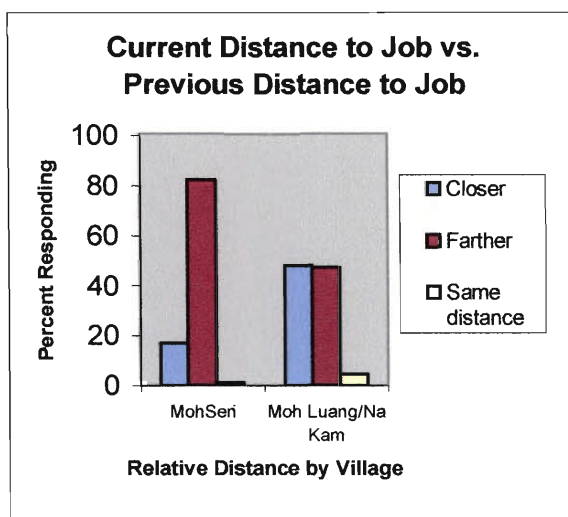


Figure 4.4 - Differences in job distance

jobs. The most popular type of occupation was agricultural prior to relocation, and many residents did not have to travel to a job because the fields were nearby. In Moh Seri, however, many had to work as wage laborers in the new village and go where the jobs were; it was probable that most of these jobs were in Lampang. Although residents of Moh Seri were closer to the city than they had been previously, traveling to Lampang every day rather than to work in the fields would certainly have been an increase in the distance to the job site.

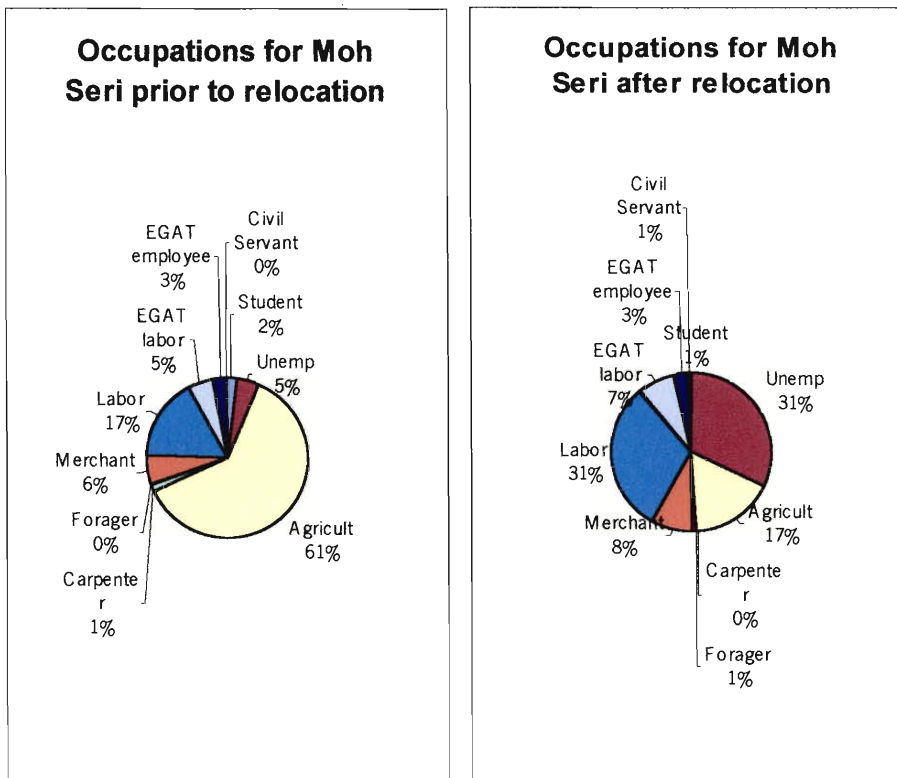


Figure 4.5 - Comparison of occupation frequencies for Moh Seri before and after relocation

In Moh Luang / Na Kam, however, the numbers were more evenly distributed with about half being closer to their jobs (48.2%) and half being farther away (47.3%). Although this is rather different than the responses in Moh Seri, it can be easily explained if one looked at the changes in the occupations of the villagers. The main reason for different responses to the question about job distance is a function of the changes in occupations experienced by the villagers after relocation. Prior to relocation, about a third of the villagers were laborers (not working for EGAT) and about a third held agricultural jobs (Figure 4.6). After moving, however, the proportion of villagers with agricultural jobs plummeted to less than 1% of the working population and the number of merchants grew six-fold. As in Moh Seri, the unemployment rate nearly doubled.

It is therefore likely that a large number of those people answering that their jobs were closer were the merchants because Moh Luang and Na Kam were centered around one of, if not the, largest markets in all of Amphoe Mae Moh. Furthermore, the changes in distance can be explained by the fact that the number of agricultural workers significantly decreased, who then became unemployed or had to find jobs that were likely to be further away.

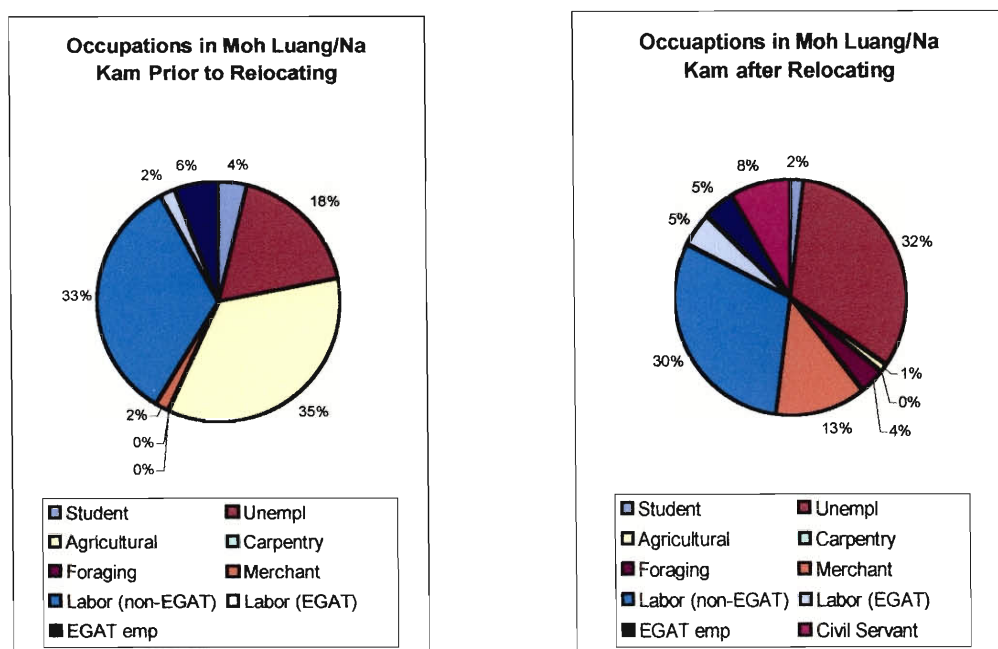


Figure 4.6 - Comparison of occupation frequencies for Moh Luang/Na Kam before and after relocation

The changes in occupational trends that we examined earlier are indicative of modernizing societies, where there is a shift from agriculture to wage laborers. It is likely that the close proximity to Lampang has hastened this modernization in Moh Seri and *Tambon* Mae Moh. Members of both the older and younger generations agreed that young people no longer want to be farmers and live in the village, but would rather move away for a more secure, better paying job. The youth, in their focus groups, revealed that they feel it was too risky to be a farmer and that there was no money to be made. Because of this long-term goal, the youth were much more

interested in education, and the close proximity to Lampang provided much better access to schooling, even if it was cost restrictive at times. The increased level of education for the younger generation was likely to ensure that they will be able to secure non-agricultural jobs and that this trend will continue for some time.

For a statistical example, we will look at Moh Seri, perhaps the closer of the two villages to Lampang. Prior to the move, 2% of the adult population was engaged studying at one level or another but that number dropped down to 0% after the move. A little over 50% of the population has had any education beyond the level of the sixth year. One-third had no education at all and only a very few members of the population were able to obtain additional schooling; 12.6% of respondents held a secondary school, trade school, or college diploma. Considering that the average age of respondents was 48 and that compulsory education was raised to six years fairly recently, these numbers were not all that surprising.

Despite the fact that only a small segment of the population has had any sort of advanced education, this is likely to change in the future. Of the six members in our youth focus group for Moh Seri, four were still students; the two participants who were not expressed that they would have liked to continue studying but that it was not economically feasible. The ages of the participants ranged from 19 to 27 and the ages of those studying ranged from 19 to 23, well beyond a six-year level of elementary school.

Regardless of age and level of schooling completed however, focus group participants all stressed the importance of education. On several occasions, it was stated that the members of the younger generation were more interested in studying and also had better access to school than did the elders. Despite the value that villagers assigned to education, many mentioned that it was not economically

feasible. The teenagers and young adults often talked about how financially difficult it was to continue studying. The parents of one of the young men in Moh Seri were no longer supporting him while he was studying, so he had to support himself.

Another, in *Tambon Mae Moh*, claimed that he wanted to work and maybe give a younger sibling the opportunity to study that he never had.

In order to obtain some baseline opinion information about the environment of Moh Seri, questions were asked about the cleanliness of water and air, as well as the growth of the crops compared to that in the old village. More than four out of five respondents (83.4%) complained that the water was dirtier, but the majority (71.4%) felt that the air was as clean or cleaner than that which they had prior to relocation. A few people commented on the surveys that they were happy to move because they were able to leave the pollution of the old Moh Luang. As can be seen in tables from Appendix N, there were not any striking differences in responses between the sexes, generations, or income levels.

For water quality in Moh Luang and Na Kam, there was no difference in response by age, gender, or income, with an overall response from 74.1% that the water was as clean or cleaner than the water in the old village. For air quality, 43.3% of the population thought that the air was cleaner, and 33.0% thought that it was about the same. In terms of age differences, 51% of the young people responded that the air was cleaner, compared to only 39% of the people over 50.

The differences in opinions on water quality are relatively easy to explain. The leaders and the elders both told us during focus groups that the water in Moh Seri was not safe for drinking; residents had to either collect rainwater or buy bottled water. The *pu-yai ban* said that the ground was too high in iron and that EGAT had told the residents that before they relocated there.

Air quality was separately examined only by age because we hypothesized that the elderly would have more respiratory illnesses than an average member of the population and might attribute these to the quality of the air. The difference in quality that was reported by the villagers is most likely a function of their distance to the power plant. Moh Seri had been relocated to an area outside of *Amphoe* Mae Moh, relatively far from EGAT, while Moh Luang and Na Kam were in *Tambon* Mae Moh and were much closer to the stacks of the power plant.

As for the growth of crops, the general consensus in Moh Seri was that the crop growth was either at the same level (13%) or poorer (67%) than it was in the previous village. Similarly, in Moh Luang and Na Kam, 52.7% also felt that their crops did not grow as well as they had in the old village. In terms of the growth of the crops, it is possible that the soil that they have available to them was poorer than in the previous village. Residents in Moh Seri reported that the soil available to them was sandy and not good for the crops. It is also possible, however, that the villagers assessed their inability to grow crops due to a lack of land as “worse.”

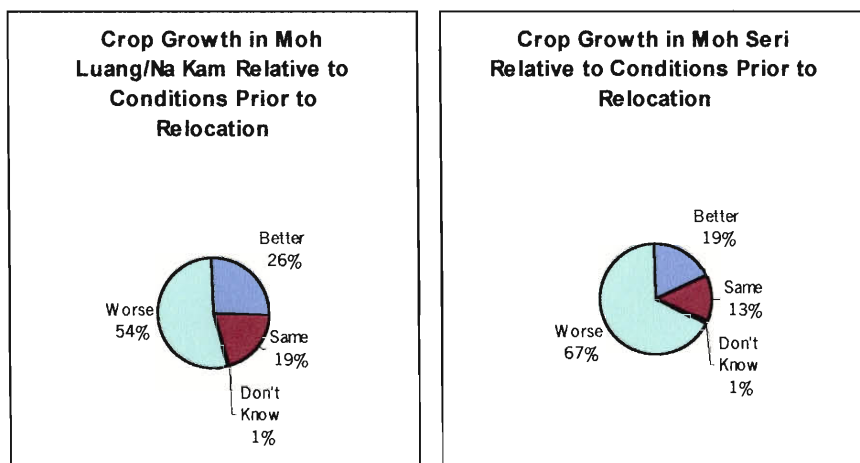


Figure 4.7 - Changes in agricultural capacity for Moh Seri and Moh Luang/Na Kam

Furthermore, for the purposes of this study, the house and its immediate surroundings were taken to be part of the environment as well. Four out of five

people surveyed felt that, overall, their house in Moh Seri was of the same or higher quality. Those villagers who were better off economically were more likely to report the condition of their home as “better.” Although 74.8% still lived with the same people as they did prior to relocation, nearly half (44%) of the villagers had different neighbors.

When villagers in Moh Luang / Na Kam were asked if the condition of their house was better, worse, or the same, there were many variations between respondents in the different gender, age, and income brackets. Overall, 60.7% and 18.8% of villagers responded that their house was either better than the old one or of the same quality, numbers that are roughly the same as those from Moh Seri.

	Moh Seri	MohLuang/Na Kam
Better	53.0%	60.7%
Worse	23.8%	20.5%
Same	44.4%	18.8%

Table 4.7 - Quality of house for Moh Seri and Moh Luang/Na Kam

While only 37% of men said that their house was better, 59% of women said their house was better. Half of the people over 50 said that their house was better, while 63% of people under 50 responded that their house was better. Surprisingly, 37% of people who made more money after moving said their house was better, but 56% of people who made less money said their house was better.

4.5 SOCIAL CULTURE

Several questions were asked that enabled us to make judgments on and to determine the strength of social ties and the villagers’ sense of social community.

Residents in Moh Luang / Na Kam and Moh Seri were asked if they lived with and near the same people that they had prior to relocating. Only 23% of the villagers answered that they lived with the same people as before relocation, but 52% lived near or close to the same neighbors. From the focus group interview of the village leaders, this seemed odd because parcels of land were randomly assigned; people could not choose their neighbors. At this interview session as well as the other two, those present were very troubled that they did not live with the same neighbors. Residents of the original Moh Luang were relocated to either the new Moh Luang or

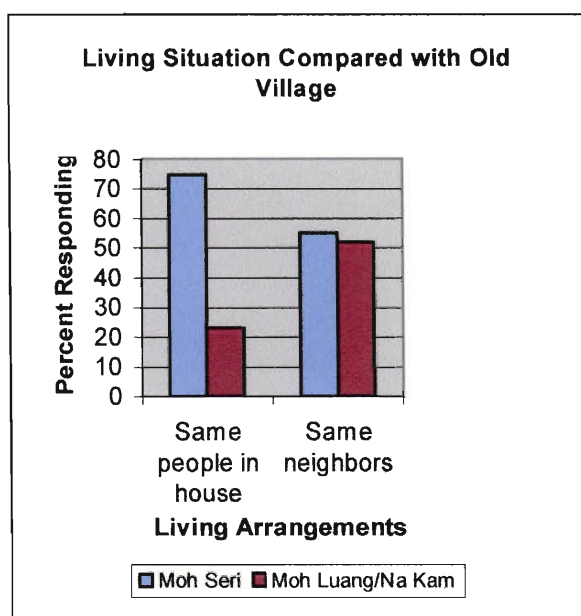


Figure 4.8 - Changes in inhabitants and neighbors for Moh Seri and Moh Luang/Na Kam

to Moh Seri, and all residents of the old Na Kam were resettled in the same area, so it does not seem as though the villagers should be living with different people unless by their own choice. This result seems even more unlikely when seen in comparison to that for Moh Seri.

Approximately three-quarters (74.8%) of the residents in Moh Seri

lived with the same people as they had in the old village. Although many people mentioned in focus groups that they were living far away from family and old friends, residents of Moh Seri were more than twice as likely to live with the same people as residents of Moh Luang / Na Kam. It was unlikely that residents of Moh Luang did not live with the same people as a result of those residents having moved to Moh Seri, because then it would follow that a larger proportion of residents in Moh Seri would live with different people as well. On the other hand, the percentage of people living

near the same neighbors was only marginally larger than in Moh Luang / Na Kam (55%). Residents of Moh Seri, however, had to buy their own land and thus were able to choose the location of their homes and whom they would live near.

The next question was aimed at determining the level of cooperation and support shown to neighbors in each of the villages. The numbers for Na Sak were taken as baseline percentages for comparison with the assumption that the numbers would have been the same for the other communities had they never been relocated. This assumption allowed for a determination to be made as to whether or not the levels had been maintained or increased.

Of all the villages, community assistance was consistently the highest in Na Sak. Only one category out of seven had a rate lower than 50%. Nearly every respondent (97.1%) claimed to help with community chores such as festivals and funerals, and more than 80% helped neighbors with crops. Closely rated as well were assistance with cooking and meals, repairs, and childcare (79.4%, 75.8%, and 69.9% respectively). Almost half of the residents helped with those chores ranked lowest;

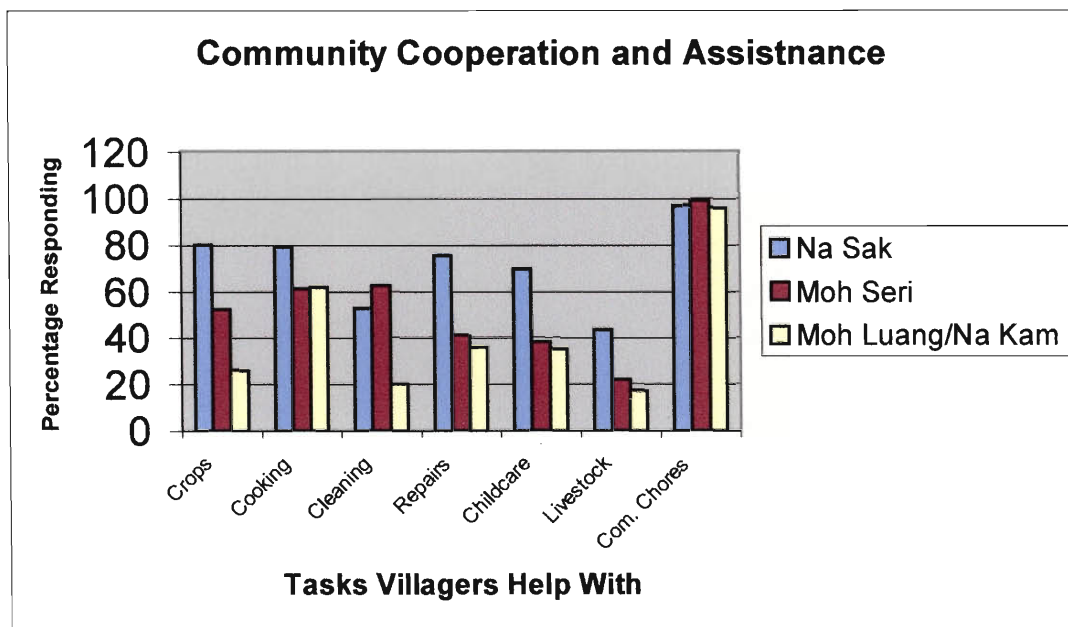


Figure 4.9 - Community cooperation and assistance in Moh Seri, Moh Luang/Na Kam and Na Sak.

help with cleaning and chores, and help with livestock (52.9% and 43.4%).

In Moh Seri, on the other hand, the numbers were noticeably lower, with even the highest numbers being only slightly above 50%. More than half of the respondents replied that they help with crops (52.3%), cooking (61%), and cleaning (62.3%). More than a third helped each other with childcare and repairs (37.7% and 41.1%, respectively), while only about one-fifth (21.9%) assisted in the care of livestock. Regardless of their other involvements, however, nearly every villager (98.9%) participated in community chores. The members of the leader group told us that Moh Seri had a sense of community in the respect that people helped each other out and had good relations. They explained that this was because they had come from the same village and were in the same situation.

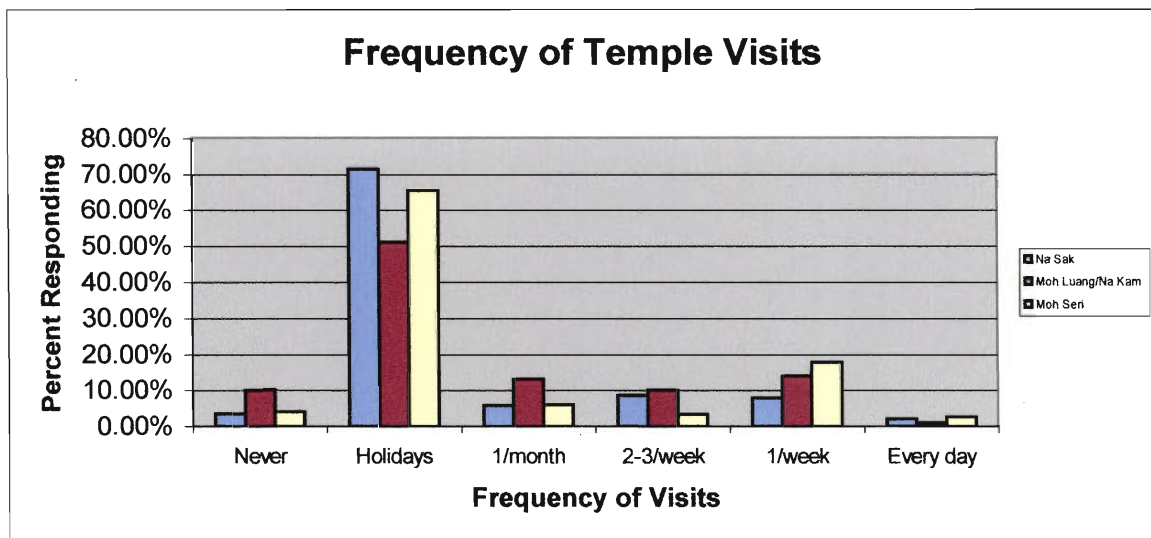


Figure 4.10 - Temple attendance for Moh Seri, Na Sak and Moh Luang/Na Kam.

The extent of assistance in Moh Luang / Na Kam, on the other hand, is much below that which exists in either of the other communities. The only category where most people claimed to help their neighbors on a regular basis was cooking (62%), although some portion of the respondents did participate in each of the other

activities. About a third of those surveyed helped with repairs and with childcare (36% and 35%), and only about a quarter or fewer of the villagers assisted with crops (26%), cleaning (20%), or livestock (17%). When compared with Na Sak, it is clear that the people in Moh Luang and Na Kam had a much weaker sense of community.

For community construction projects, there were obvious differences between

	Na Sak	MohLuang / Na Kam	Moh Seri
Never	16.8%	40%	15.2%
Sometimes	25.5%	28%	51.0%
Most of the time	24.8%	8%	7.3%
Always	32.8%	24%	25.8%

Table 4.8 - Participation in community construction projects for Moh Seri, Moh Luang/Na Kam and Na Sak

the communities, as can be see in Table 4.8. Residents in Moh Luang / Na Kam were more than twice as likely to never participate in construction projects, while residents of Na Sak were more than three times as likely to respond that they participated most of the time. Furthermore, Na Sak was the only community in which more than 50% of the villagers participated most or all of the time.

As for the villagers' religious practices, there were moderate differences between the villages, but the majority consistently responded that they go only on special religious holidays (see Figure 4.10). Moh Seri and Na Sak were very similar in their responses, but there were real differences in Moh Luang / Na Kam. These villagers were more than twice as likely to never go to the temple and less than half as likely to go everyday. Just about three quarters (81.9%, 74.0%, and 75.6% in Na Sak, Moh Luang / Na Kam, and Moh Seri, respectively) went to the temple only once a month, on special religious days, or less frequently than that in all of the communities.

When looked at in terms of age, older members of the community were four times more likely than the younger villagers to go to the temple every day and twice as likely to go once a week. Those under the age of 50 years were four times as likely to never go to the temple in Moh Seri. The elders felt that they were more religious than the younger generation, and talked about how some of them (the younger generation) preferred to visit with friends than go to the temple. They also felt that some of the traditions had been diminished and that not all of the villagers, particularly the teenagers and younger adults, held all of the same beliefs. The participants in the youth focus group agreed, and expressed confusion about many of the traditions and beliefs.

Another area covered in the surveys dealt with participation in community

	Na Sak	MohLuang /Na Kam	Moh Seri	Avg.
Com. Activities	4.0	3.8	7.5	5.1
Temple Activities	4.0	2.6	4.4	3.7

Table 4.9 - Average attendance at community and temple activities.

activities. Despite the obvious differences in the level of assistance offered to one's neighbors, however, more than 80% of all villagers were members of

one or more community groups, including funeral, housewives', youth, and rice farmers' groups. When asked how many times a year they participated in community activities and activities at the temple, villagers responses varied greatly from "never" to "every time." The average numbers and individual village numbers can be found in Table 4.9. It can be seen that Moh Seri had the highest average attendance at these events, and that the numbers for Moh Luang / Na Kam were the lowest of the three villages both times.

One of the most explicit examples of participation in community activities for Na Sak can be seen in Sports Day. Sports Day was perhaps one of the most obvious indicators of community involvement and support for Na Sak. The day, made possible by the hard work and effort of the housewives, was clearly a neighborly effort. Dozens of women and men from the different villages worked together to feed the masses of people attending the celebration while groups danced for hours in front of their village tents in order to support and encourage teammates who were playing volleyball.

We are confident that the residents of Na Sak had a sense of ownership for their village at the time of our observations. The lower numbers for attendance at community and temple activities may reflect a lower number of events rather than a lower attendance rate. From observations it is obvious that the villagers felt responsible for the community and everything that went on within it.

In Moh Seri, the elders stated that they felt attendance at events and celebrations was good, although they mentioned on a separate occasion that some of the youth did not even attend the celebrations. While observing in Moh Seri, it was noted that the entire village (with the exception of small children) was present for the funeral, but that only older members of the community were present for the *Khantok* dinner.

When asked about national or religious holiday celebrations, only a little over a third (37.1%) responded that they celebrate most or all of the holidays and 28.5% never celebrate. Of the people who do celebrate holidays, nearly all do so at home or in the temple with friends, relatives, and neighbors.

Only 32.8% of people in Na Sak responded that they celebrate holidays every time. Closer examination of qualitative data shows that this may primarily be a

cultural and generational difference. Most non-religious holidays (many of them brought to Thailand by Westerners, such as New Year’s day and Christmas) are celebrated on a more intimate atmosphere than temple-centered activities. Most respondents, in additional survey comments, claimed to spend holidays with friends and family at their own homes, if they celebrate at all.

The final question in the social culture section asked residents how much time they spend socializing with neighbors. We had expected to see that residents in Na Sak spent much more time visiting with friends than people in either of the two villages. For this reason, it is perplexing that the numbers showed that the village with the lowest percentage of people socializing most frequently is Na Sak. More than half of the target population (52.6%) indicated 1-3 times per week, but only 37.2% indicated more than 3 times per week.

Given the observation of nightly activities, it appeared as if relaxation and socialization was an important part of each day, particularly the evening hours. On one evening trip to Na Sak in early February, families and their neighbors were observed huddled around a campfire, chatting about the day’s events. Across the street, another group was heard singing loudly and playing hand-made instruments. Children wandered from home to home, watching television with their friends. During daylight, men and women could be seen helping to build a new bridge for the roadway.

Times / Week	All	More money	Less money	>40,000 baht	<40,000 baht
<1/wk	9.9%	6.5%	11.1%	4.8%	11.1%
1-3/wk	30.5%	32.3%	29.9%	40.5%	25.9%
>3/wk	58.9%	61.3%	60.0%	54.8%	62.9%

Table 4.10 - Frequency of socialization by income in Moh Seri.

In Moh Seri, however, the majority of the population visited with friends and neighbors more than three times per week (58.9%). Men were more likely to do so than women and elders were less likely to do so than the other age groups. Looking at it from an economic standpoint, however, there was no clear-cut difference. While people who made more money after relocating to Moh Seri were more likely than those who made less after moving to socialize more frequently, those who made less than 40,000 baht a year were more likely to do so than those making more money.

The survey data for Na Kam and Moh Luang reveal that 63% of the sample population socialized with their neighbors more than three times per week. In more than one interview, the point was made that there were separated groups forming within the community--the youth focus group said some were even based on wealth--and that interaction and mingling between groups was not seen very often, if at all. It was possible that the respondents are only socializing in their own groups, but it was unlikely given the amount of time that they spend doing so and perhaps more plausible that villagers overestimated the fracturing of the community.

In order to make determinations about the changes in social culture, it was necessary for us to first make some assumptions. We took it to be true that the numbers reported by Moh Luang / Na Kam and Moh Seri would have been roughly the same as those reported by Na Sak had they never been moved. Because they had been moved, however, we looked at the differences in the responses as evidence of the changes that occurred in the social culture of those communities. We anticipated that the sense of community and cooperation would have decreased as a result of the type of relocation.

Judging from the responses to the indicator questions, we concluded that the strength of the social ties and the sense of community in Moh Luang and Na Kam had been severely damaged. Many of the residents did not live with or near the same people that they did prior to resetting and really seemed to be bothered by it. Overall, there was not the sense of cooperation and assistance with neighbors in the daily tasks that was present in Na Sak and, to a lesser extent, in Moh Seri. Villagers in Moh Luang / Na Kam are also more likely to never participate in community events or to go to the temple.

Moh Seri, however, does not seem to have been as negatively affected by the relocation in terms of its social culture. The quantitative survey data shows a lessening of a sense of community and cooperation, but not a complete deterioration of the social structure. Members of the focus groups claimed that people were closer and more helpful before moving, but that they still socialize and helped one another to a high degree.

One of the most plausible reasons for this difference in social culture stems from differences in economics and opportunities for growth. Villagers in Moh Seri were largely dependent on Lampang for their livelihood, but Moh Luang and particularly Na Kam had much better economic opportunities for those who were able to capitalize on the growing consumerism of the area. Because residents were no longer able, for the most part, to sustain themselves through agriculture and must instead purchase everything, merchants were doing relatively well and people continued to migrate into those two villages for the employment opportunities. This, in turn, led to a more rapid modernization of the villages whereby they had become more impersonal. Many residents reported living next to people whom they had never known before and were reluctant to act in the same ways that had previously. In

contrast, people living in Moh Seri had not experienced this; all of the residents of Moh Seri were part of the EGAT relocation.

4.6 ATTITUDES

The final section of all three surveys attempted to assess the people's opinions and attitudes about EGAT and the government. Information regarding these topics was also obtained from the focus group interviews conducted in each village. This information, though difficult to quantify and analyze, was important for this project because it provided the best way to determine if the affected people were satisfied with the results of their relocation.

It is worth examining whether the villagers thought their agreement with EGAT was fair or not, as it pertains to their overall opinion of EGAT. In Moh Luang / Na Kam, regardless of age, gender, and economic status, there was an almost exactly even division of opinion. In general, 52% thought that the agreement with EGAT was fair because EGAT paid them for the land. However, 48% said that it was not fair, citing as their main reasons that EGAT did not pay enough for their old house, that they no longer had enough farmland, and, in one case, that EGAT did not hold up its part of the contract. The only groups where a slight majority felt the agreement was not fair were the people who made less money after relocating, and the people who made under 36,000 baht per year (see Appendix R for exact figures). From these statistics, it was safe to conclude that the economic standing of the villagers in Moh Luang / Na Kam impacted how they felt about the agreement with EGAT, which in turn may or may not have affected their overall opinion of EGAT.

Over three-quarters of the general population of Moh Seri felt that the terms of the agreement were not fair. The group most likely to think that it was fair was the group that made more money after moving, but 67% of these people still responded

that the agreement was unfair. Moreover, in addition to feeling that the contract was unfair, participants in the elder and leader focus groups also expressed that many residents were upset with EGAT for forcing, rather than asking, them to move. The money provided was not sufficient to buy the land for the houses, and no compensation was provided for agricultural land. It seems very likely that the villagers' feelings about the agreement had influenced their total opinion of EGAT. In the actual attitudes section of the surveys, participants were first asked if they felt the government provided them with enough financial support. A total of 64.7% of those surveyed in Na Sak said "no" and the remaining 35.3% said "yes." The results showed no major changes when separated by gender, income, or age. Focus group data from the *Aubotol* in this village supports this, indicating that there wasn't enough money allocated each year from the government to divide and distribute appropriately. The *Aubotol* claimed that approximately 100,000 baht was allocated to Na Sak annually. Using values from Appendix N, there was a consensus among the majority of the population of Moh Luang / Na Kam that the government did not offer enough financial support, with no significant differences appearing when the responses were categorized by age, gender, or income. In Moh Seri as well, most people (82.8% total respondents—see Table 4.10) felt that the government did not give enough money to the village. Villagers making less than 40,000 baht a year were almost three times as likely as those making more to perceive a lack of funding.

The villagers were also asked if they think the government took their concerns seriously or not. In Na Sak 65.4% of respondents said "yes" and 34.6% said "no."

	All	≥40,000 baht	<40,000 baht
No	82.8%	92.7%	80.2%
Yes	15.9%	7.0%	19.8%

Table 4.11: Does the Government Offer Enough Financial Support in Moh Seri?

Focus group transcripts from

this village show that people understood the government and trusted it. However, the *Aubotol* claimed that, "EGAT responds to concerns faster than the government."

When grouped by age, gender, or income, in each subset at least 50% of the people in Moh Luang / Na Kam responded that the government did not take their concerns seriously—in none of these subdivisions did 50% or more say that the government takes their concerns seriously (see Appendix P for exact figures). Nearly a third of Moh Seri's population felt that their concerns were not taken seriously either, especially those who were not doing as well economically (for exact figures, see Appendix N). This was expounded on in the focus groups conducted in Moh Seri.

When the younger generation was asked about the government, one of the participants gave an example to illustrate his point. Several years ago, he had asked that streetlights be installed for safety reasons, but nothing was ever done. He said that it was the fault of the provincial government and not of the *pu-yai ban*. The participants in the focus group felt that Moh Seri was not important to the provincial government because it was too far away from Lampang and one of 13 *mu bans* in the *Tambon*. The *pu-yai ban* thought that some of the villagers understood the way that the government works, but that some did not. He said that the provincial government knew the problems of the village, but admitted that the processes were slow. It was possible that those who did not know the processes did not understand the amount of time it took for the government to perform its duties, and instead thought that the government did not take their concerns seriously.

The people in these villages were also polled to determine their feelings about EGAT. The first such question asked if they felt that EGAT provided enough support to their community. A resounding 75.8% of respondents in Na Sak answered "yes." According to the majority, EGAT did offer the people of Moh Luang and Na Kam

enough support, although the responses were not as consistent as in Na Sak. There was generally an even division of approximately 60% who thought that EGAT offered enough support versus 40% who thought that EGAT did not. People over 50 years of age, however, responded differently; 54% of this subset said that EGAT did not offer enough support. In Moh Seri, there were only marginal differences in responses by sex, age, and economic status for questions about the level of support EGAT provides to the community—almost everyone replied that EGAT did not provide enough support (Appendix N).

Villagers were also asked if they thought that EGAT took their concerns seriously or not. A clear majority (76%) of the villagers polled in Na Sak said “yes.” Of that group, men were slightly more likely to respond “yes” than were women. Although many written comments on the surveys noted how EGAT sometimes failed to take responsibility for their environmental transgressions, it was evident that the village people in Na Sak were generally happy with the assistance that EGAT offered on many occasions. In many ways, EGAT intervened and provided assistance when the government processes were too slow, or when the government was unable to help. In all but one case, the majority of people of Moh Luang and Na Kam felt that EGAT did take their concerns seriously, with people over 50 years of age as the one group that was evenly divided. The people of Moh Seri were less positive, and replied in most cases that EGAT did not take their concerns seriously. As shown in Appendix N, 77% of the general population felt that EGAT did not take their concerns seriously, especially: men (81%), people over 50 years of age (79%), and people who made less money after relocating (81%).

Villagers were also asked if EGAT participated in community activities. From Na Sak’s responses, it would also appear as though EGAT played the part of a

philanthropist from time to time; nearly 95.6% of respondents answered “yes.” Many of the answers contained commentary that EGAT had helped sports teams and/or Sport's Day. A similar attitude was expressed in the survey results from Moh Luang / Na Kam, where—despite categorizing by age, sex, or economic status—the clear majority of each subset felt that EGAT participated in community events. Despite the negative answers to the previous questions regarding EGAT, the people in Moh Seri were evenly divided; 50% of the total population felt that EGAT participated in community events.

Lastly, villagers were asked whether they had a positive or negative opinion of EGAT. In Na Sak, the overall opinion of EGAT was 73% positive and 7% negative. An additional 20% responded with no comment. Further analysis showed that women were more likely to answer with no comment than men, and that older people were more likely to answer with a positive response than younger people. There does not seem to be a very plausible rationale behind the gender correlation, but it could be postulated that the elder generation had more experience dealing with EGAT and thus had more positive evidence upon which to base conclusions and opinions. In almost all subsets of the population in Moh Luang and Na Kam, with the exception of the people who made less money after moving, at least half of the people had a good opinion of EGAT.

The results from Moh Seri were not as positive. Although only a few categories showed a clear majority of people having a negative opinion of EGAT, the greatest number of responses from each subset were negative. Members of the population aged 50 years or older were much more likely than younger respondents to express a negative opinion about EGAT. Elders in the population were most upset

about the social and cultural changes in the village, and it is possible that they attribute these differences to relocation and blamed EGAT.

Similarly, albeit to a lesser extent, villagers who made less money in Moh Seri than before moving were more likely to criticize EGAT than those whose income increased following the migration. It was likely that residents who were doing better after the move would have seen relocation as a positive change and be more accepting of EGAT. There was less of a clear view, however, about the villagers' opinion of EGAT because of the high number of either "no response" or "no comment." Possibly, a more explicit representation of people's feelings about EGAT would have been obtained if answers were restricted to the positive and negative

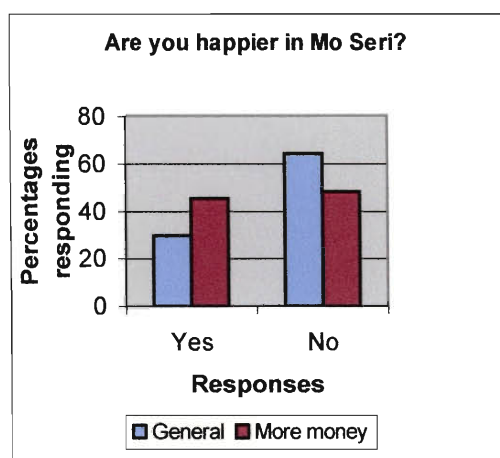


Figure 4.11 - Trends in happiness in Moh Seri by Change in Income

fields.

Two questions were included in the surveys to deduce if people were contented with the move. The people in Moh Luang / Na Kam and Moh Seri were first asked if they were happier in the new villages than they were before the move, and then if they would have preferred to stay in the new village. Due to the fact that the people in Na

Sak were never relocated, it was illogical to raise this issue to them. For Moh Luang / Na Kam, when asked if they were happier where they lived at the time or in their old village, in almost every subset of the population the majority said that they were happier where they were. The only exception was that 61% of people over 50 said that they were happier in the old village (see Appendices N, P, and R for full results). Less than one-third (29.8%) of the total respondents said that they were happier in

Moh Seri, but villagers who were making more money after relocation were much more likely to say that they were happier; these respondents were approximately 50% more likely to answer in this manner. Some differences existed in the other categories that were examined, but not nearly to such an extent. Clearly, the people in Moh Seri were very unhappy about relocation, while the people from Moh Luang and Na Kam were, for the most part, happier after moving.

The other question, would people have preferred to stay, gave the following results for Moh Luang / Na Kam: in all categories, over 60% of the villagers responded that they wanted to stay in the old village. This was consistent when compared to the figures for the previous question. The majority of the people in all categories replied that they were happier in the old village; this indicates that these people are not willing to sacrifice or overlook their unhappiness in light of the change in their village or lifestyle. Responses in Moh Seri showed similar trends as the question about happiness. As with the previous question, the only category that showed a significant difference for Moh Seri was the economic situation.

Respondents who made more money after moving were more than 50% more likely to respond that they would not have preferred to stay in the old village. For this reason, it is very probable that the economic health of the villagers had a key role in determining their attitudes and feelings about relocation. It was the opinion of the *pu-yai ban* that the majority of the residents would have preferred to stay in the old village because relatives were nearer and the people were more cooperative and helpful.

5.0 DISCUSSION AND CONCLUSIONS

In order to address the global issue of whether or not relocation is a feasible option for the future, each research question will be discussed in light of the data presented in Chapter 4. Once all of the questions have been answered, a conclusion can be reached as to whether or not relocation was successful and if it is a feasible option for the future. In the remaining sections, we submit the determinations that were made for each category, followed by conclusions and recommendations for future relocations.

5.1 DISCUSSION OF RESEARCH CATEGORIES

The following is a brief discussion and evaluation of each of the research categories in terms of the findings for the research questions. Readers seeking greater detail should consult Chapter 4 as well as Appendices M - R.

5.1.1 HEALTH EVALUATION

In general, the people of Moh Luang / Na Kam showed fewer symptoms than villagers in either of the other communities, while Moh Seri had the highest rate of resident- reported symptoms for eight of the fourteen questions. The reliability of our health data is questionable at best because the statistics regarding occurrence of symptoms for Moh Luang / Na Kam and Na Sak are three years out of date. Therefore, in order to make a more accurate assessment and to arrive at a conclusion, the most recent symptom statistics for these two sets must be compared to Moh Seri, and actual clinical data from a hospital should be examined for all three sets of villages.

In terms of healthcare, all three groups felt that their access to healthcare was good. However, the respondents from Moh Luang / Na Kam were the only ones that showed a clear majority who felt the nearest healthcare facility was close enough. A

majority in the other two villages both felt that the healthcare facilities were too far. For Na Sak, which had not been relocated, residents were asked to rate the quality of their current healthcare facility; nearly everyone responded that there was no problem with the quality of care available. Both in Moh Seri and Moh Luang / Na Kam, the respondents felt that the quality of the nearest healthcare facility improved compared to that of the old village. From this information, we can conclude that the villagers' access to adequate healthcare facilities was improved in both cases but that distance was an issue in Moh Seri.

5.1.2 ECONOMIC CONDITIONS

In order to appropriately assess the economic conditions of the relocated villages, it is necessary to answer four basic research questions. The first question deals with whether or not the relocation agreement was acceptable to both EGAT and the villagers.

Since EGAT was the driving force in the relocation projects and the projects were actually carried out, it can be assumed that EGAT found the agreement to be acceptable. However, for the villages of Moh Luang / Na Kam and Moh Seri, there was a startling reduction in amount of land available to each household, both for agricultural development and residential space. This reduction caused an economic shift from subsistence farming to wage labor and consumerism, a shift from which the residents had not yet recovered at the time of this study. Survey statistics discussed in Chapter 4 show that the majority of residents in Moh Luang / Na Kam and Moh Seri are currently employed as unskilled labor. Focus group responses validated this by explaining that little had been done to help the residents learn new skills that would help them obtain better-paying jobs. For example, in Moh Luang / Na Kam, there was mention made by the *Aubotol* that government programs existed to provide

training and trade skills. However, the cost of these programs inhibited residents from making use of them

Moh Seri residents were facing many of the same issues as Moh Luang / Na Kam with regard to economic changes. In addition, the villagers apparently felt as if they had been forced to choose the “lesser of two evils;” they chose a location that was not ideal for them economically and agriculturally. However, they felt that it was a better option than moving to Moh Luang.

Na Sak, although it had also been experiencing economic changes due to modernization and the 1997 economic crash, did not appear to have experienced the same drastic changes in occupation and lifestyle that were sustained by the relocated villages. Two findings point to this conclusion. First of all, the majority of Na Sak residents remained subsistence farmers. Secondly, Na Sak villagers appear to have had lower expectations for their standards of living and infrastructure than did those from the other two communities. The rise in most of these expectations from the other villagers would appear to have been a result of modernization and urbanization. For example, Moh Seri residents reported in focus group sessions that it was important to have their roads paved, yet Na Sak has only one paved road and rated the quality of their roads as “good.” Na Sak's stable farming economy and relative isolation from urban culture has clearly slowed the effects of urbanization.

All of this evidence points to the conclusion that the terms of agreement were not acceptable to all parties. Multiple economic and lifestyle changes occurred as a direct result of the reduction in the amount of agricultural land.

The second research question involved the maintenance of the mode and style of living for the residents. Our statistics showed that all three villages, on average, owned the same possessions. However, the majority of people from Moh Seri and

Moh Luang / Na Kam claimed to make less money than they did before the relocation, and the unemployment rate was significantly higher after relocation. Household savings, although they were slightly higher in Moh Seri than in Moh Luang / Na Kam, were relatively low even there. Having weighed all of the data from the surveys, focus groups, and observation, it is our belief that the style of living was not maintained or improved.

The third question concerned the economic health of the villages. During focus group sessions, almost all respondents from the relocated villages claimed that money was spent nearly as fast as it was made. As a result, there was little sense of economic empowerment--a feeling that the people could fend for themselves economically and improve their lives. Na Sak, on the other hand, appeared to be content with what it had and saw only minor need for improvement. This is not to say that the residents of Na Sak are complacent, but rather that the residents of Moh Seri appeared to have higher expectations than they do. In sum, it is clear that the economic health of Moh Seri and of Moh Luang / Na Kam was not improved or maintained.

The final question involved government support. Overall, no village felt that the government provided adequate support. The general opinion was that the government was slow acting, as in the case of Moh Seri where the *Aubotol* were trying to have the roads paved.

From evaluations of responses from all four questions, it was clear that the economic status of the relocated villages had deteriorated in varying degrees. It is also evident that EGAT and the agencies that planned the relocations did not take into account the drastic impact that of a transition from subsistence farming to wage labor

would have on the villagers. That lack of foresight has likely cost the affected communities some degree of economic stability for at least a generation, if not more.

5.1.3 INFRASTRUCTURE

In terms of our research questions, only one main indicator was chosen to determine the impact of infrastructure changes on the relocated residents. We specified in our research questions that the overall infrastructure (water, roads, schools, electricity, markets and recreational facilities) must be maintained at an acceptable level or improved from that which existed prior to relocation.

When the residents of Moh Seri moved, they began with nothing. Very little money was allocated by EGAT for infrastructure development and so the villagers were faced with the responsibility of funding and building much of their own infrastructure. Conversely, in Na Kam and Moh Luang, everything was provided by EGAT. Regardless, residents in both communities had the same basic opinions about the quality of their infrastructure.

Na Sak residents consistently rated their infrastructure as "good" or "fair." Because the majority of residents in Moh Luang, Na Kam and Moh Seri felt that their infrastructure was of the same quality or better than that which they had prior to relocation, it can be assumed that they were at least as satisfied with their infrastructure as the residents of Na Sak were. Consequently, it was safe to conclude that the overall infrastructure had been sufficiently maintained, and in most cases, improved.

5.1.4 ENVIRONMENTAL CONDITIONS

The environment of the communities was examined in terms of both the natural environment and immediate man-made surroundings of villagers. While most residents in Moh Luang / Na Kam felt that the quality of the water available to them

was the same or better than that of the old village, residents of Moh Seri had a much different opinion. In addition to the survey data, the focus group information about the high concentrations of iron in Moh Seri's water corroborated the responses to the quality of water question.

Although there were some differences in opinion by age, the majority of villagers in Moh Seri and Moh Luang / Na Kam felt that the quality of the air was better since relocation. A few villagers in Moh Seri even commented that they were happy to have moved because the level of pollution had decreased.

There was not one segment of either population, however, in which the majority felt that the quality of the soil and the agricultural capacity was better in the new villages. In addition to complaining that their crops did not grow as well as they had previously, the villagers were emphatic that they were no longer able to maintain the agricultural capacity necessary to support themselves due to the lack of land.

In terms of more immediate and domestic surroundings, however, villagers were generally pleased. Most residents in the new villages thought that their houses were better than the ones that they had lived in previously. Some residents complained that there was no land and so the village had become too small, but at the same time others also complained that the streets made the distances between neighbors too great.

For Moh Seri, it appears that the overall quality of the natural environment was not maintained or improved from the level it had been at in the old village. Residents were dissatisfied with the quality of water, soil, and agricultural capacity. In Moh Luang / Na Kam, however, the conclusion is more debatable. Residents were pleased with the quality of water and air, but extremely displeased with the quality of the soil and the agricultural capacity. Despite the fact that the majority of the

villagers was pleased with the quality of their homes, it is our opinion that the general state of the environment was not perceived to have been maintained or improved.

The main factor that led to our conclusion is the loss of acceptable farmland.

5.1.5 POLITICAL CLIMATE

Two questions were included on the survey to gauge the villagers' feelings about the government, and questions were raised at the focus group sessions to ascertain the people's involvement in government affairs. From the surveys, it was found that no majority in any village felt that the government offered adequate financial support. There was, however, a difference of opinion between the relocated and non-relocated villages as to whether or not the government took their concerns seriously. In Na Sak, more than half of the people surveyed felt that the government took their concerns seriously; in both Moh Luang and Na Kam, the people did not feel their concerns are taken seriously. In the focus group sessions, it was communicated to us that the villagers generally were aware of how the government works, and that they understood the appropriate channels through which to make requests. The sum total of this information allows us to make the conclusion that, while the political awareness and involvement of the villagers had not deteriorated, their faith in the government's interest in them was not solid.

5.1.6 SOCIAL CULTURE

Villagers were asked about the people that they lived with and nearby, in an attempt to determine whether or not their social ties had been severely disrupted. Participants in focus groups from both relocated communities expressed concern about and were upset with their living situations; many people stated that they did not see friends and family very often because they had moved too far away. Almost half of the residents in Moh Luang / Na Kam did not live either with or near the same

people that they had in the old village. These villagers constantly complained that there was no interaction with neighbors and that people in the village no longer talked to one another. On the other hand, residents of Moh Seri were more than twice as likely to live near their old neighbors, and also much more likely to live with the same people. Based on this data, it is our conclusion that social ties in Moh Luang / Na Kam had been severely disrupted, and that those in Moh Seri had been moderately altered.

In order to measure the social strength of the communities, villagers were asked if they regularly helped neighbors with a number of day-to-day chores and how often they spent time socializing and visiting. The responses from Na Sak, which had the highest rate of cooperation and assistance overall, were taken to represent the baseline data against which to compare Moh Luang / Na Kam and Moh Seri. Respondents in Moh Seri helped neighbors about 20% less frequently than did villagers in Na Sak. Residents of Moh Luang / Na Kam, however, helped about 20% less than in Moh Seri, and the majority of tasks received less than a 50% positive response. The percentages for the different socialization variables were roughly the same throughout the villages, but observations suggested that residents of Na Sak spent the most time visiting and talking with friends and neighbors. The sum of the above information led us to conclude that the social strength of Moh Seri was moderately weaker and that of Moh Luang / Na Kam had been drastically weakened from what it was prior to relocation.

Questions were also asked to determine the degree of cohesion that existed within the community. Residents in Moh Luang / Na Kam were least likely to participate in community construction events, and also had the lowest numbers for average yearly attendance at community and temple activities. Residents in Moh Seri

had responses similar to those from Na Sak. Although villagers in Na Sak were more likely to participate all or most of the time in construction activities, Moh Seri had the highest average attendance at events. We feel that the degree of cohesion in the community had remained relatively unchanged from what it was prior to relocation for Moh Seri, but it had deteriorated considerably in Moh Luang / Na Kam.

The final set of questions in this section attempted to ascertain the cultural life of the villagers. The first question was about the celebration of holidays, but it was inadvertently omitted from Thai version of the Moh Luang / Na Kam survey. Na Sak and Moh Seri reported roughly the same numbers of people who celebrated holidays on a regular basis. Because Moh Luang / Na Kam consistently showed a lesser degree of cooperation, cohesion, and participation, it was assumed that the residents would not celebrate as frequently as people in the other villages.

The last question assessed the frequency at which residents visit the temple. Regardless of village, the majority of respondents only went to the temple on special religious days. Although more of a distinction was evident between old and young, residents in Moh Luang / Na Kam had a lower frequency of temple attendance than did either Moh Seri or Na Sak.

Without the data from the holiday question for Moh Luang / Na Kam it is difficult to determine the changes in cultural life. However, based on the information and observations available, it is our opinion that cultural life had deteriorated from what it once was in Moh Luang / Na Kam. The responses indicate that there had been no significant change in Moh Seri since the migration took place.

In terms of the overall social culture, it is our hypothesis that two distinct cases exist here. For residents in Moh Seri, the strength of social ties, the sense of community and cohesion, and the cultural lifestyle had not been significantly

damaged in a way that is visible to an outside observer. The communities of Moh Luang / Na Kam, on the other hand, have undergone tremendous changes in their social culture whereby the previous level was not maintained or improved.

Based on the information presented above, we believe that the differences in the changes between Moh Luang / Na Kam and Moh Seri were not the result of any single factor. Rather, we feel that they were partly caused by the relocation and partly a result of the changes that occurred independently of the terms of the agreement. Residents of Moh Seri were transferred *en masse* and remained a relatively small community into which no one else moved. Moh Luang and Na Kam, on the other hand, were formed from two large sections of villages that were moved in segments and separated in the new villages. Furthermore, Moh Luang / Na Kam had experienced an influx of people seeking to capitalize on the enhanced economic opportunities available there. The combination of segregation from old friends and neighbors and the incorporation of strangers in the village had perhaps resulted in the greater deterioration of social culture than that which was found in Moh Seri.

5.1.7 SOCIAL ATTITUDES

The section dealing with social attitudes was included to gain insight into the happiness and state-of-mind of the villagers. This topic can be broken down into two subsections: feelings about EGAT, and mental and emotional state.

Although it was originally discussed in the economics section, the question about the fairness of the EGAT agreement is worth reviewing again here. The people in Moh Luang / Na Kam were relatively evenly divided. Only a slight majority responded that they felt the agreement was fair, and most people who made less money felt that it was unfair. In Moh Seri, three-quarters of the general population

felt the agreement was unfair, with little deviation from the overall statistic by age, gender, or income.

When asked other questions about EGAT, the responses from the three showed different levels of approval for the company. The most positive response came from Na Sak, where the people generally felt that EGAT offered enough support, took their concerns seriously, and the villagers had a generally positive opinion of EGAT. The responses from Moh Seri were nearly the opposite of this; an overwhelming majority felt that EGAT did not provide adequate support. An intermediate response was found in Moh Luang and Na Kam, where opinions were evenly divided.

The same basic stratification can be seen in the responses to questions about whether EGAT took people's concerns seriously or not. The majority of respondents from Na Sak felt that EGAT addressed their needs, while in Moh Seri, the majority of people did not feel EGAT listened and responded to their concerns, especially people who made under 40,000 baht a year.

Interestingly, when asked if EGAT participates in community activities, the responses were not as different among the three villages. Most of the villagers in Na Sak felt that EGAT participated in their community; the same can be said of Moh Luang / Na Kam, although there was a higher percentage of people who felt otherwise in this group. The response for Moh Seri was evenly divided.

The overall opinion of EGAT (nearly three-quarters) in Na Sak was positive. In nearly all subdivisions of the Moh Luang / Na Kam population, more than half of those surveyed had a positive opinion of EGAT--except the people who made less money after the migration. Due to the number of people who replied with "no comment," or did not reply, it is difficult to summarize the feelings of the people in

Moh Seri, although the greatest number of responses indicated a negative opinion of EGAT.

The two questions included on the Moh Luang / Na Kam and Moh Seri surveys dealing with opinions on relocation asked if the villagers were happier after the relocation, and if they would have preferred to stay in the old village. The greatest number of responses in Moh Luang and Na Kam indicated that people were happier now or at least as happy as they had been. One exception was found; people over 50 years of age were less happy after resettling. In Moh Seri, less than one-third of people responded that they were happier now after being relocated, which was confirmed by the fact that the majority of people in Moh Seri would have wanted to move back to their old village. In Moh Luang / Na Kam, a majority of the general population wanted to stay in the new village.

Several conclusions can be drawn from these results. When asked about whether the government provided adequate financial support, the majority of all three villages responded "no." The people who were moved to Moh Seri felt that the government did not take their concerns into account, and this issue must be resolved. The questions regarding EGAT showed a clear difference in the three villages; Na Sak had a generally positive opinion of EGAT, Mot Luang/Na Kam slightly less so, and Moh Seri had a strongly negative opinion of EGAT. The people in Moh Luang and Na Kam were happy and willing to stay where they were, while villagers in Moh Seri were unhappy and wanted to move back to the old village. In sum, the responses of the people surveyed strongly suggest that the way in which relocation was carried out was far from optimal from a human perspective.

5.2 CONCLUSIONS

Category	Moh Seri	Moh Luang / Na Kam
Health	Unable to determine	Unable to determine
Economics	Not successful	Not successful
Infrastructure	Initially unsuccessful	Successful
Environment	Not successful	Not successful
Politics	Not successful	Successful
Social culture	Successful	Not successful
Attitudes	Not successful	Successful

Table 5.1 – Evaluation of successes and failures of each category.

After evaluating the relocations for the two different communities in terms of the research categories, we were able to determine what we felt to be the overall success of both projects. In our opinion, neither of the projects was appropriately carried out, but that the methods used in relocating Moh Luang / Na Kam did not have as many strongly negative impacts as did those used in moving Moh Seri. Therefore, it is our conclusion that the techniques used in Moh Luang / Na Kam show greater potential for improvement and could be possibly utilized in the future.

After we examined all of the topics, it was apparent that the stipulations of only one of the research categories were met. Although we feel that the social culture of the community is very important, success in that single category is not enough to outweigh the shortcomings in the other areas. There were many shortcomings for Moh Luang / Na Kam as well, but overall the relocation project can be judged as marginally successful for them. Although the economics and the environment of the village deteriorated, the parameters included in the other categories were maintained or improved. The only category in which the changes were questionable was the social culture area. Residents of Moh Luang / Na Kam showed a lower level of assistance and support, a lesser degree of cohesion, and lower attendance at community events than those of Na Sak. However, we decided that it was

inappropriate to include this category in our evaluation for Moh Luang / Na Kam because the changes cannot be unequivocally attributed to the relocation. In order to make an assessment more research would be needed.

That the relocation of Moh Luang / Na Kam was at least a partial success suggests that relocation can be viable when carried out properly, and consequently answers our basic research question, “Is relocation acceptable and feasible for the future?” This is not to say that all methods of relocation are acceptable; rather, there are a number of issues that need to be identified and addressed before any people are moved and communities disrupted.

5.3 RECOMMENDATIONS

As more and more nations continue to industrialize, environmental degradation will progressively become an important issue. The rapid and increased development and ensuing degradation will also bring the issue of relocation to the forefront in many nations. Although many options have been explored to accommodate these changes, the resettlement of people remains one of the most widely used. Relocation, however, is intrusive by nature and can greatly disrupt the lives of those who are moved. If proper precautions are taken it is possible that all parties involved may benefit. Therefore, every possible effort must be made to minimize the damage to effected peoples, while not compromising the benefits of industrial development.

5.3.1 RECOMMENDATIONS FOR FUTURE PROJECTS

At a bare minimum, we recommend that EGAT, as well as any other organization or agency considering relocation projects, thoroughly examine the parameters that we have single out (i.e., health, economics, infrastructure, politics, environment, social culture, and social attitudes). After a study of these topics has

the villagers prior to relocation is maintained or improved once they have been resettled. This will provide the best chance that a relocation project is successful and that the needs of the people are met. Furthermore, we recommend that relocating agencies follow all of the guidelines established by organizations such as the World Bank and the Inter-American Development Bank, and only carry out relocation projects in ways that allow for those criteria to be met.

5.3.2. RECOMMENDATIONS FOR FUTURE STUDY

Lastly, our recommendations for future study include a revised, more in-depth evaluation of all the criteria we initially selected. In terms of health and healthcare, substantial conclusions should not be made without first examining clinical health data gathered by a trained healthcare professional. To determine the changes in economic structure, a comparison of salary and cost of living expenses before and after relocation should be made as well as a determination of the changes, if any, in economic levels. An important topic to inspect under infrastructure would be the changes in the rate of infrastructure development. More quantitative data regarding political involvement and awareness would be useful, such as the participation rate in elections, and the attendance rate at political meetings. Physical laboratory data about the soil, air, and water quality would be needed in order to provide a more substantial assessment of the changes in environment.

A more comprehensive section covering mental health and social well-being should also be incorporated. In addition, it would be prudent to ask the residents how they would prioritize their needs. For example, would people be willing to own and farm 100 rai of land if it meant being several kilometers away from their nearest neighbor? Or, does the benefit of having old neighbors and relatives close by outweigh the drawback of having to buy bottled water? Would they be happier living

in a village where there was an adequate amount of farmland, or would they sacrifice that farmland to be closer to a modern hospital? These types of questions, ones that ask people to prioritize the aspects of their lifestyle, would provide better insight into how to develop a relocation agreement that is acceptable to both the relocating agency and the people to be moved.

ANNOTATED REFERENCE LIST

“Advanced PCFB Technology on Show at McIntosh Unit 4. (Lakeland, Florida; Pressurized Circulating Fluidized Bed).” *Modern Power Systems* 17. 3 (1997): Accessed: 11/23/99. <<http://www.elibrary.com/>>

This article provides an example of how Pressurized Circulating Fluidized-Bed can be applied, and what the costs and benefits of this technology.

Anchalee Kongrut and Ploenpote Attakor. “Power Plant Installing Sulfur Scrubbers in Bid to Put an End to Air Pollution.” *Bangkok Post* 07 Jan. 1999: main 4.

This brief article discusses EGAT’s plans to install scrubbers to reduce the sulfur dioxide pollution levels at Mae Moh.

Anchalee Kongrut, and Vasana Chinvarakorn. Editorial. *Bangkok Post* 26 Dec. 1998: outlook 1.

This commentary illustrates cases of strong resident opposition to the construction of power plants in their communities. Particularly interesting to note is the comment from plant officials that the residents would not suffer like those in Mae Moh had.

Atkinson, Nicola. “Environmental Policy and Management in Asia: A Learning Experience.” *Journal of Environmental Assessment Policy and Management* 1 (1999): 81-104.

This article serves as good background to theories of environmental management as they apply to the East and the West. The experience of Asia is briefly

discussed and the implications considered. Two additional articles from the references cited in the paper will be investigated.

Blasting, Terence J., Robert L. Miller, and Lance N. McCold. "Potential Consequences of the Clean Coal Program for Air and Waste Issues." *Air & Waste Management Association* 46 (1996): 517-529.

In this article, a full and critical summary of most clean coal technologies is presented, in light of the environmental impact of various wastes. In addition, these technologies are evaluated with respect to the Clean Air Act Amendment of 1990.

BOFEP: The Bay of Fundy Ecosystem Partnership Homepage. Accessed: 9 Dec. 1999

<http://www.auracom.com/~bofep/>.

The Bay of Fundy Ecosystem Partnership (BOFEP) is an environmental organization that looks to preserve and protect the wildlife and ecology of the Bay of Fundy in Canada. It was this reference that provided us with further information about tidal power and the proposed tidal power plant at the site, which has never actually come to realization.

Boosong Kositchotethana. "The power and the glory." *The Bangkok Post*. Accessed: 14 Nov. 1999. <http://www.bangkokpost.net/99mideco/99mye18.html>.

This article, from the Bangkok Post Mid-year Economic Review, describes a battle between the EGAT labor union and the company over the proposed sale of one of its largest gas-powered generating facilities. For the purposes of this project, the document provides a significant amount of relevant information regarding EGAT's

business operations, as well as general perceptions of the Thai people and EGAT workers towards the corporation.

Boosong Kositchotethana. "Sliding Demand." *Bangkok Post*. Updated: 30 Jun 1999.

Accessed: 12 Nov. 1999. <http://www.bangkokpost.net/99mideco/99mye19.html>

This article is also part of the semi-annual economic profile of the nation. It provides important information about EGAT and the energy needs and supplies of Thailand.

Boubel, Richard W., Donald L. Fox, D. Bruce Turner, and Arthur C. Stern. *Fundamentals of Air Pollution Third Edition*. San Diego: Academic Press, 1994.

In this source a minimal description of the effects of air pollution on humans, plants, animals, structures, soil, and water can be found. This book also provides a brief description of different pollution control technologies.

Bretz, Elizabeth A. "CAA Phase-I Scrubbers—What Utilities Chose." *Electrical World* 208 (1994): 23-29.

Different coal power plants are considered in this article, and how they each chose to meet the requirements of Phase I of the Clean Air Act. For the most part, this article focuses on Flue Gas Desulfurization (FGD), also called "scrubbers," which allow for up to 90% removal of sulfur dioxide.

Bretz, Elizabeth A. "Clean-Coal Technologies: A Status Report." *Electrical World* 206 (1992): 37-53.

In this report, different methods of cleaning coal—before, during, and after combustion—are presented. Although these technologies were not implemented on a commercial scale, all demonstrations were large enough to provide sound, reliable data.

Brown, John R. “Pure Air’s Advanced Flue Gas Desulfurization Clean Coal Project.”

Environmental Progress 17 (1998): 173-182.

A new version of Flue Gas Desulfurization is examined as a means of reducing sulfur dioxide emission, and a brief explanation of previous methods of FGD are related. The new version has shown higher removal of sulfur dioxide. This article also examines which factors—temperature, sulfur content, and stoichiometric ratio of Ca/SO₂—result in the best sulfur removal.

DeMoss, Timothy B. “Deregulation Can Play Savior or Spoiler for Clean Coal Progress.”

Power Engineering 101 (1997): 17-23.

Integrated Gas Combustion Cycle (IGCC) and Pressurized Fluid-Bed Combustion (PFBC) are presented in this article. In addition to citing current plants implementing these technologies, the author includes research and development issues, and goals for waste reduction by the year 2010.

Dunn, Tony. “Rapid Rural Appraisal: A description of the methodology and its application in teaching and research at Charles Stuart University.” *Rural Society* 4 (1994): 3-4.

This article served as an introduction to a particular method of observational study that we utilized in our field work.

EGAT: Webpages Found on the OSTC Homepage <<http://www.ostc-was.org/>>

General Information from EGAT: Introduction. Office of Science & Technology.

Accessed: 14 Nov. 1999 <<http://www.ostc-was.org/energy/introduction.html>>.

This page serves as an introduction to EGAT, explaining the origins of the corporation and its current goals.

General Information from EGAT: Demand Side Management & Integrated Resource

Planning. Office of Science & Technology. Accessed: 14 Nov. 1999

<<http://www.ostc-was.org/energy/demand.html>>.

This document provides information on conservation efforts initiated by EGAT, MEA, PEA and the National Energy Administration (NEA). Both a pilot program and a long-term solution are discussed in detail.

General Information from EGAT: Fuel Options. Office of Science & Technology.

Accessed: 14 Nov. 1999 <<http://www.ostc-was.org/energy/fuel.html>>

This web page contains information on the different fuel options for electricity supply that EGAT has considered for long-term. It gives basic details about each of the options and explains how they relate to Thailand and EGAT.

General Information from EGAT: Load Forecast. Office of Science & Technology.

Accessed: 14 Nov. 1999 <<http://www.ostc-was.org/energy/load.html>>

This document briefly outlines energy consumption and load statistics pertaining to Thailand and EGAT. It also defines a group known as the Thailand Load Forecast Subcommittee.

General Information from EGAT: Methodology, Generation Planning Criteria and Assumptions. Office of Science & Technology. Accessed: 14 Nov. 1999 <<http://www.ostc-was.org/energy/method.html>>.

This document explains EGAT's methodology for choosing where and when to build new plants, as well how and when to purchase electricity from other sources. It takes into account needs, as well as redundancies.

General Information from EGAT: The Power Development Plan. Office of Science & Technology. Accessed: 14 Nov. 1999 <<http://www.ostc-was.org/energy/pdp.html>>.

This document is a brief summary of a 17-year power program designed to "make optimal use of energy resources through interconnection of the various regions." The PDP is a complete re-evaluation of EGAT's practices and power sources.

EPA Fact Sheet: Love Canal. Accessed 9 Dec. 1999

<http://www.epa.gov/region02/superfnd/site_sum/0201290c.htm>.

This page provided us with current facts about the Love Canal situation, directly from the EPA's Superfund project

Involuntary Resettlement OP-710. Accessed 11 Dec. 1999

<<http://www.iadb.org/cont/ploi/OP-710E.htm>>.

This page provided us with an extensive description of various guidelines for the involuntary resettlement of people around the world.

Karliner, Joshua. "The Environment Industry: Profiting from Pollution." *Ecologist* 24 (1994): 59-63.

While this article contained no information directly pertinent to Mae Moh or even Thailand, it did provide an interesting perspective on the motives of industry and the government in cleaning up the environment that will serve this project well to consider.

Kaufman, Eric N., and Charles D. Scott. "Liquefy Coal with Enzyme Catalysts." *Chemtech* 24 (1994): 27-32.

This article explores the option of using enzymes and bacteria to liquefy coal into cleaner burning liquid or gas fuels. The issues addressed include designing an appropriate reactor, and modifying the enzymes to work at mild conditions of temperature, pressure, and pH.

Khan, W. Z., and B. M. Gibbs. "SO_x Emissions from a Fluidized-Bed Combuster With and Without Limestone Addition." *Energy* 21 (1996): 105-113.

This article examines the effect that different variables—temperature, liquid-to-gas ratio, fluidizing velocity, axial concentration, and amount of air—have on sulfur dioxide emissions. Limestone is typically added to act as a sorbent and remove sulfur dioxide.

Klausner, William. *Reflections on Thai Culture: Collected Writings of William J. Klausner*. Bangkok: Siam Society 1993.

In this book, Klausner provides an excellent overview of Thai social attitudes. Especially apropos for this project are the selections about conflict resolution and settling disputes.

Krupa, Sagar V. *Air Pollution, People, and Plants*. St. Paul: University of Minnesota St. Paul, 1997.

This book proves to be a valuable resource for the effects of different pollutants on humans, as well as agriculture, the environment, and wildlife. Also present in this book are strategies for air pollution control.

Leightner, Jonathan E. "Weather-induced Changes in the Tradeoff Between SO₂ and NO_x at Large Power Plants." *Energy Economics* 21 (1999): 239-259.

This paper provides a very good overview about the effects of the plant on Mae Moh and some basic information on the community. Furthermore, it discusses the implications of the desulfurization plants EGAT plans to install as well as the implications of the climate on mitigation efforts. Moreover, this paper cites a number of works extremely pertinent to this project, in particular a book by the same author entitled The Economic Impact of EGAT Mae Moh on Lampang Province in Thailand. Several others will be also be examined.

LNG Express: What is Liquefied Natural Gas? Accessed: 9 Dec. 1999

<<http://www.lngexpress.com/welcome.htm>>.

This page provided us with an understanding of Liquefied Natural Gas.

Love Canal Collection. Accessed: 9 Dec. 1999

<<http://ublib.buffalo.edu/libraries/projects/lovecanal/>>

The Love Canal Collection is a special collection of the University of Buffalo library. It provided us with a significant amount of details, including timelines and up-to-date information on the Love Canal crisis and project.

Moore, Curtis A. "Poisons in the Air." *International Wildlife* (1995) 25, 38-46.

Moore gives an excellent, albeit elementary, overview of the different types of air pollution and their effects on people.

Morgan, M. Granger, ed. *Energy and Man: Technical and Social Aspects of Energy*. NY: IEEE Press, 1975.

This book, although ancient by technology standards, provides a very basic understanding of the different types of power generation techniques. Out of date items were further researched and updated using web resources.

"Panel Nudges EGAT on Pollution." *Bangkok Post* 16 Feb. 1999: main, 4.

Of importance in this article is the claim by the government that EGAT should "urgently relocate the villagers."

Ploenpote Atthakor. "New Standard PEG Emission Levels at EGAT Power Plants

EnvironmentBoard Declares Generation a Source of Pollution." *The Bangkok Post* 26

Aug 1999: main 2.

This article provided the first definite information on the formulation of emissions standards for plants operated by EGAT.

Readers' Digest. *Guide to Places of the World*. London: Readers' Digest Association 1987.

This book provided basic information on the size and location of Mae Moh.

Rose, Adam, and Amit Mor. "Economic Incentives for Clean Coal Technology Deployment." *Energy Policy* 21 (1993): 668-678.

A brief review of American policies such as the Clean Air Act and Clean Air Act Amendment of 1990, as well as an evaluation of different incentive programs are reviewed in this article. Also, different economic incentive plans are analyzed, such as a market approach, and fiscal incentives.

Shrestha, Ram M., Bhattacharya, S.C., and Malla, Sunil. "Energy Use and Sulfur Dioxide Emissions in Asia." *Journal of Environmental Management* 46 (1994): 359-372.

Shrestha et al. compare the emissions load of sulfur dioxide to energy use in 22 different Asian countries. Although the article is from 1994 it served as a means to place Thailand in context with the region. The discussion about the fuels used in Asia was of particular interest as well.

Smil, Vaclav. "China Shoulders the Cost of Environmental Change." *Environment* 39 (1997): 6.

In this article the actual cost of air pollution—in terms of healthcare costs and crop loss—is presented.

Social Analysis and Resettlement as Part of Environmental Assessment. Accessed 3Dec99

<<http://www.his.com/~mesas/socanal.htm>>.

This page gave a brief description of some of the World Bank's guidelines for involuntary relocation.

Somsak Suskai. "EGAT Told to Help Mae Moh Folk." *Bangkok Post* 07 Feb 1999: main 2.

The Bangkok Post reported the demands placed upon EGAT to help those affected by the pollution from the lignite plant.

Somsak Suskai "Mae Moh Villagers File Lawsuit." *Bangkok Post* 16 Jul 1999: main 2.

One of the newest developments in the on-going conflict with Mae Moh is the recent lawsuit that residents have filed. It is an important event to note since that is not a traditional means of resolving conflicts in Thailand.

Somsak Suskai. "Panel Affirms Decision to Shift Villages." *Bangkok Post* 09 May 1999: main 2.

This is yet another article documenting the continual policy change concerning the relocation of villagers in Mae Moh. It is mentioned that residents of an additional thirteen communities would be resettled if the first attempt fails well.

Somsak Suskai. "U-turn on Relocation of Villagers." *Bangkok Post* 01 Apr. 1999: main 2.

Somsak discusses the introduction of air quality controls to Mae Moh instead of relocation as a means of mitigating the environmental effects on the residents.

Soonruth Bunyamanee. "Bouncing Back?" *Bangkok Post*. Updated: 30 Jun 1999. Accessed: 12 Nov. 1999. <<http://www.bangkokpost.net/99mideco/99myel.html>>

This is one section of the Bangkok Post's semi-annual economic review of the country. It provides a good framework for viewing the energy industry and its motivations in pollution control.

"Sub-bituminous Coal Yields a Clean Fuel." *Chemical Engineering* 104 (1997): 27.

This brief paragraph describes a method used in Japan to produce a clean fuel from low-grade coal. It claims that dimethyl ether can be synthesized and used as a clean-burning fuel.

Taylor, David. "Trade-offs in Thailand." *Environmental Health Perspective* 104 (1996). Accessed: 11/10/99. <<http://ehpnet1.niehs.nih.gov/docs/>>

In this online article, Taylor presents an evaluation of Thailand's industrial development over the past thirty years. The impacts on air and water quality, the effects on the "hill tribes" of the north, and how Thais are dealing with these problems are presented here.

Tired. Letter. *Bangkok Post* 12 Dec 1998, main: 11.

This letter to the editor provided a startling account of violence during a protest in Thailand and a view of Thai behavior that is contrary to popular opinion.

The 20th Anniversary of Love Canal. Accessed: 9 Dec. 1999

<<http://www.essential.org/cchw/lovcanal/lcindex.html>>

The Anniversary site was one of the best general overviews of the love canal story. Its text helped us to better understand voluntary relocation.

Veera Prateepchaikul. Editorial. *Bangkok Post* 15 Dec. 1998: main 15.

This editorial provides a comment on violent protests in Thailand, bringing a perspective to Thai behavior and the attitude to conflict resolution that one is not inclined to consider.

Wasant Techawongtham. "Villagers Won't Be Relocated." *Bangkok Post* 22 Feb. 1999: main 1.

Contrary to an article from the week before, the government claims that the relocation of villagers is not an option.

Wasant Techawongtham. "The State Doesn't Respond to Begging." *Bangkok Post*.

Updated: 31 Jul 1998. Accessed: 10 Nov. 1999.

<<http://www.bkkpost.samarat.co.th/news/>>

This article is a comment on the government's stance toward the situation in Mae Moh and the plight of the residents there.

White, David. "IGCC: Poised for Growth?" *Modern Power Systems* 18 (1998): 25-34.

Integrated Gasification Combined Cycle (IGCC) is shown to help reduce pollution at a coal plant in the Netherlands, and various other gasification-implementing plants worldwide are reviewed. A comprehensive review of the benefits and disadvantages of IGCC is also presented.

Appendix A
Maps of Amphoe Mae Moh

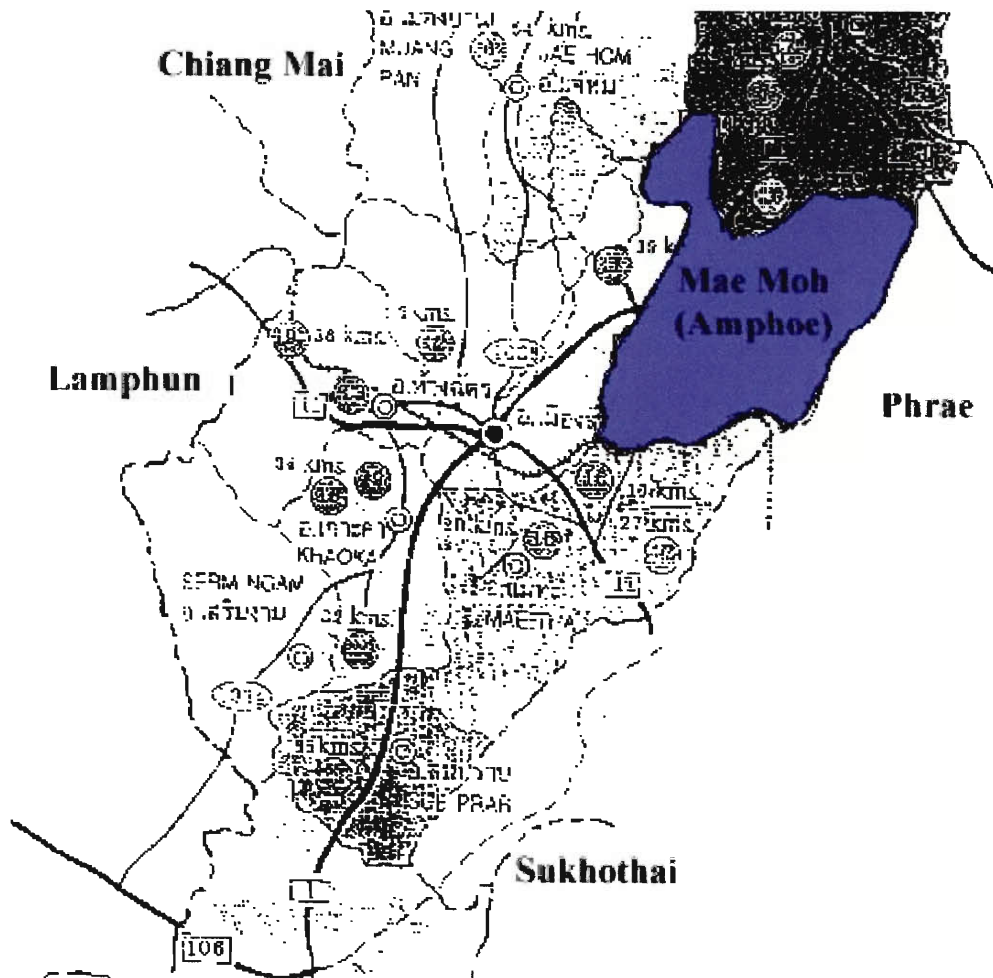
Map of Amphoe Mae Moh

Source: Mae Moh Project Team, Chulalongkorn University



Map of Northern Thailand

Source: Mae Moh Project Team, Chulalongkorn University



Appendix B
EGAT Relocation Projects Document
English and Thai Versions

EGAT Relocation Projects

Summary of original Thai Language Document

1. Relocation Project #1 - Stacks 1-3

No data available for this project.

2. Relocation Project #2 - Mae Chang Reservoir

Endorsed by the cabinet: 19 Aug 2523 (1980)

Number of Families 161

Vacated land: 7,500 rai

New land allocated: 5,700 rai

Total Property reimbursement: 17.420 million baht

Total Land Preparation Costs: 61.232 million baht

Total Cost: 78.652 million baht

Notes: 161 Families were moved from an area of Tambon Na Sak known as "Sobmum" in order to make room for the Mae Chang Reservoir. These families were relocated to a new village within the Tambon and the village was given a new name.

3. Relocation Project #3 - Stacks 4-7

Endorsed by the cabinet: 28 June 2526 (1983)

Number of Families 383

Vacated land: 2,400 rai

New land allocated: 1,400 rai

Total Property reimbursement: 59.941 million baht

Total Land Preparation Costs: 21.442 million baht

Total Cost: 81.383 million baht

Notes: 383 families were relocated from an area known as "Na Kam" in order to make room for stacks 4-7. EGAT prepared 1,400 rai on one side of Mae Moh Palat Road for them to live. The new village was also named Na Kam and now houses the re-constructed Mae Moh Hospital and Mae Moh / Na Kam Market.

4. Relocation Project #4 - Stacks 8-9

Endorsed by the cabinet: 29 December 2530 (1987)

Number of Families 1,796

Vacated land: 18,000 rai

New land allocated: 1,945 rai

Total Property reimbursement: 471.764 million baht

Total Land Preparation Costs: 494.958 million baht

Total Cost: 966.722 million baht

Notes: 1,796 Families were relocated from an area known as Moh Luang in order to make room for stacks 8-9. 1,796 rai of land was prepared on the opposing side of Mae Moh Palat Road for the project. The new area was also named Moh

Luang and the Tambon office building, meeting hall and school were also re-constructed on the property.

5. Relocation Project #5 - Stacks 10-11

Endorsed by the cabinet: 29 January 2539 (1996)

Number of Families 292

Vacated land: 200 rai

New land allocated: 73 rai

Total Property reimbursement: 92.934 million baht

Total Land Preparation Costs: 0.00 baht

Total Cost: 92.934 million baht

Notes: An additional 292 families were relocated from a hill tribe area in the old Na Kam to the new Na Kam in southern Mae Moh Tambon. This was done in order to make room for stacks 10-11.

6. Relocation Project #6 - Stacks 12-13

- No data available for this project.

1.

สรุปการอพยพและจัดที่ดินให้แก่ราษฎร อำเภอแม่เมาะ
ตามโครงการของการไฟฟ้าฝ่ายผลิตแห่งประเทศไทย

1. โครงการขยายเหมืองแม่เมาะ ระยะที่ 1 สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 1-3
- ไม่มีข้อมูล *Moved For stacks 1-3*
- No information

2. โครงการแปลง

- ดำเนินการตามมติ ครม. เมื่อวันที่ 19 ส.ค. 2523 *Aug cabinet endorsed year decision*
- อพยพราษฎรออกจากพื้นที่หมู่บ้านลุมพิก สบหลวง ด.นาสัก เนื้อที่ประมาณ 7,500 ไร่ *old vai*
จำนวน 161 ครอบครัว *Families moved to build reservoir*
- จัดสรรพื้นที่ให้ราษฎรอพยพ จำนวน 5,700 ไร่ 161 ครอบครัว *New vai*
- ค่าทดแทนทรัพย์สิน 17.420 ล้านบาท *Families*
- ค่าจัดสรรที่ดิน 61.232 ล้านบาท *Total money spent by egat for property + assets*
- รวม 78.652 ล้านบาท *land pres (newland) Total*

Na Kam?
Mae Chang
(Na Sak) moved to
Mae Chang
Reservoir

1980

3. โครงการขยายเหมืองแม่เมาะ ระยะที่ 2 สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 4-7 *stacks*

- ดำเนินการตามมติ ครม. เมื่อวันที่ 28 มิถุนายน 2526 *28 June year cabinet endorsed*
- อพยพราษฎรออกจากพื้นที่หมู่บ้านท่าปะดุน-นาแถม เนื้อที่ประมาณ 2,400 ไร่ *vai*
จำนวน 383 ครอบครัว *families*
- จัดสรรพื้นที่ให้แก่ราษฎรอพยพ จำนวน 1,400 ไร่ 383 ราย/ครอบครัว *Rai*
- ค่าทดแทนทรัพย์สิน 59.941 ล้านบาท
- ค่าจัดสรรที่ดิน 21.442 ล้านบาท
- รวม 81.383 ล้านบาท

Na Kam

1983

4. โครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 8-9 *stacks*

- ดำเนินการตามมติ ครม. เมื่อวันที่ 29 ธันวาคม 2530 *dec*
- อพยพราษฎรออกจากพื้นที่หมู่บ้านเกาะหลวง.หางสูง.ห้วยเป็ด เนื้อที่ประมาณ 18,000 ไร่
จำนวน 1,796 ครอบครัว
- จัดสรรพื้นที่ให้แก่ราษฎรอพยพ จำนวน 1,945.95 ไร่ 1,796 ครอบครัว *Families*
- ค่าทดแทนทรัพย์สิน 471.764 ล้านบาท
- ค่าจัดสรรที่ดิน 494.958 ล้านบาท
- รวม 966.722 ล้านบาท

Moh Luang?

1987

2

5. โครงการขยายเมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 10-11 *stacks*

- ดำเนินการตามมติ ครม. เมื่อวันที่ 29 มกราคม 2539 *Jan 2539*
- อพยพรราษฎรออกจากพื้นที่หมู่บ้านเวียงสวรรค์และบ้านล่าง *Weng = Sawan Ban Lang* เนื้อที่ประมาณ 200 ไร่
- จำนวน 292 ครอบครัว *ended-up part of Nakam (maybe tribes)*
- จัดสรรพื้นที่ให้แก่ราษฎรอพยพ จำนวน 73 ไร่ 292 ครอบครัว *73 rai house*
- ค่าทดแทนทรัพย์สิน 92,934 ล้านบาท *Property*
- ค่าจัดสรรที่ดิน - ล้านบาท *Land prep*
- รวม 92,934 ล้านบาท *Total*

1996

6. โครงการขยายเมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 12-13

- ไม่มีข้อมูล ? - *No data*

เอกสารอ้างอิง

References

- รูปการจัดที่ดินให้ราษฎรอพยพ โครงการของ กฟผ. ฝ่ายที่ดิน กฟผ.
- รายงานฉบับสมบูรณ์การศึกษาสิ่งแวดล้อมฯ โครงการจัดการส่งน้ำแม่เมาะ สถาบันวิจัยวิทยาศาสตร์และเทคโนโลยีแห่งประเทศไทย
- รายงานการดำเนินงานหมู่บ้านท่าปะดุน-นาแรม โครงการขยายเมืองแม่เมาะ ระยะเวลาที่ 2 ฝ่ายปฏิบัติการเหมือง กฟผ.
- สรุปข้อมูลสถิติงานจัดกรรมสิทธิ์ โครงการขยายเมืองแม่เมาะ สำหรับโรงไฟฟ้า เครื่องที่ 8 และ 9 ฝ่ายก่อสร้างพลังงาน กฟผ.

หมายเหตุ
Remarks

Moved to #3 - Nakam
ลำดับ 3-5 อพยพรราษฎรไปอยู่ในที่จัดสรรแห่งใหม่
Equal prepared near Mahapalat Rd.
บริเวณที่จัดสรรบ้านท่าปะดุน-นาแรม ถนนแม่เมาะ-นาลาด
หมู่ที่ 7 หมู่ที่ 8 ตำบลแม่เมาะ อำเภอแม่เมาะ จังหวัดลำปาง
Mos 7 + 8
UK ML

ตุลาคม 2541

มอส-มม. ,มกจมม. ,ฝบม. ,กฟผ.

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10/07/11

ได้ Volume - 54 หน้า

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3A
รูปถ่าย
121/1001 11/01/15
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1000/15

1000/15

สรุปการขอขออนุญาตและจัดรายการเข้าที่จัดสรร โครงการขยายเหมืองแม่เมาะ ลำโพงแม่เมาะ จังหวัดลำปาง

ลำดับ	รายการ	โครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 4-7	โครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 8-9	โครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 10-11	หมายเหตุ
1.	ที่ตั้งโครงการ ตำบล ลำโพง จังหวัด	ค.แม่เมาะ อ.แม่เมาะ จ.ลำปาง	ค.แม่เมาะ, ค.บ้านคง อ.แม่เมาะ จ.ลำปาง	ค.แม่เมาะ อ.แม่เมาะ จ.ลำปาง	
2.	หมู่บ้านและจำนวนราษฎรที่อพยพ	หมู่ 2 ค.แม่เมาะ 394 ครอบครั (หมู่บ้านท่าประจักษ์และหมู่บ้านจวนธรม)	หมู่ที่ 1 ค.แม่เมาะ (บ้านเกาะทอง,บ้านมอน, บ้านหัวทุ่ง) หมู่ที่ 3 ค.แม่เมาะ (บ้านนางนุญ) หมู่ที่ 8 ค.แม่เมาะ (บ้านหัวเป็ด) หมู่ที่ 1 ค.บ้านคง (บ้านหัวฝ้าย) 2041 ครอบครั	หมู่ที่ 2 ค.แม่เมาะ (บ้านเวียงสวรรค์-บ้านอ่าง) 398 ครอบครั	
3.	พื้นที่จัดสรรให้พนักงาน <i>Doc from Ministry of forestry allowed about 5000 rai to be used by eget for NK + ML</i>	หนังสืออนุญาต กรมป่าไม้ เลขที่ 50 จ.บ.ที่ 57 เมื่อวันที่ 11/999/ไร่ อนุญาตเพื่อใช้ประโยชน์ในการใช้ดินเพื่อขุดพบซากโครงกระดูกขยายเหมืองแม่เมาะจนกว่าจะหมดความจำเป็น หนังสืออนุญาต กรมป่าไม้ เลขที่ 50 จ.บ.ที่ 58 เนื้อที่ 26,069-3-82 ไร่ อนุญาตเพื่อใช้ประโยชน์ในการทำเหมืองถ่านหิน โครงการขยายเหมืองแม่เมาะจนกว่าจะหมดความจำเป็น	พื้นที่เดียวกับโครงการ 4-7	พื้นที่เดียวกับโครงการ 4-7	
4.	กรณีขอขออนุญาตขุดแร่ที่สิน <i>About 25000 rai for mining</i>	คณะอนุกรรมการประสานงานอพยพ โครงการขยายเหมืองแม่เมาะประกอบด้วยอนุกรรมการ 14 ท่าน โดยมีเจ้าพนักงานที่ดินจังหวัดเป็นประธานฯ แต่งตั้งโดยคณะกรรมการกำหนดค่าทดแทนที่ทรัพย์สิน โครงการขยายเหมืองแม่เมาะ	คณะกรรมการประสานงานอพยพราษฎร คณะกรรมการกำหนดค่าทดแทนที่ดินและทรัพย์สิน โครงการฯ 8-9 ต่อมาเปลี่ยนเป็นคณะกรรมการพิจารณาช่วยเหลือราษฎรที่ได้รับผลกระทบ จากโครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ จังหวัดลำปาง แต่งตั้งโดยคณะรัฐมนตรี ตามมติเมื่อวันที่ 29 ธันวาคม 2530 ต่อมาได้มีคำสั่งสำนักนายกรัฐมนตรีที่ 106/2536 ลงวันที่ 1 ธันวาคม 2536 และคำสั่งสำนักนายกรัฐมนตรีที่ 50/2537 ลงวันที่ 13 พฤษภาคม 2537 เรื่อง แต่งตั้งคณะกรรมการพิจารณาช่วยเหลือราษฎรที่ได้รับผลกระทบจากโครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ จังหวัดลำปาง	เหมือนกับโครงการ 8-9	

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ลำดับ	รายการ	โครงการขยายหม้อหม้อแม่เกาะ สำหรับโรงไฟฟ้าแม่เกาะ เครื่องที่ 4-7	โครงการขยายหม้อหม้อแม่เกาะ สำหรับโรงไฟฟ้าแม่เกาะ เครื่องที่ 8-9	โครงการขยายหม้อหม้อแม่เกาะ สำหรับโรงไฟฟ้าแม่เกาะ เครื่องที่ 10-11	หมายเหตุ
				<p>ให้ความช่วยเหลือที่จัดสรรขนาด 50 ตารางวาต่อครอบครัว ดังนี้</p> <p>2.1 คารย้ายทะเบียนบ้านของราษฎรหลังวันที่ 10 พฤศจิกายน 2534 และเป็นการย้ายภายในพื้นที่หมู่ที่ 2 ต.แม่เกาะ อ.แม่เกาะ จ.ลำปาง และราษฎรได้อาศัยแยกโดยต่อเนื่อง</p> <p>2.2 ราษฎรที่ผู้รักษาบริเวณอนุญาตให้เช่าอยู่ในพื้นที่จะถือกรรมสิทธิ์เป็นทายาทหรือเป็นคู่สมรสของทายาทของราษฎรผู้ได้รับอนุญาตตามแนบเดิมแยกออกเป็น 2 กรณี คือ</p> <p>2.2.1 กรณีราษฎรผู้ได้รับอนุญาตเดิมได้รับที่จัดสรรแล้ว</p> <p>2.2.2 กรณีราษฎรผู้ได้รับอนุญาตเดิมยังไม่ได้รับที่จัดสรร</p> <p>การซื้อรายหรือครอบครองบ้านเรือนของราษฎรจะต้องเป็นการซื้อขายหรือครอบครองก่อนเดือนมิถุนายน 2531 ตามมติที่ประชุมคณะกรรมการประสานงานลพพราษฎรครั้งที่ 1/2536 เมื่อวันที่ 27 สิงหาคม 2536</p>	
6.	จำนวนราษฎรที่ได้รับที่จัดสรร	363 ครอบครัว	1,483 ครอบครัว	292 ครอบครัว	
7.	จำนวนพื้นที่ที่ได้รับที่จัดสรร แปลงที่อยู่อาศัย (ไร่) แปลงที่ทำกิน (ไร่)	1 ไร่ 6 ไร่	3 ไร่ 1 ไร่	100 ตารางวา 80 ตารางวา 50 ตารางวา	<p>1. กรณีที่ราษฎรคุณสมบัติไม่ครบถ้วนคณะกรรมการ ให้ความช่วยเหลือโดยอนุมัติผ่อนผันกันไปคือ 1 ไร่, 100 ตารางวา, 80 ตารางวา, 60 ตารางวาและ 40 ตารางวา</p> <p>2. กรณีราษฎรไม่พร้อมที่จัดสรร จ่ายเงินค่าทดแทนกรณีพิเศษให้แก่ราษฎรที่มีคุณสมบัติครบถ้วนร้อยละ 120,000 บาท ส่วนกรณีมีราษฎรคุณสมบัติไม่ครบถ้วนค่าทดแทนให้ตามสิทธิที่ได้รับที่จัดสรรตามข้อ 1</p>

As

ลำดับ	รายการ	โครงการขอเหมืองแร่ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 4-7	โครงการขุดเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 8-9	โครงการขุดเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะ เครื่องที่ 10-11	หมายเหตุ
8.	หลักเกณฑ์ขุดเปิดพื้นที่สำหรับราชการได้รับ พิจารณา	บุคคลผู้ได้รับที่จัดสรรจะต้องทำประโยชน์ด้วยตนเองห้ามโอนสิทธิ์หรือให้บุคคลอื่นเช่า เว้นแต่ยกทอดโดยทางมรดก เมื่อได้รับการจัดสรรที่ดินแล้ว ต้องอยู่อาศัยและทำกินเป็นประจำในที่ดินนั้นโดยไม่ทอดทิ้งงานเกินกว่า 6 เดือนติดต่อกัน เว้นแต่จะมีเหตุอันสมควรและได้รับอนุมัติจากเจ้าหน้าที่แล้ว	คณะกรรมการประสานงานอพยพราษฎร ในคราวประชุมครั้งที่ 2/2538 เมื่อวันที่ 20 กันยายน 2538 1. ต้องเข้าอยู่อาศัยและทำกินในแปลงที่จัดสรร และต้องทำประโยชน์ตามที่คณะกรรมการประสานงานอพยพราษฎรกำหนดภายใน 1 ปี นับจากวันจับสลาก 2. ต้องอยู่อาศัยและทำกินโดยไม่ทอดทิ้ง 3. ห้ามนำแปลงที่จัดสรรไปทำการซื้อขายหรือ แลกเปลี่ยนกับบุคคลภายนอกจนไม่สามารถติดต่อทางมรดกไปยังทายาทตามกฎหมายได้ และทางราชการจะได้ตรวจสอบเป็นระยะ ๆ 4. เมื่อผู้ได้รับการช่วยเหลือไม่ปฏิบัติตามหลักเกณฑ์ที่คณะกรรมการฯ กำหนดไว้หรือปฏิบัติไม่สอดคล้องกฎหมายจะก่อให้เกิดผลเสียหากหรือไม่ตรงตามวัตถุประสงค์ของการดำเนินงานตามโครงการฯ ทางราชการจะพิจารณาเพิกถอนการช่วยเหลือและจะฟ้องร้องทรัพย์สินปลูกสร้างออกจากแปลงที่จัดสรรที่ได้รับโดยจะเรียกเรื่องค่าเสียหายใด ๆ จากทางราชการมิได้ หากฝ่าฝืนไม่ยินยอมหรือลงสิ่งปลูกสร้างออกจากรวมแปลงที่จัดสรรภายในกำหนดทางราชการจะทำการรื้อถอนของ ค่าใช้จ่ายใด ๆ ในการรื้อถอนเจ้าของสิ่งปลูกสร้างนั้นจะถือเป็นผู้รับผิดชอบ	เหมือนกับโครงการ 8-9	

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สรุปหลักเกณฑ์การพิจารณาความช่วยเหลืออันที่จิดสรร

คณะกรรมการประสานงานอพยพราษฎร

โครงการขยายอพยพฝึกในคนแม่เมาะ สำหรับโรงไฟฟ้าเครื่องที่ 8 และ 9

Guidelines for Relocation

- ข้อที่ 1 ราษฎรที่จะได้รับความช่วยเหลืออันที่จิดสรรครบถ้วนตามแนวทางเลือกทั้ง 3 ทาง (1 ไร่ 3 งาน, 40 ไร่ + 16,200 บาท และ 120,000 บาท) เป็นราษฎรที่จะต้องมีคุณสมบัติ คือ มีบ้านและที่ดินเป็นของตนเอง และมีคุณสมบัติครบถ้วนตามหลักเกณฑ์ ดังนี้
1. ทะเบียนบ้านแจ้งเข้าอยู่อาศัยก่อนวันที่ 10 พฤษภาคม 2531
 2. ที่ดินมีหลักฐาน (นส.3 ก., นส.3 หรือ ส.ค.1) ครบครอบก่อนวันที่ 10 พฤษภาคม 2531
 3. ที่ดินไม่มีหลักฐาน (นสท.5, นสท.6 หรือไม่มีหลักฐาน) ครบครอบก่อนปี 2529
 4. มีการอยู่อาศัยเป็นการประจำ (ถ้าหากไม่อยู่ประจำ ต้องมีเหตุผลที่ทางคณะกรรมการฯ พิจารณาแล้วเห็นว่ามีความจำเป็นที่ผู้จนได้ว่าจะสามารถอยู่ประจำได้) นอกจากนี้จะต้องไม่แสวงหาผลประโยชน์ทางมิชอบ หากคณะกรรมการฯ เห็นว่ามีความจำเป็นที่จะแสวงหาผลประโยชน์ทางมิชอบ จะไม่ได้รับความช่วยเหลือ
 5. ราษฎรจะต้องแจ้งความจำนงขอรับความช่วยเหลืออันที่จิดสรร
- ข้อที่ 2 ราษฎรที่มีคุณสมบัติตามข้อที่ 1 แต่ไม่ครบถ้วนตามหลักเกณฑ์คณะกรรมการฯ กำหนดไว้ จะได้รับความช่วยเหลือกรณีอื่น ๆ กล่าวคือ กรณีที่เลือก 1 ไร่ 3 งาน จะได้รับที่จิดสรรขนาด 1 ไร่ กรณีที่เลือกที่ป่าการค้า 40 ไร่ หรือเงินค่าทดแทนลักษณะพิเศษ 16,200 บาท จะได้รับที่ป่าการค้า - จิดสรร 40 ไร่ + จำนวน 26,400 บาท และกรณีที่เลือกเงินค่าทดแทน 120,000 บาท โดยไม่ขอรับที่จิดสรรก็จะได้ รับเงินค่าทดแทน จำนวน 68,571 บาท คุณสมบัติของราษฎรที่อยู่ภายใต้เงื่อนไข ดังนี้
1. ทะเบียนบ้านแจ้งเข้าอยู่อาศัยถึงวันที่ 10 พฤษภาคม 2531 แต่ก่อนวันที่ 9 มิถุนายน 2532
 2. ที่ดินมีหลักฐาน (นส.3ก., นส.3 หรือ ส.ค.1) ครบครอบถึงวันที่ 10 พฤษภาคม 2531 แต่ก่อนวันที่ 9 มิถุนายน 2532
 3. ที่ดินไม่มีหลักฐาน (นสท.5, นสท.6 หรือไม่มีหลักฐาน) ครบครอบถึงปี 2529 แต่ก่อนวันที่ 9 มิถุนายน 2532
 4. มีการอยู่อาศัยเป็นการประจำ (ถ้าหากไม่อยู่ประจำต้องมีเหตุผลที่ทางคณะกรรมการฯ พิจารณาแล้วเห็นว่าไม่เหมาะสมและความจำเป็นที่ผู้จนได้ว่าจะสามารถอยู่ประจำได้) นอกจากนี้จะต้องไม่แสวงหาผลประโยชน์ทางมิชอบ หากคณะกรรมการฯ เห็นว่ามีความจำเป็นที่จะแสวงหาผลประโยชน์ทางมิชอบ จะไม่ได้รับความช่วยเหลือ
 5. ราษฎรจะต้องแจ้งความจำนงขอรับความช่วยเหลืออันที่จิดสรร
- หมายเหตุ กรณีที่ราษฎรมีคุณสมบัติครบถ้วนตามข้อที่ 1 ยกเว้นข้อที่อยู่อาศัยเป็นการประจำ ราษฎรจะได้รับความช่วยเหลือกรณีอื่นตามข้อที่ 2
- ข้อที่ 3 ราษฎรที่มีฐานะบ้าน ซึ่งบอกานที่ดินของผู้อื่น ไม่มีที่ดินบริเวณอันที่จิดสรรโครงการฯ และมีภาระแจ้งย้ายเข้าอยู่อาศัยในทะเบียนบ้านก่อนวันที่ 9 มิถุนายน 2532 จะได้รับความช่วยเหลือที่จิดสรรขนาด - 100 ไร่ (กรณีเลือก 1 ไร่ 3 งาน) และได้รับที่ป่าการค้า 40 ไร่ โดยไม่ได้รับเงินค่าทดแทนในลักษณะพิเศษ (กรณีเลือกที่ป่าการค้า 40 ไร่ + เงินค่าทดแทน จำนวน 16,200 บาท) และ จะได้รับเงินค่าทดแทนในลักษณะพิเศษ จำนวน 17,143 บาท (กรณีเลือกไม่ขอรับที่จิดสรร แต่ขอรับเงินค่าทดแทนในลักษณะพิเศษ 120,000 บาท) โดยจะอยู่อาศัยเป็นการประจำหรือไม่ก็ตาม ทั้งนี้ราษฎรจะต้องไม่แสวงหาผลประโยชน์ทางมิชอบ หากคณะกรรมการฯ เห็นว่ามีความจำเป็นที่จะแสวงหาผลประโยชน์ทางมิชอบ จะไม่ได้รับความช่วยเหลือ
- ข้อที่ 4 ราษฎรที่มีคุณสมบัติที่จะได้รับความช่วยเหลืออันที่จิดสรรจากหลักเกณฑ์ ข้อที่ 1, 2 และ 3 แล้ว ราษฎรจะได้รับการพิจารณาให้ความช่วยเหลือเป็นกรณีพิเศษ (ที่จิดสรรขนาด 80 ไร่ ต่อครอบครัว) ทั้งนี้คณะกรรมการฯ จะพิจารณาเป็นรายๆ ไป และถ้าหากคณะกรรมการประสานงานอพยพราษฎรให้ความช่วยเหลือแก่ราษฎร

หมวดจัดรูปที่ดินและฟื้นฟูธรรมชาติ
หน่วยงานอพยพและจิดสรรพิเศษ
โครงการจัดการฝังน้ำแม่เมาะ กพม.

100

สรุปการให้ความช่วยเหลือเงินค่าทดแทนลักษณะพิเศษตามโครงการขยายเหมืองแม่เมาะ สำหรับโรงไฟฟ้าแม่เมาะเครื่องที่ 8,9
(กรณีไม่ชอบรับที่จัดสรร)

ลำดับที่	amt. จำนวนเงิน ที่ให้ความช่วยเหลือ	ราษฎรที่ได้รับความช่วยเหลือ						หมายเหตุ
		ม.1 ต.แม่เมาะ HL BM HAAATONG (บ้านเมาะหลวง, บ้านมอน, บ้านหัวทุ่ง)		ม.3 ต.แม่เมาะ (บ้านหางสูง) HANOHON		ม.8 ต.แม่เมาะ (เดิม) (บ้านห้วยเป็ด) HANOHON		
		ราย #	จำนวนเงิน	ราย	จำนวนเงิน	ราย	จำนวนเงิน	
1.	ครอบครัวละ 120,000.-บาท <i>per family</i>	241	28,920,000.-บาท	13	1,560,000.-บาท	1	120,000.-บาท	
2.	ครอบครัวละ 68,571.-บาท	26	1,782,846.-บาท	7	479,997.-บาท	1	68,571.-บาท	
3.	ครอบครัวละ 17,143.-บาท	3	342,860.-บาท	3	51,429.-บาท	-		

• จำนวนราษฎรที่มีสิทธิได้รับที่จัดสรร # family fast got lot allocate

- | | | | | | |
|----|--|-------|-------|-----|----------|
| 1. | ม.1 ต.แม่เมาะ (บ้านเมาะหลวง, บ้านมอน, บ้านหัวทุ่ง) | จำนวน | 1,255 | ราย | # family |
| 2. | ม.3 ต.แม่เมาะ (บ้านหางสูงบางส่วน) | จำนวน | 442 | ราย | |
| 3. | ม.8 ต.แม่เมาะ (บ้านห้วยเป็ดบางส่วน) | จำนวน | 99 | ราย | |
- HP

Appendix C
Summaries and Maps of Surveyed Villages

Changwat / Province: Lampang

Amphoe / District: Mae Moh

Tambon / Sub-district: Mae Moh

Mu ban / village: Moh Luang

Relocation agreement: option 2 - land and facilities provided

Previous location of village and name: Reservoir and dumping area, Moh Luang

Total population: 988 households / 2883 people

Attempted sample population: 82 households (8.3%)

Sampling Method: Selected all households included in Chulalongkorn University epidemiological study

Population surveyed: combined with Na Kam, 121 households (87.1% attempted, 3.7% total). Of that, 112 households (80.6% attempted, 3.5% total) were matched with previously collected data

Map Key:

1	2	3	4
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Plan Luang

แผนที่ หนอง

หน้า 1

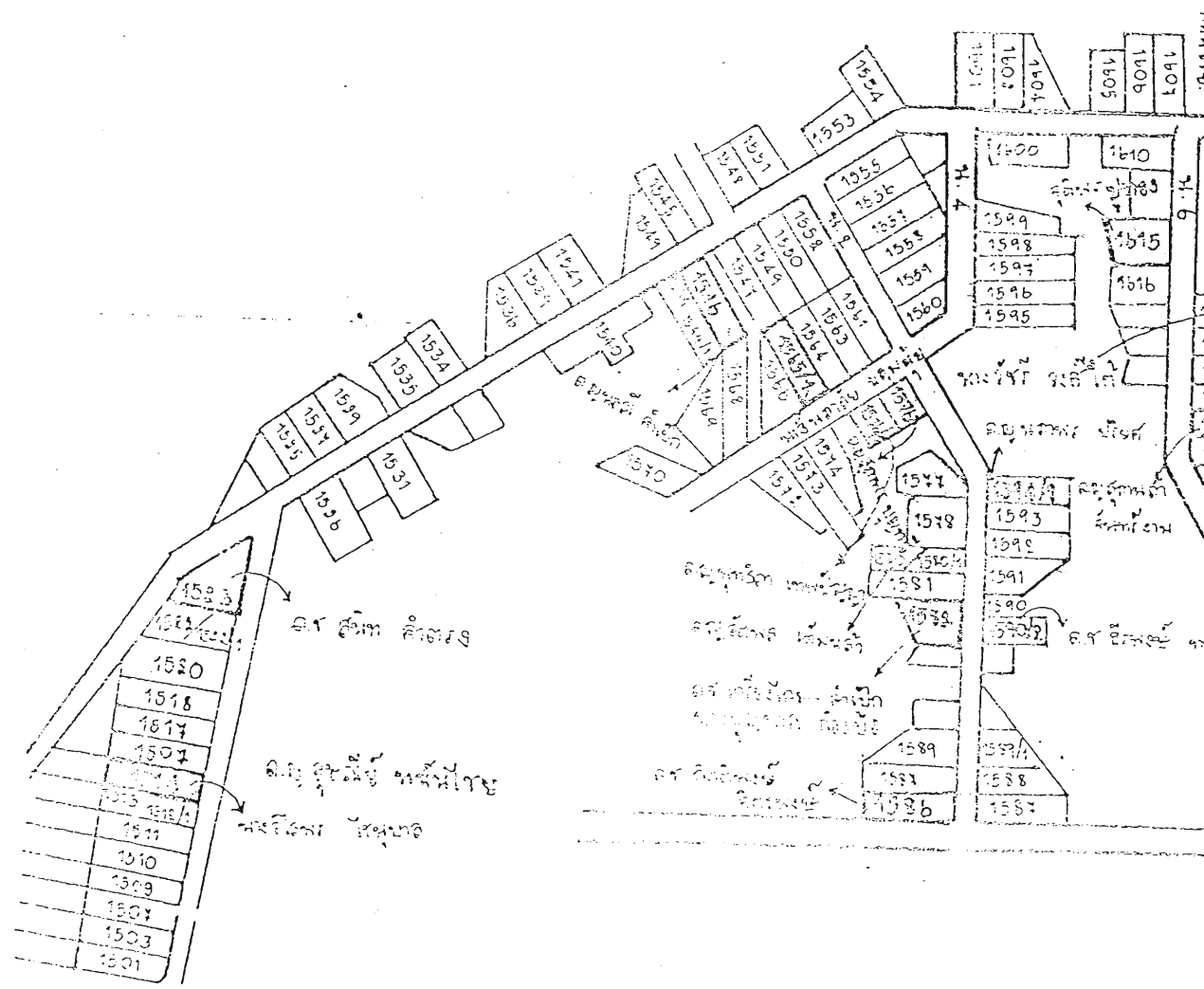
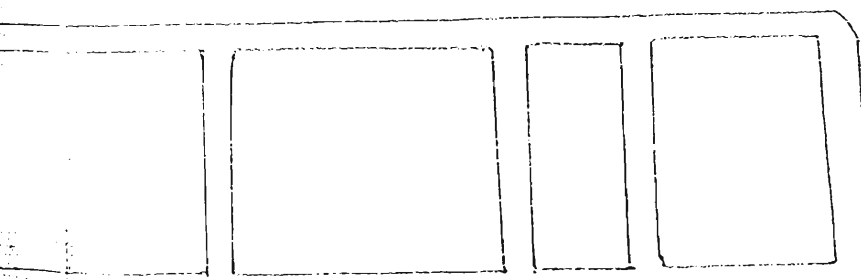
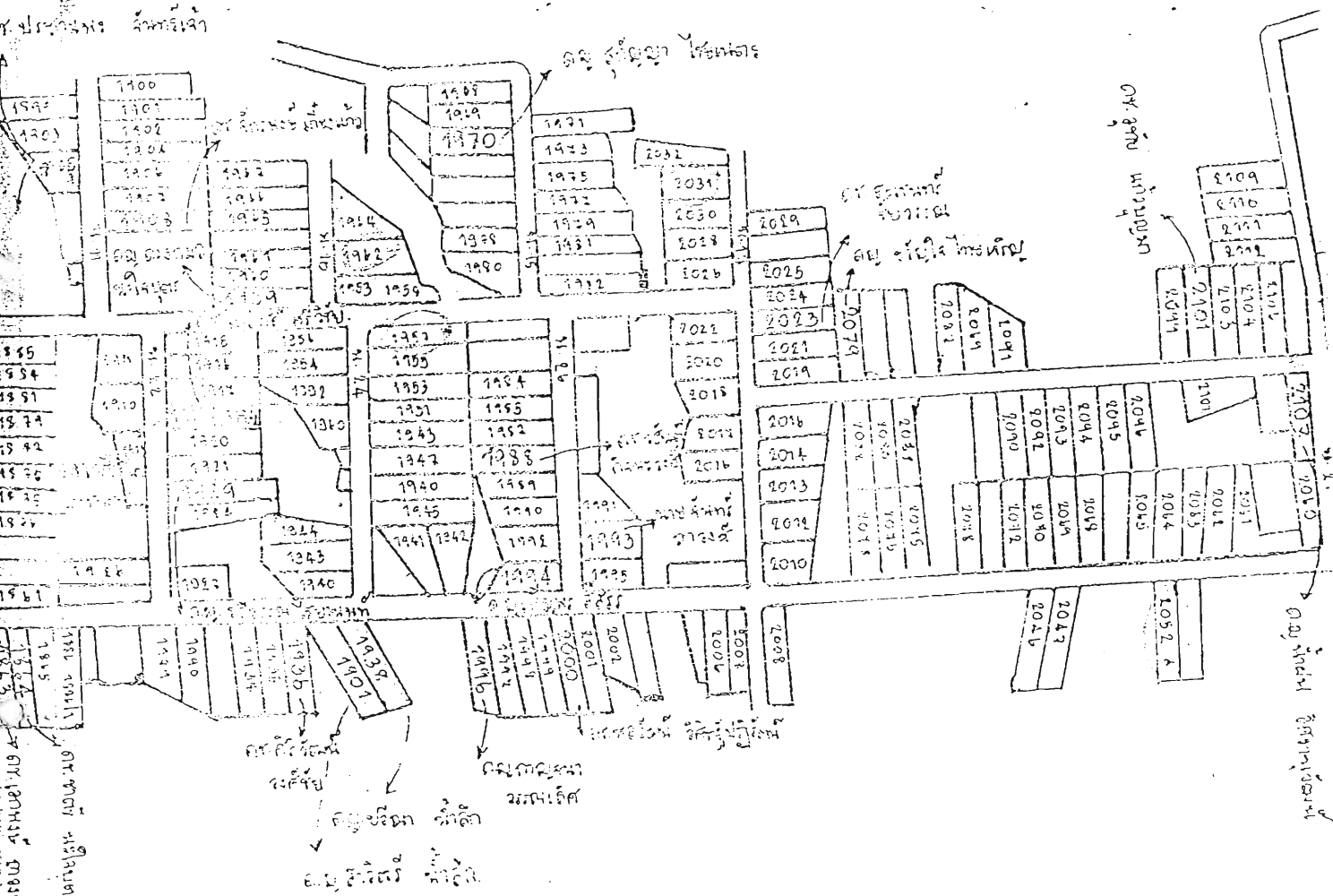
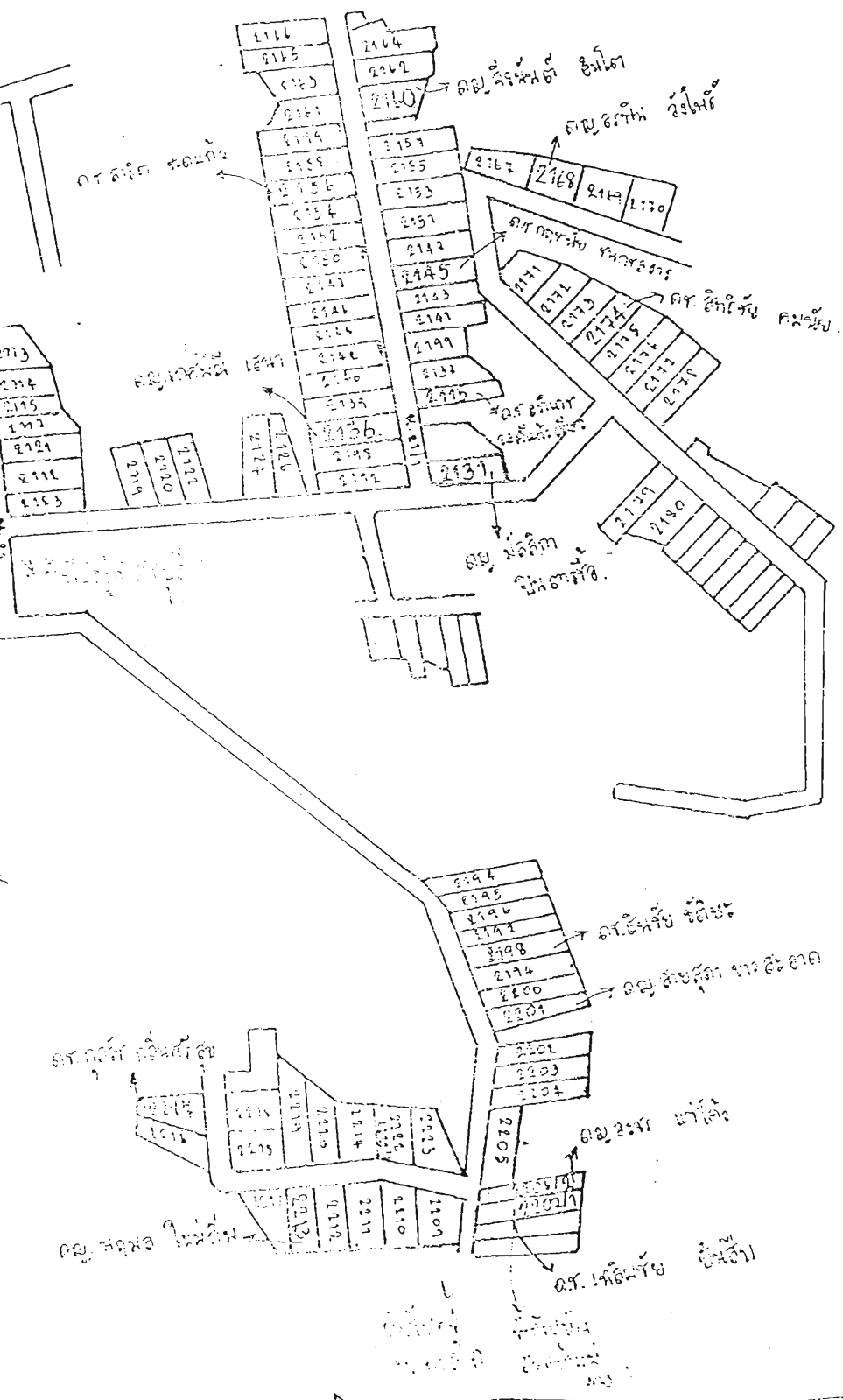


Fig. 3



ถนนพหลโยธิน →

หน้า 4



Handwritten signature or initials.

15/5/40

Changwat / Province: Lampang

Amphoe / District: Mae Moh

Tambon / Sub-district: Mae Moh

Mu ban / village: Na Kam

Relocation agreement: option 1 - land and facilities, but no choice

Previous location of village and name: Stacks 1-3, Na Kam

Total population: 2239 households / 7033 people

Attempted sample population: 57 households (2.5%)

Sampling Method: Selected all households included in Chulalongkorn University epidemiological study

Population surveyed: combined with Moh Luang, 121 households (87.1% attempted, 3.7% total). Of that, 112 households (80.6% attempted, 3.5% total) were matched with previously collected data

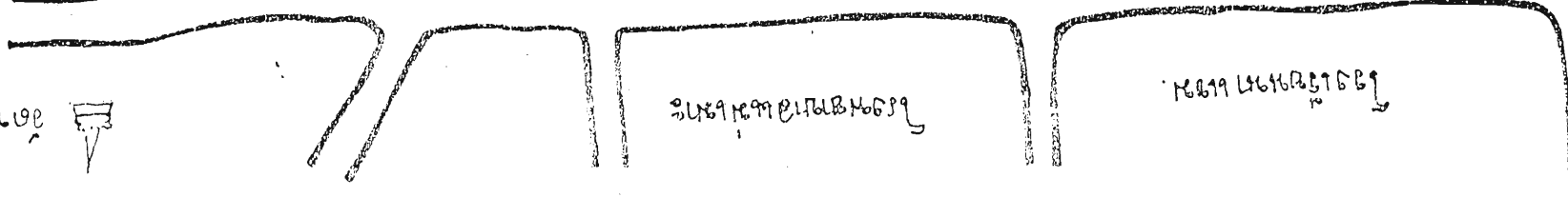
Map Key:

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6 R099

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← ล้าง

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ด.ญ. อธิพัทธ์ สิริธรรม
[34/1]
ด.ญ. เมธิมศรี คำแพง
[34/2] [34/3]

ด.ช. สรวุฑู กัญชิ่งดา
[34/4]
ด.ช. จักรินทร์ กัสต์สุภา
[34/5]

* 91
ด.ญ. กัญชิ่งดา จันทร์ยอด
ที่ จ.ร้อยเอ็ด โรงเรียนสตรีใหม่

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ด.ช. รุ่งนรินทร์
[32/1] กออินเกษตร
ด.ช. ปรีชา นอมทอง
[47]
ด.ช. นวัตกรรม ชิมกล้า
[48]

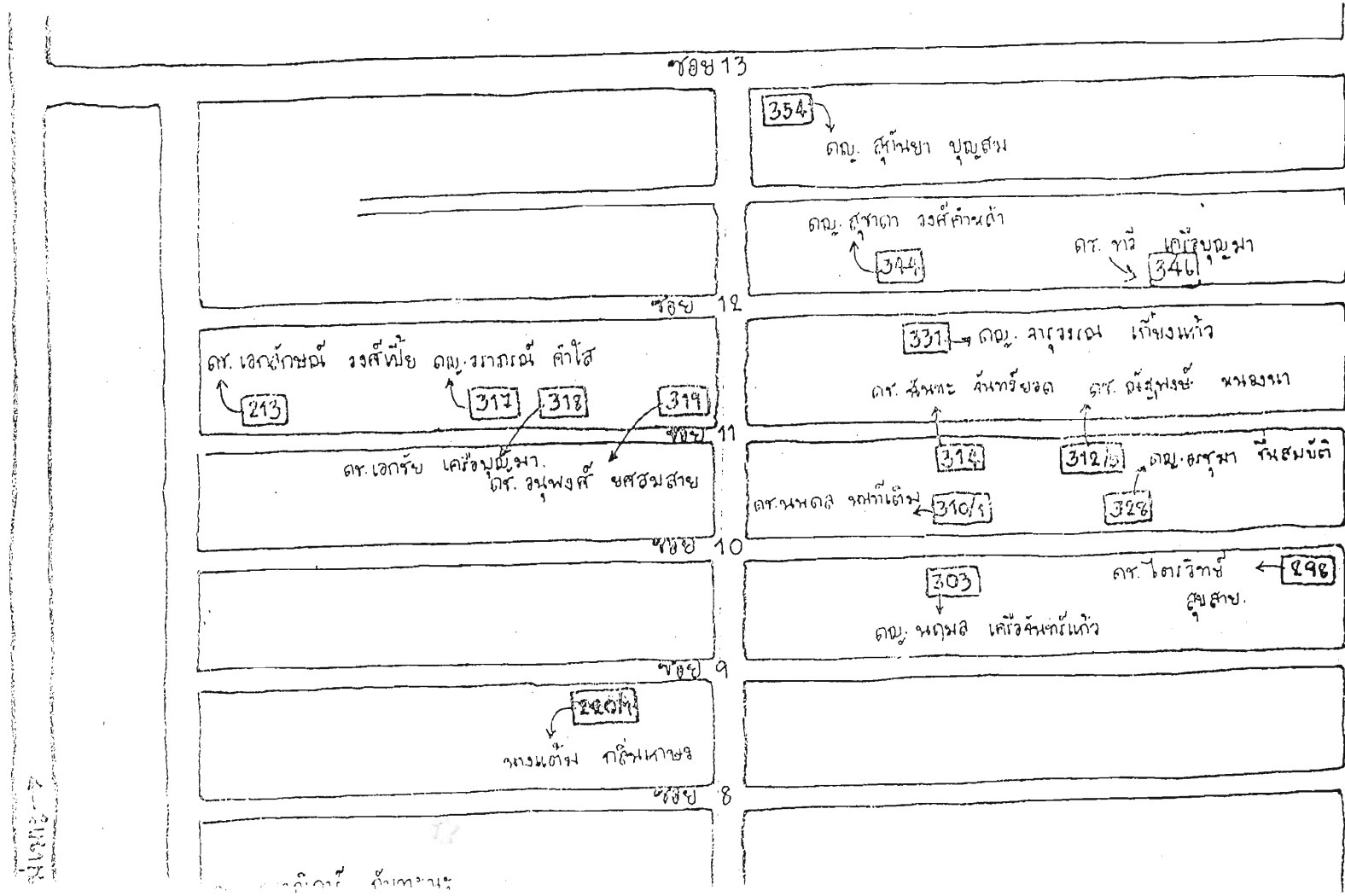
58
ด.ช. นนทกร บอวงค์

96
ด.ช. เด่นดวงศรี
สกุลใหม่
ด.ช. บุญศักดิ์ คำคำ
[79]
[78/1]
ด.ญ. สุภาพร ไทยใหม่

12/5/40
Thirint

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แผนกกีฬาแถม (ลูกในวัย)



ภกนตม
539/2
ภ. นพ. บุญมา

หน้า ๑

หน้า ๒

ด.ญ. กรรณิการ์ จันทร์

203/1
213 → ด.ญ. อธิภากร ชาติทอง
ด.ญ. กัญญา พิมพ์ ← 243

ด.ญ. ทวีร์ ทวีชัยภักดิ์ 196
ดร.เวทีภนทร์ อธิชัยคำ 198/1

ด.ญ. รุ่งเรือง น้อยมา 173
ด.ญ. ชวิระหอ เต๋ายศ 175/2

ด.ญ. เกศรา เมฆสัมพันธ์ 147/3
ด.ญ. สุภาภัสร์ อิ่มจันทร์ 148/2

148/3
147/2 148
ด.ญ. ดาวรุ่ง แก้วแก้วคำ
129 ด.ญ. พงษ์จันทร์ คำใส

103
ด.ญ. สรณู แกรงน้อสาบ

โรงพยาบาลแม่เปิน

ด.ญ. เวณดี อิ่มจันทร์ 251
ด.ญ. ดวงตา เค็ดจันทน์ 249 250

ด.ญ. จลิตา อิ่มทอง 205/1
ด.ญ. นกัษนุร ดวงตา

ด.ญ. ชกล ไฉนทศ 182/1

167/2 ด.ญ. อารงต์ นิลนิตย์
164
162
ด.ญ. เกศพงศ์ สมบูรณ์
ด.ญ. พงศ์นรา จันทร์แก้ว

ด.ญ. นีรนุช เค็ดจันทน์
ด.ญ. กรรณิษฐ์ อิ่มตาธรรม 137/1

ด.ญ. อารุณี นันท์ชัย 110/2

หน้า ๒๓

12/5/40
H.M.

Changwat / Province: Lampang

Amphoe / District: Mae Moh

Tambon / Sub-district: Na Sak

Mu ban / village: Na Sak

Relocation agreement: Not applicable - have never been moved

Total population: 311 households / 1210 people

Attempted sample population: 83 households (26.7%)

Sampling Method: Selected all households included in Chulalongkorn University epidemiological study

Population surveyed: combined with Mae Luang, 137 households (89% attempted, 25.3% total). Of that, 125 households (81.2% attempted, 23.1% total) were matched with previously collected data

Map Key:

1	2
3	4

15/3
140

31/3

30
40
14
31/3

151/1

178
59/10

33/1
27

248
45

19/1
19/1
19/1

20/5

122/1

121/1

30/1

150/1

21/2

15/2

12

3/1

3/2

↑ 121/1 ๓.๗๖ ๓.๗๗ ๓.๗๘ ๓.๗๙ ๓.๘๐ ๓.๘๑ ๓.๘๒ ๓.๘๓ ๓.๘๔ ๓.๘๕ ๓.๘๖ ๓.๘๗ ๓.๘๘ ๓.๘๙ ๓.๙๐ ๓.๙๑ ๓.๙๒ ๓.๙๓ ๓.๙๔ ๓.๙๕ ๓.๙๖ ๓.๙๗ ๓.๙๘ ๓.๙๙ ๓.๑๐๐

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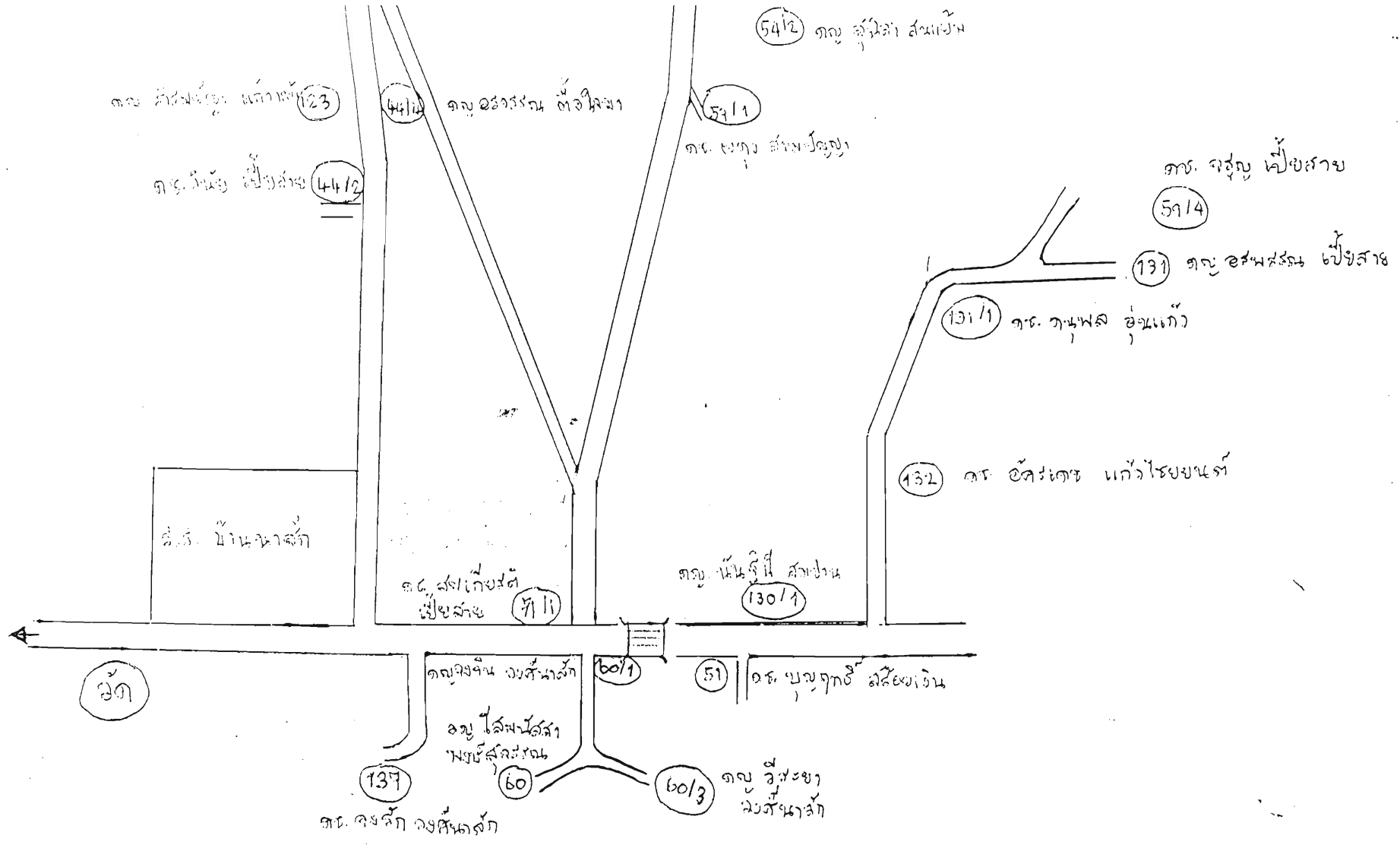
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NASAK

Changwat / Province: Lampang

Amphoe / District: Mae Moh

Tambon / Sub-district: Na Sak

Mu ban / village: Mae Luang

Relocation agreement: Not applicable - have never been moved

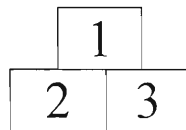
Total population: 230 households / 861 people

Attempted sample population: 71 households (30.8%)

Sampling Method: Selected all households included in Chulalongkorn University epidemiological study

Population surveyed: combined with Mae Luang, 137 households (89% attempted, 25.3% total). Of that, 125 households (81.2% attempted, 23.1% total) were matched with previously collected data

Map Key:



Changwat / Province: Lampang

Amphoe / District: Muong

Tambon / Sub-district: Bansadek

Mu ban / village: Moh Seri

Pu-yai ban: Kaewae Tapanyo

Relocation agreement: option 1 - monetary compensation

Previous location of village and name: Reservoir and dumping area, Moh
Luang

Total population: 166 households

Attempted sample population: 166 households (100%)

Sampling Method: Selected all households in the mu ban

Population surveyed: 151 households (90.9%)

Map Key:

1	2	3
4	5	6
	7	8
	9	10



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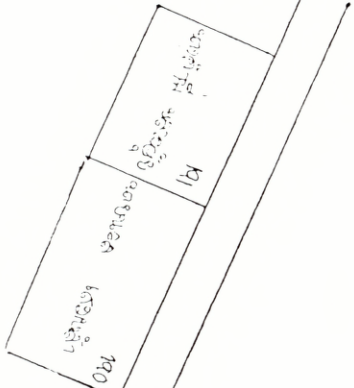
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122	9162	9157
123	9158	
124		
125		137
126	9161	
127		914
128		915
129		916
130		917
131		918
132		919
133		920
134		921
135		922
136		923
137		924
138		925
139		926
140		927



საქონლის მფლობელის სახელი
 საქონლის ფართობი
 9152181
 9151
 150
 183
 183
 45

9174
 112
 112

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 9147
 139

1304
 9146 135
 914511

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 9144
 134 132
 134 132

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 9141
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 9104 145
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 9103 143
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บ้านเลขที่ 121
บ้านเลขที่ 122
บ้านเลขที่ 123
บ้านเลขที่ 124
บ้านเลขที่ 125
บ้านเลขที่ 126
บ้านเลขที่ 127
บ้านเลขที่ 128
บ้านเลขที่ 129
บ้านเลขที่ 130
บ้านเลขที่ 131
บ้านเลขที่ 132
บ้านเลขที่ 133

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(99)

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ถนนสาย 100

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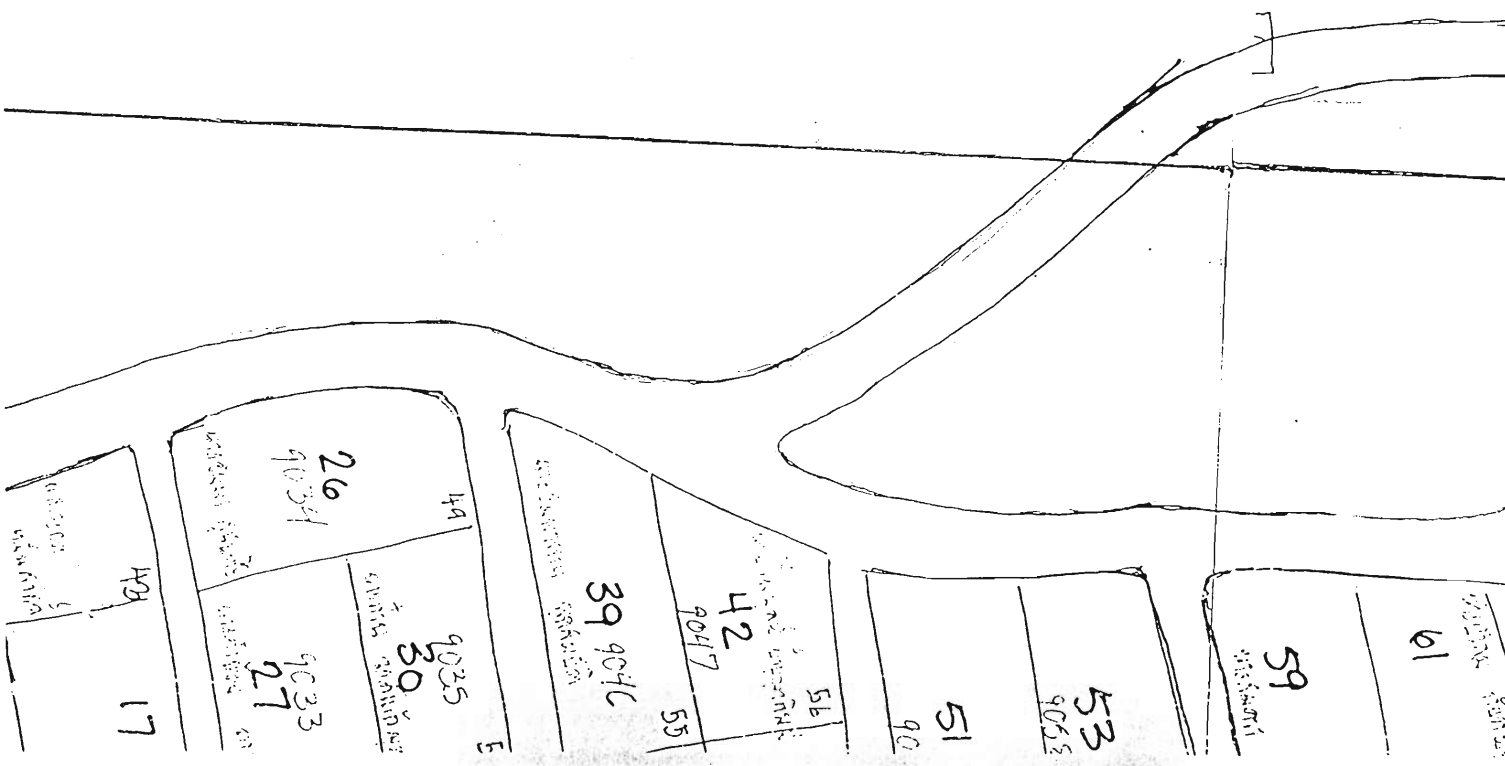
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6829196319



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39 904C

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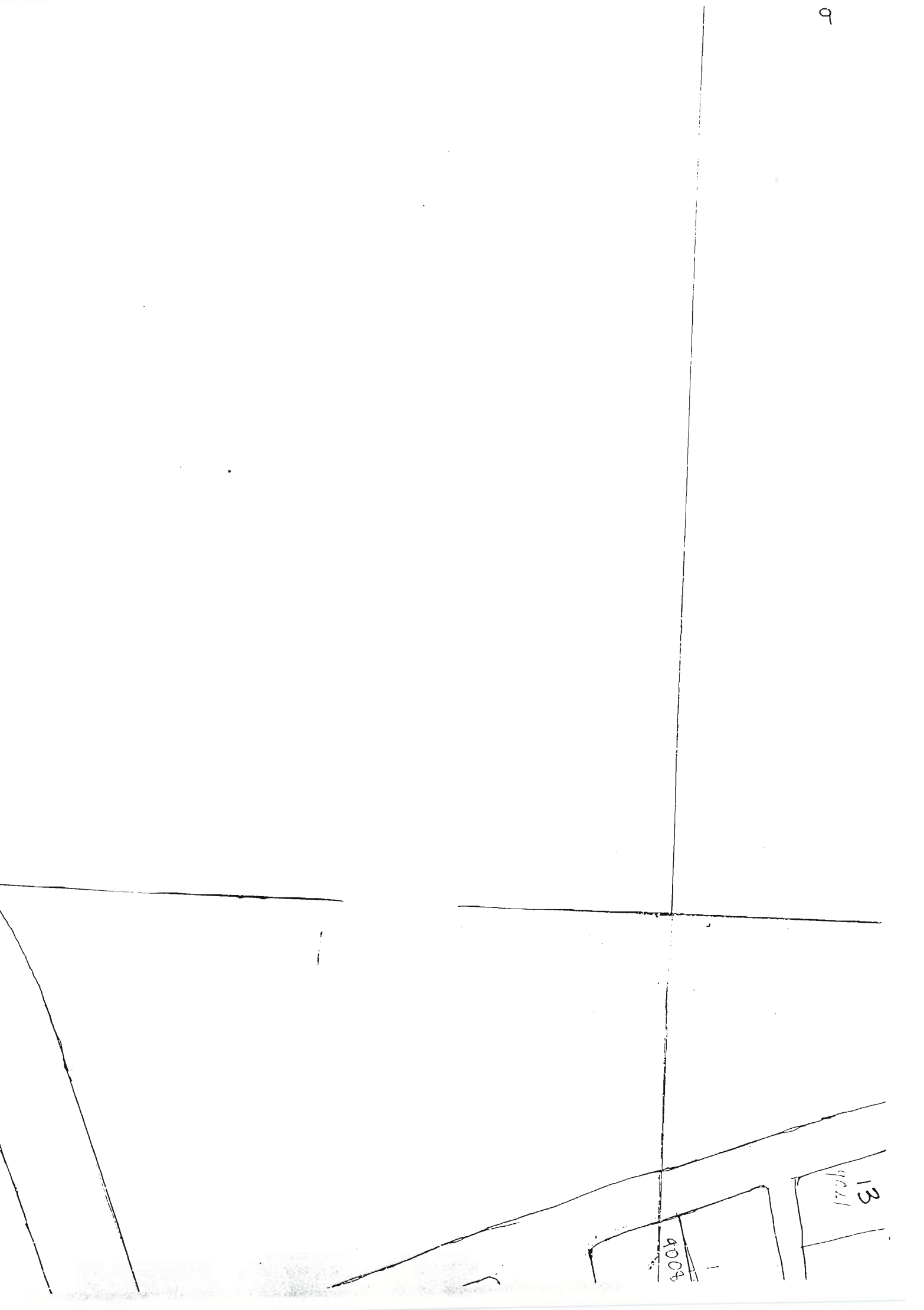
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9033	9033	49	28	9032	9065	9064	25	9062	9061
9032	9031	51	29	9037	9060	9059	58	9058	9057
9031	9030	4b	32	9037	9059	9058	54	9057	9056
9030	9029	50	31	9036	9058	9057	52	9056	9055
9029	9028	4a	29	9031	9057	9056	51	9055	9054
9028	9027	4c	27	9027	9056	9055	48	9054	9053
9027	9026	4d	23	9026	9055	9054	45	9053	9052
9026	9025	4e	23	9025	9054	9053	43	9052	9051
9025	9024	4f	23	9024	9053	9052	42	9051	9050
9024	9023	4g	23	9023	9050	9049	41	9049	9048
9023	9022	4h	23	9022	9049	9048	40	9048	9047
9022	9021	4i	23	9021	9048	9047	39	9047	9046
9021	9020	4j	23	9020	9047	9046	38	9046	9045
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9019	9018	4l	23	9018	9045	9044	36	9044	9043
9018	9017	4m	23	9017	9044	9043	35	9043	9042
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9016	9015	4o	23	9015	9042	9041	33	9041	9040
9015	9014	4p	23	9014	9041	9040	32	9040	9039
9014	9013	4q	23	9013	9040	9039	31	9039	9038
9013	9012	4r	23	9012	9039	9038	30	9038	9037
9012	9011	4s	23	9011	9038	9037	29	9037	9036
9011	9010	4t	23	9010	9037	9036	28	9036	9035
9010	9009	4u	23	9009	9036	9035	27	9035	9034
9009	9008	4v	23	9008	9035	9034	26	9034	9033
9008	9007	4w	23	9007	9034	9033	25	9033	9032
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9006	9005	4y	23	9005	9032	9031	23	9031	9030
9005	9004	4z	23	9004	9031	9030	22	9030	9029
9004	9003	4aa	23	9003	9030	9029	21	9029	9028
9003	9002	4ab	23	9002	9029	9028	20	9028	9027
9002	9001	4ac	23	9001	9028	9027	19	9027	9026
9001	9000	4ad	23	9000	9027	9026	18	9026	9025
9000	8999	4ae	23	8999	9026	9025	17	9025	9024
8999	8998	4af	23	8998	9025	9024	16	9024	9023
8998	8997	4ag	23	8997	9024	9023	15	9023	9022
8997	8996	4ah	23	8996	9023	9022	14	9022	9021
8996	8995	4ai	23	8995	9022	9021	13	9021	9020
8995	8994	4aj	23	8994	9021	9020	12	9020	9019
8994	8993	4ak	23	8993	9020	9019	11	9019	9018
8993	8992	4al	23	8992	9019	9018	10	9018	9017
8992	8991	4am	23	8991	9018	9017	9	9017	9016
8991	8990	4an	23	8990	9017	9016	8	9016	9015
8990	8989	4ao	23	8989	9016	9015	7	9015	9014
8989	8988	4ap	23	8988	9015	9014	6	9014	9013
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8987	8986	4ar	23	8986	9013	9012	4	9012	9011
8986	8985	4as	23	8985	9012	9011	3	9011	9010
8985	8984	4at	23	8984	9011	9010	2	9010	9009
8984	8983	4au	23	8983	9010	9009	1	9009	9008
8983	8982	4av	23	8982	9009	9008	0	9008	9007
8982	8981	4aw	23	8981	9008	9007	0	9007	9006
8981	8980	4ax	23	8980	9007	9006	0	9006	9005
8980	8979	4ay	23	8979	9006	9005	0	9005	9004
8979	8978	4az	23	8978	9005	9004	0	9004	9003
8978	8977	4ba	23	8977	9004	9003	0	9003	9002
8977	8976	4bb	23	8976	9003	9002	0	9002	9001
8976	8975	4bc	23	8975	9002	9001	0	9001	9000
8975	8974	4bd	23	8974	9001	9000	0	9000	8999
8974	8973	4be	23	8973	9000	8999	0	8999	8998
8973	8972	4bf	23	8972	8999	8998	0	8998	8997
8972	8971	4bg	23	8971	8998	8997	0	8997	8996
8971	8970	4bh	23	8970	8997	8996	0	8996	8995
8970	8969	4bi	23	8969	8996	8995	0	8995	8994
8969	8968	4bj	23	8968	8995	8994	0	8994	8993
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8967	8966	4bl	23	8966	8993	8992	0	8992	8991
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8964	8963	4bo	23	8963	8990	8989	0	8989	8988
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8962	8961	4bq	23	8961	8988	8987	0	8987	8986
8961	8960	4br	23	8960	8987	8986	0	8986	8985
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8958	8957	4bu	23	8957	8984	8983	0	8983	8982
8957	8956	4bv	23	8956	8983	8982	0	8982	8981
8956	8955	4bw	23	8955	8982	8981	0	8981	8980
8955	8954	4bx	23	8954	8981	8980	0	8980	8979
8954	8953	4by	23	8953	8980	8979	0	8979	8978
8953	8952	4bz	23	8952	8979	8978	0	8978	8977
8952	8951	4ca	23	8951	8978	8977	0	8977	8976
8951	8950	4cb	23	8950	8977	8976	0	8976	8975
8950	8949	4cc	23	8949	8976	8975	0	8975	8974
8949	8948	4cd	23	8948	8975	8974	0	8974	8973
8948	8947	4ce	23	8947	8974	8973	0	8973	8972
8947	8946	4cf	23	8946	8973	8972	0	8972	8971
8946	8945	4cg	23	8945	8972	8971	0	8971	8970
8945	8944	4ch	23	8944	8971	8970	0	8970	8969
8944	8943	4ci	23	8943	8970	8969	0	8969	8968
8943	8942	4cj	23	8942	8969	8968	0	8968	8967
8942	8941	4ck	23	8941	8968	8967	0	8967	8966
8941	8940	4cl	23	8940	8967	8966	0	8966	8965
8940	8939	4cm	23	8939	8966	8965	0	8965	8964
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8938	8937	4co	23	8937	8964	8963	0	8963	8962
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8929	8928	4cx	23	8928	8955	8954	0	8954	8953
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8926	8925	4da	23	8925	8952	8951	0	8951	8950
8925	8924	4db	23	8924	8951	8950	0	8950	8949
8924	8923	4dc	23	8923	8950	8949	0	8949	8948
8923	8922	4dd	23	8922	8949	8948	0	8948	8947
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8921	8920	4df	23	8920	8947	8946	0	8946	8945
8920	8919	4dg	23	8919	8946	8945	0	8945	8944
8919	8918	4dh	23	8918	8945	8944	0	8944	8943
8918	8917	4di	23	8917	8944	8943	0	8943	8942
8917	8916	4dj	23	8916	8943	8942	0	8942	8941
8916	8915	4dk	23	8915	8942	8941	0	8941	8940
8915	8914	4dl	23	8914	8941	8940	0	8940	8939
8914	8913	4dm	23	8913	8940	8939	0	8939	8938
8913	8912	4dn	23	8912	8939	8938	0	8938	8937
8									



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wall

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(1)

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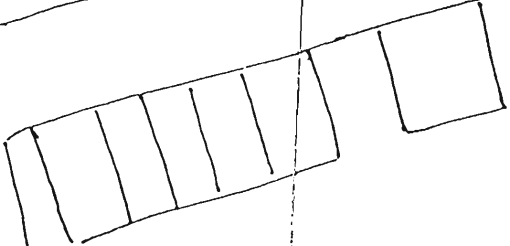
9000

9011

94

9001

highway



Appendix D
Thai and English Moh Seri Surveys

หมายเลขบุคคล _____ หมายเลขครอบครัว _____

วันเดือนปี _____ Village: (1) เมาะเสรี (2) เมาะหลวง / นาแวม (3) นาลัก

ผู้สัมภาษณ์: _____

ข้อมูลครัวเรือน (ตอบครั้งเดียวโดยหัวหน้าครัวเรือน)

โปรดให้ข้อมูลเกี่ยวกับคนแต่ละคนที่อยู่ในครัวเรือนของท่าน

- | | |
|----------------|-------------------------------|
| 1. แม่..... คน | 6. ข้า,ชาย..... คน |
| 2. พ่อ..... คน | 7. ปู่,ตา..... คน |
| 3. ลูก..... คน | 8. ทวดหญิง..... คน |
| 4. ป้า..... คน | 9. ทวดชาย..... คน |
| 5. ลุง..... คน | 10. อื่น ๆ คน |
| | รวมจำนวนคนในครัวเรือน..... คน |

ตอนที่ ๑: ข้อมูลประชากร

1) วัน เดือน ปี เกิด ของท่าน คือ	BDate	____/____/____
2) เพศ (1) ชาย (2) หญิง	Gender	_____
3ก) ท่านอยู่ที่หมู่บ้านนี้มากี่ปีแล้ว (มากกว่า 5 ปี ไม่ต้องตอบข้อ 3ข) _____	YrsInVlg	_____
3ข) หมู่บ้านที่ท่านอยู่ก่อนหน้าที่จะมาอยู่ที่นี่ คือ _____	OldVlg	_____

<p>7) ใน 3 ปีที่ผ่านมา ท่านเคยป่วยเป็นโรคปอด หรือโรคทางเดินหายใจจนไม่สามารถทำกิจกรรมได้ตามปกติ หรือต้องนอนชมอยู่กับบ้านหรือไม่</p> <p>(0) ไม่เคย (ข้ามไปข้อ 8) ↓ (1) เคย</p> <p>↘</p> <p>7b) มีครั้งไหนที่ท่านป่วยเป็นระยะเวลาเกินกว่า 1 อาทิตย์หรือไม่</p> <p>(0) ไม่ (ข้ามไปข้อ 25) ↓ (1) มี</p> <p>↘</p> <p>ก. ใน 3 ปีที่ผ่านมา ท่านเคยต้องหยุดคนานเกิน 1 อาทิตย์ ท่านป่วยมาแล้ว.....ครั้ง</p> <p>Achest1</p> <hr/> <p>Achest3</p> <hr/> <p>Achest4</p> <hr/> <p>Achest5</p> <hr/>	<p>Achest1</p> <hr/> <p>Achest3</p> <hr/> <p>Achest4</p> <hr/> <p>Achest5</p> <hr/>	
<p>8) ในเวลาที่ต้องเดินเร็วบนที่ราบ หรือเดินขึ้นเนิน(น้อยๆ) ท่านมีอาการหายใจไม่อิ่ม หรือหายใจไม่เต็มปอดหรือไม่</p> <p>(0) ไม่ (ข้ามไปส่วน 9) ↓ (1) มี</p> <p>↘ (ตอบข้อ ก - ช ด้วย)</p> <p>ก. จากการที่ท่านหายใจไม่อิ่ม ทำให้ท่านเดินช้ากว่าคนอื่นในอายุเดียวกันหรือไม่</p> <p>(0) ไม่ (1) ใช่ ↘</p> <p>↓ ข. ใน 1 ปีที่ผ่านมาท่านมีอาการหรือไม่</p> <p>(0) ไม่ (1) มี</p> <p>ค. ในเวลาปกติที่เดินบนที่ราบ ท่านเคยต้องหยุดพักเพื่อหายใจหรือไม่</p> <p>(0) ไม่ (1) เคย ↘</p> <p>↓ ง. ใน 1 ปีที่ผ่านมาท่านมีอาการหรือไม่</p> <p>(0) ไม่ (1) มี</p> <p>จ. ท่านเคยต้องหยุดพักเพื่อหายใจหลังจากที่เดินได้ 2 - 3 นาทีบนที่ราบหรือไม่</p> <p>(0) ไม่ (1) เคย ↘</p> <p>↓ ฉ. ใน 1 ปีที่ผ่านมาท่านมีอาการหรือไม่</p> <p>(0) ไม่ (1) มี</p> <p>ช. ขณะที่ท่านนั่งตัว ท่านเหนื่อยหรือไม่</p> <p>(0) ไม่ (1) เหนื่อย</p> <p>↘</p> <p>ข. ใน 1 ปีที่ผ่านมาท่านมีอาการหรือไม่</p> <p>(0) ไม่ (1) มี</p> <p>Abreath1</p> <hr/> <p>Abreath2</p> <hr/> <p>Year2</p> <hr/> <p>Abreath3</p> <hr/> <p>Year3</p> <hr/> <p>Abreath4</p> <hr/> <p>Year4</p> <hr/> <p>Abreath5</p> <hr/> <p>Year5</p> <hr/>	<p>Abreath1</p> <hr/> <p>Abreath2</p> <hr/> <p>Year2</p> <hr/> <p>Abreath3</p> <hr/> <p>Year3</p> <hr/> <p>Abreath4</p> <hr/> <p>Year4</p> <hr/> <p>Abreath5</p> <hr/> <p>Year5</p> <hr/>	

<p>9) ท่านเคยรู้สึกว่ายายใจมีเสียงวิตหรือมีเสียงคล้ายนกหวีดในทรวงอก/ หน้าอกมาก่อนหรือไม่</p> <p>(0) ไม่ (ข้ามไปตอบข้อ 10) ↓</p> <p>(1) เคย ↘</p>																				
<p>9b) ในช่วงเวลา 12 เดือน ที่ผ่านมา ท่านเคยรู้สึกว่ายายใจมีเสียงวิตหรือหายใจมีเสียงคล้ายนกหวีดในทรวงอกบ้างหรือไม่</p> <p>(0) ไม่ (ข้ามไปตอบข้อ 10) ↓ (1) เคย ↘</p>	Aasth1	_____																		
<p>9c) ในช่วงเวลา 12 เดือนที่ผ่านมา</p> <p>ท่านมีอาการหายใจมีเสียงวิตหรือมีอาการหอบหืดเป็นจำนวนกี่ครั้ง</p> <p>(0) ไม่มีเลย</p> <p>(1) 1 - 3 ครั้ง</p> <p>(2) 4 - 12 ครั้ง</p> <p>(3) มากกว่า 12 ครั้ง</p>	Aasth2	_____																		
<p>9d) ในช่วงเวลา 12 เดือนที่ผ่านมา ท่านเคยต้องตื่นจากการนอนหลับเพราะหายใจมีเสียงวิตโดยเฉลี่ยกี่ครั้งต่อ 1 สัปดาห์</p> <p>(0) ไม่ต้องตื่นเลย</p> <p>(1) น้อยกว่า 1 ครั้ง/สัปดาห์</p> <p>(2) เท่ากับหรือมากกว่า 1 ครั้ง/สัปดาห์</p>	Aasth3	_____																		
<p>9e) ในช่วง 12 เดือนที่ผ่านมา ท่านเคยหอบหรือหายใจมีเสียงวิตรุนแรงจนเหนื่อยมาก และทำให้พูดได้เพียง 1-2 คำต่อเนื่องกัน แล้วต้องหยุดหายใจหรือไม่</p> <p>(0) ไม่ (1) เคย</p>	Aasth4	_____																		
<p>10) ใน 2 อาทิตย์ที่ผ่านมาท่านมีอาการต่าง ๆ เหล่านี้หรือไม่</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;"></th> <th style="width: 15%; text-align: center;">ไม่มีอาการ</th> <th style="width: 15%; text-align: center;">มีอาการ</th> </tr> </thead> <tbody> <tr> <td>ใน 2 อาทิตย์ที่ผ่านมา ท่านเป็นหวัดหรือไม่</td> <td style="text-align: center;">(0)</td> <td style="text-align: center;">(1)</td> </tr> <tr> <td>ข. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการไอหรือไม่</td> <td style="text-align: center;">(0)</td> <td style="text-align: center;">(1)</td> </tr> <tr> <td>ค. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีเสมหะหรือไม่</td> <td style="text-align: center;">(0)</td> <td style="text-align: center;">(1)</td> </tr> <tr> <td>ง. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการน้ำมูกไหลหรือไม่</td> <td style="text-align: center;">(0)</td> <td style="text-align: center;">(1)</td> </tr> <tr> <td>จ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการแสบจมูกหรือไม่</td> <td style="text-align: center;">(0)</td> <td style="text-align: center;">(1)</td> </tr> </tbody> </table>		ไม่มีอาการ	มีอาการ	ใน 2 อาทิตย์ที่ผ่านมา ท่านเป็นหวัดหรือไม่	(0)	(1)	ข. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการไอหรือไม่	(0)	(1)	ค. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีเสมหะหรือไม่	(0)	(1)	ง. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการน้ำมูกไหลหรือไม่	(0)	(1)	จ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการแสบจมูกหรือไม่	(0)	(1)	Aasth5	_____
	ไม่มีอาการ	มีอาการ																		
ใน 2 อาทิตย์ที่ผ่านมา ท่านเป็นหวัดหรือไม่	(0)	(1)																		
ข. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการไอหรือไม่	(0)	(1)																		
ค. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีเสมหะหรือไม่	(0)	(1)																		
ง. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการน้ำมูกไหลหรือไม่	(0)	(1)																		
จ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการแสบจมูกหรือไม่	(0)	(1)																		
	Asymp1	_____																		
	Asymp2	_____																		
	Asymp3	_____																		
	Asymp4	_____																		
	Asymp5	_____																		

<p>ฉ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการคัดจมูก หรือไม่</p>	(0)	(1)	Asymp6	_____
<p>ฉ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการแสบคอ หรือไม่</p>	(0)	(1)	Asymp7	_____
<p>ช. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการเจ็บคอ หรือไม่</p>	(0)	(1)	Asymp8	_____
<p>ฅ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการแสบตา หรือไม่</p>	(0)	(1)	Asymp9	_____
<p>ฉ. ใน 2 อาทิตย์ที่ผ่านมา ท่านเป็นไข้ หรือไม่</p>	(0)	(1)	Asymp10	_____
<p>ง. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการปวดศีรษะ หรือไม่</p>	(0)	(1)	Asymp11	_____
<p>ง. ใน 2 อาทิตย์ที่ผ่านมา ท่านหายใจมีเสียงวี๊ดหรือหืด หรือไม่</p>	(0)	(1)	Asymp12	_____
<p>จ. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการแน่นหน้าอก หายใจไม่ออก หรือไม่</p>	(0)	(1)	Asymp13	_____
<p>ช. ใน 2 อาทิตย์ที่ผ่านมา ท่านมีอาการหอบหืด หรือไม่</p>	(0)	(1)	Asymp14	_____
<p>11) เวลาท่านป่วยท่านสามารถหาที่รักษาพยาบาลได้หรือไม่ (0) ไม่ใช่ (1) ใช่</p>			AccsToHealthC	_____
<p>12) สถานพยาบาลที่อยู่ใกล้บ้านท่านที่สุด ท่านคิดว่าอยู่ใกล้หรือไกลบ้านท่าน (0) ใกล้ (1) ไกล</p>			HlthCareClose	_____
<p>13) สถานพยาบาลที่อยู่ใกล้บ้านท่านตอนนี้เปรียบเทียบกับสถานพยาบาลที่อยู่ในพื้นที่เดิมก่อนที่ท่านจะอพยพเป็นอย่างไร (1) เหมือนเดิม (2) แย่กว่า (3) ดีกว่า</p>			QualityHealthC	_____

ตอนที่ ๓ : เศรษฐกิจ

<p>14) ท่านเชื่อว่าข้อตกลงกับ กฟผ. ในเรื่องของการโยกย้ายยุติธรรมดีแล้ว (0) ไม่ใช่ (1) ใช่</p> <p>โปรดอธิบายเหตุผลสั้น ๆ :</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>EGATFair</p>	<p>_____</p>
<p>15) ท่านประกอบอาชีพหลักคือ</p> <ol style="list-style-type: none"> กำลังศึกษา โรงเรียน..... ไม่มีอาชีพ เกษตรกรรม, กสิกรรม ทำไม้ (ตัดไม้, ค้ำไม้, ทำเฟอร์นิเจอร์) เก็บของป่า ค้าขาย รับจ้างทั่วไป (ไม่ได้ทำใน กฟผ.) รับจ้างใช้แรงงานในกฟผ. งานรัฐวิสาหกิจของกฟผ. ราชการ / รัฐวิสาหกิจทั่วไป 	<p>Aoccup</p>	<p>_____</p>
<p>16) ใน 1 ปีที่ผ่านมา ครอบครัวท่านมีรายได้หลัก ประมาณ บาท</p> <p>หรือ รายได้เสริม ประมาณ บาท</p> <p>ระบุอาชีพ</p>	<p>Asalary</p> <p>Asalary1</p>	<p>_____</p> <p>_____</p>
<p>17) ท่านได้รับการศึกษาถึงระดับไหน (เลือกระดับสูงสุดอย่างเดียว)</p> <ol style="list-style-type: none"> กำลังเรียน ไม่ได้เรียนหนังสือ ประถม มัธยม โรงเรียนพาณิชย์ อนุปริญญา ปริญญาตรีขึ้นไป 	<p>Aedu</p>	<p>_____</p>
<p>18) ปัจจุบันครอบครัวท่านมีรายได้มากกว่ารายได้ที่เคยมีเมื่ออยู่ที่เดิมหรือไม่ (0) ไม่ใช่ (1) ใช่</p>	<p>MreMoney</p>	<p>_____</p>
<p>19) อาชีพหลักของท่านก่อนย้ายมาคือ</p> <ol style="list-style-type: none"> กำลังศึกษา โรงเรียน..... ไม่มีอาชีพ เกษตรกรรม, กสิกรรม ทำไม้ (ตัดไม้, ค้ำไม้, ทำเฟอร์นิเจอร์) เก็บของป่า ค้าขาย รับจ้างทั่วไป (ไม่ได้ทำใน กฟผ.) รับจ้างใช้แรงงานในกฟผ. งานรัฐวิสาหกิจของกฟผ. ราชการ / รัฐวิสาหกิจทั่วไป 	<p>ChngOccu</p>	<p>_____</p>

20) ครอบครัวท่านมีเงินเก็บเดือนละ..... บาท	MnySaved	_____
21) ท่านมีสิ่งต่อไปนี้หรือไม่ (1) โทรทัศน์ (2) วิทยุ (3) สเตอริโอ (4) ตู้เย็น (5) จักรยานยนต์ (6) รถยนต์/รถกระบะ	TV RADIO STEREO REFRIGERATOR MOTORCYCLE AUTO	_____ _____ _____ _____ _____ _____
22) ถ้าท่านมีกรรมสิทธิ์ที่ดินท่านมีงาน ไร่	AmountLand	_____rai

ตอนที่ ๔ : โครงสร้างพื้นฐาน

23) ท่านคิดว่าโครงสร้างพื้นฐานต่อไปนี้ ดีกว่า แย่กว่า หรือเหมือนกับที่ที่ท่านเคยอยู่ก่อนย้ายมา			
ถนน	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
การระบายน้ำเสีย	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
โรงเรียน	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
ไฟฟ้า	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
ใกล้ตลาด	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
บริการด้านนันทนาการ	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
วัด	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน
			Roads Dranage Schools Electncity Market Recreation Temple

ตอนที่ ๕ : สิ่งแวดล้อม

24) ท่านคิดว่าน้ำที่สะอาดกว่า สกปรกกว่า หรือเหมือนกับที่ที่ท่านเคยอยู่ก่อนย้ายมา (1) สะอาดกว่า (2) สกปรกกว่า (3) เหมือนกัน	WaterQuality	_____
25) ท่านคิดว่าอากาศที่สะอาดกว่า สกปรกกว่า หรือเหมือนกับที่ที่ท่านเคยอยู่ก่อนย้ายมา (1) สะอาดกว่า (2) สกปรกกว่า (3) เหมือนกัน	AirQuality	_____
26) ที่นี่พืชเจริญเติบโตดีกว่า เหมือนกัน หรือแย่กว่ากับที่ที่ท่านเคยอยู่ก่อนย้ายมา (1) ดีกว่า (3) เหมือนกัน (2) ไม่ทราบ (4) แย่กว่า	CropsGrow	_____
27) ท่านมีที่ดินมากกว่าหรือน้อยกว่าที่เคยมีก่อนย้ายมา (1) มากกว่า (2) น้อยกว่า (3) เกือบเท่ากัน	MorLesLand	_____
28) ท่านอยู่ใกล้กับแหล่งรายได้หลักมากขึ้นกว่าที่อยู่เดิมหรือไม่ (0) ไม่ใช่ (1) ใช่	CloseToJob	_____

37) ท่านฉลองวันหยุดระดับ ชาติ หรืองานเทศกาลต่าง ๆ เช่น สงกรานต์, ลอยกระทง ฯลฯ หรือไม่ (0) ไม่เคย (1) บางครั้ง (2) ส่วนมาก (3) ทุกครั้ง ถ้าฉลอง, ฉลองกับใคร, ฉลองที่ไหน	CelebrateHldys	_____
38) ท่านเข้าร่วมกิจกรรมนันทนาการชุมชนและกิจกรรมทางสังคมปีละกี่ครั้ง	CommAct	_____
39) ท่านพบปะพูดคุยสังสรรค์กับเพื่อนบ้านหรือเยี่ยมเยียนเพื่อนบ้านสัปดาห์ละกี่ครั้ง (1) น้อยกว่า 1 ครั้ง (2) 1-3 ครั้ง (3) มากกว่า 3 ครั้ง	Socialize	_____

ตอนที่ ๘ : ข้อมูลทัศนคติ

40) ท่านรู้สึกที่รัฐบาลให้ความสำคัญสนับสนุนงบประมาณแก่ท่านและชุมชนของท่านเพียงพอเพียง (0) ไม่ใช่ (1) ใช่	GovtFinSupprt	_____
41) ท่านรู้สึกที่รัฐบาลให้ความสำคัญอย่างจริงจังต่อความคิดเห็นของท่าน (0) ไม่ใช่ (1) ใช่	GovtTkConcrms	_____
42) โดยทั่วไป ปัจจุบันท่านมีความสุขมากกว่าแต่ก่อนที่จะย้ายมา (0) ไม่ใช่ (1) ใช่	Happier	_____
43) ท่านอยากอยู่ที่เดิมมากกว่าอยากย้ายมาที่นี่ (0) ไม่ใช่ (1) ใช่	PreferStay	_____
44) ท่านรู้สึกว่า กฟผ. ให้การสนับสนุนชุมชนของท่านอย่างเพียงพอใช่หรือไม่ (0) ไม่ใช่ (1) ใช่	EGATSupport	_____
45) ท่านคิดว่า กฟผ. รับผิดชอบต่อปัญหาที่เกิดขึ้นกับชุมชนของท่านหรือไม่ (0) ไม่ใช่ (1) ใช่	EGATConcrms	_____
46) กฟผ. มีส่วนร่วมในกิจกรรมของชุมชนหรือไม่ (0) ไม่ใช่ (1) ใช่	EGATParticip	_____
47) ท่านมีความเห็นในแง่บวกหรือแง่ลบต่อ กฟผ. (0) แ่ลบ (1) แ่บวก (2) ไม่แสดงความคิดเห็น	EGATOpinion	_____

Person ID# _____ Family ID# _____ Date: _____

Village: (1) Mae Moh Seri (2) Moh Luang / Na Kam (3) Na Sak

Interviewer: _____

Family Information (to be answered by the head of the household)

How many of each type of person resides in your household:

- | | |
|----------------------|---------------------------|
| 1. Mother | 6. Uncle |
| 2. Father | 7. Great-Grandmother..... |
| 3. Grandmother | 8. Great-Grandfather..... |
| 4. Grandfather..... | 9. Child..... |
| 5. Aunt..... | 10. Friend/Other..... |

Total # of people _____

Section I – Basic Demographics

1) What is your birth date (Buddhist calendar)?	BDate	____ / ____ / ____
2) Gender (1) Male (2) Female	Gender	_____
3a) How many years have you lived in this village? _____	YrsInVlg	_____
3b) What village did you live in prior to this one? _____	OldVlg	_____

Section II – Health & Healthcare

4) Do you smoke cigarettes or homemade tobacco? (0) No (1) Yes (2) Ex-smoker At what age did you start smoking? Have you quit for longer than one month? (0) No (1) Yes ____yr. ____mo. How many cigarettes do you smoke per day? (1) 1-5 (2) 6-10 (3) 11-15 (4)16-25 (5) 26-35 (6) 36+	Smoke1 Smoke2 Smoke3 Smoke4 Smoke5	_____ _____ _____ _____ _____
--	--	---

Question #6 from the Chula survey

Section III – Economics

<p>14) Do you believe the terms of the agreement with EGAT to relocate were fair? _____ No _____ Yes Please briefly explain why: _____ _____ _____</p>	<p>EGATFair</p>	<p>_____</p>
<p>15) What is the primary occupation of the head of the household? 1. Student 2. No Occupation 3. Agricultural 4. Carpentry 5. Foraging in Forest 6. Merchant 7. Labor (non-EGAT) 8. Labor (for-EGAT) 9. EGAT Employee 10. Civil Servant</p> <p><i>Question #3 from the Chula survey</i></p>	<p>Aoccup</p>	<p>_____</p>
<p>16) What is your annual household income (main occupation)? _____ What is your additional household income? _____ From what source? _____</p> <p><i>Question #4 from the Chula survey</i></p>	<p>Asalary Asalary1</p>	<p>_____ _____</p>
<p>17) What is your level of education? 1. Studying 2. None 3. Through Grade6 4. Through Grade12 5. Trade School 6. Associates Deg. 7. Bachelor's Deg.</p> <p><i>Question #5 from the Chula survey</i></p>	<p>Aedu</p>	<p>_____</p>
<p>18) Do your family make more money now than it did before you moved? (0)No (1)Yes</p>	<p>MreMoney</p>	<p>_____</p>
<p>19) What was the main occupation of the head of your household before relocation?</p>	<p>ChngOccu</p>	<p>_____ 1. Student 2. No Occupation 3. Agricultural</p>

		___ 4. Carpentry ___ 5. Foraging in Forest ___ 6. Merchant ___ 7. Labor (non-EGAT) ___ 8. Labor (for-EGAT) ___ 9. EGAT Employee ___ 10. Civil Servant
20) How much money do your family save on a monthly basis? _____	MnySaved	_____
21) Which of the following possessions do you own? (1) TV (2) Radio (3) Stereo (4) Refrigerator (5) Motorcycle (6) Automobile	Possesions	_____
22) How much land do you have _____ rai.	AmountLa	_____

Section IV – Infrastructure

23) Would you consider the following items to be better, worse, or the same now compared to before relocation: (1=better, 2= worse, 3= same)		
Roads (1) Better (2) Worse (3) Same	Roads	_____
Drainage (1) Better (2) Worse (3) Same	Dranage	_____
Schools (1) Better (2) Worse (3) Same	Schools	_____
Availability of Electricity (1) Better (2) Worse (3) Same	Electricity	_____
Access to the Market (1) Better (2) Worse (3) Same	Market	_____
Recreational Facilities (1) Better (2) Worse (3) Same	Recreation	_____
Temple (1) Better (2) Worse (3) Same	Temple	_____

<p>33) Do you regularly participate in community construction projects (building houses, bridges, fences, public buildings...)? (0) never (1) sometimes (2)most times (3) everytime</p>	Construction	_____
<p>34) Are you involved in any community groups? (0)No (1)Yes If So, what? _____</p>	CommGroups	_____
<p>35) About how often do you visit the Temple? (0) Never (1) Every Day (2) 1 time per week (3) 2 or 3 times per week (4) 1 time per month (5) Only on special religious days</p>	VisitTemple	_____
<p>36) How many times per year do you attend community activities at the temple? _____</p>	ComTempleAct	_____
<p>37) Do you celebrate holidays (religious or National)? (0) Never (1) Sometimes (2) Most times (3) Every time If yes, with who and where? _____</p>	CelebrateHldys	_____
<p>38) How many times per year do you attend community, recreational, and social activities? _____</p>	CommAct	_____
<p>39) How often per week do you socialize or visit with your neighbors? (1) Less than 1 time (2)1-3 times (3)More than 1-3 times</p>	Socialize	_____

Section VII – Attitudes

<p>40) Do you feel that the government provides your community with enough financial support? (0)No (1)Yes</p>	GovtFinSupprt	_____
<p>41) Do you feel that your concerns are taken seriously by the government? (0)No (1)Yes</p>	GovtTkConcerns	_____

<p>Q1) In general, are you happier now than before you moved? (0)No (1)Yes</p>	Happier	_____
<p>Q2) Would you have preferred to stay instead of move? (0)No (1)Yes</p>	PreferStay	_____
<p>Q3) Do you feel that EGAT provides your community with enough support? (0)No (1)Yes</p>	EGATSupport	_____
<p>Q4) Do you feel that your concerns are taken seriously by EGAT? (0)No (1)Yes</p>	EGATConcerns	_____
<p>Q5) Does EGAT participate in any of your community activities? (0)No (1)Yes</p>	EGATParticip	_____
<p>Q6) Do you have a positive or negative opinion of EGAT? Do you think that they respond and act fairly to issues involving the villages?</p>	EGATOpinion	_____

Appendix E
Thai and English Na Sak/Mae Luang Surveys

หมายเลขบุคคล _____ หมายเลขครอบครัว _____ วันเดือนปี _____

Village: (1) เมะเสรี (2) เมะหลวง/นาแฆม (3) นาสัก

ผู้สัมภาษณ์: _____

ข้อมูลครัวเรือน (ตอบครั้งเดียวโดยหัวหน้าครัวเรือน)

โปรดให้ข้อมูลเกี่ยวกับคนแต่ละคนที่อยู่ในครัวเรือนของท่าน

1. แม่.....	คน	6. บ่า, ชาย.....	คน
2. พ่อ.....	คน	7. ปู่, ตา.....	คน
3. ลูก.....	คน	8. ทวดหญิง.....	คน
4. ป้า.....	คน	9. ทวดชาย.....	คน
5. ลุง.....	คน	10. อื่นๆ.....	คน

รวมจำนวนคนในครัวเรือน _____ คน

ตอนที่ ๑: ข้อมูลประชากร

1) วัน เดือน ปี เกิด ของท่าน คือ	BDate	___/___/___
2) เพศ (1) ชาย (2) หญิง	Gender	_____
3ก) ท่านอยู่ที่หมู่บ้านนี้มากี่ปีแล้ว (มากกว่า 5 ปี ไม่ต้องถามข้อ 3ข) _____	YrsInVlg	_____
3ข) หมู่บ้านที่ท่านอยู่ก่อนหน้าที่จะมาอยู่ที่นี่ คือ _____	OldVlg	_____

ตอนที่ ๒: ข้อมูลสาธารณสุข

4) เวลาท่านป่วยท่านสามารถหาที่รักษาพยาบาลได้หรือไม่ (0) ไม่ใช่ (1) ใช่	AccsToHealthC	_____
5) สถานพยาบาลที่อยู่ใกล้บ้านท่านที่สุดท่านคิดว่าอยู่ใกล้หรือไกลบ้านท่าน (0) ใกล้ (1) ไกล	HlthCareClose	_____
6) ท่านคิดว่าคุณภาพของสถานพยาบาลเป็นอย่างไร (0) ไม่มีดี (1) ปานกลาง (2) ดี (3) ดีมาก	QualHealthC	_____

<p>13) ท่านเป็นสมาชิกกลุ่มใด ๆ ในชุมชน หรือไม่ (0) ไม่ใช่ (1) ใช่ ถ้าเป็น เป็นสมาชิกกลุ่มใดบ้าง</p> <hr/> <hr/>	CommGroups _____	
<p>14) ท่านไปวัดบ่อยเพียงใด (0) ไม่ได้ไปเลย (1) ทุกวัน (2) สัปดาห์ละครั้ง (3) สัปดาห์ละ ๒ - ๓ ครั้ง (4) เดือนละครั้ง (5) ไปเฉพาะวันสำคัญทางศาสนา</p>	VisitTemple	_____
<p>15) ท่านเข้าร่วมกิจกรรมชุมชนที่วัดปีละกี่ครั้ง</p> <hr/>	ComTempleAct	_____
<p>16) ท่านฉลองวันหยุดประจำชาติหรือวันหยุดเทศกาลต่างๆ เช่น สงกรานต์, ลอยกระทง ฯลฯ หรือไม่ (0) ไม่เคย (1) บางครั้ง (2) ส่วนมาก (3) ทุกครั้ง ถ้าฉลอง, ฉลองกับใคร, ฉลองที่ไหน</p> <hr/>	CelebrateHldys	_____
<p>17) ท่านเข้าร่วมกิจกรรมนันทนาการชุมชนและกิจกรรมทางสังคมปีละกี่ครั้ง</p> <hr/>	CommAct	_____
<p>18) ท่านพบปะพูดคุยสังสรรค์กับเพื่อนบ้านหรือเยี่ยมเยียนเพื่อนบ้านสัปดาห์ละกี่ครั้ง (1) น้อยกว่า 1 ครั้ง (2) 1-3 ครั้ง (3) มากกว่า 3 ครั้ง</p>	Socialize	_____

ตอนที่ ๖ : ข้อมูลทัศนคติ

<p>19) ท่านรู้สึกว่ารัฐบาลให้ความสำคัญสนับสนุนงบประมาณแก่ท่านและชุมชนของท่านอย่างพอเพียง</p> <p>(0) ไม่ใช่ (1) ใช่</p>	GovtFinSupprt	_____
<p>20) ท่านรู้สึกว่ารัฐบาลให้ความสำคัญอย่างจริงจังต่อความคิดเห็นของท่าน</p> <p>(0) ไม่ใช่ (1) ใช่</p>	GovTkConcms	_____
<p>21) ท่านรู้สึกว่า กฟผ. ให้การสนับสนุนชุมชนของท่านอย่างเพียงพอใช่หรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	EGATSupport	_____
<p>22) ท่านคิดว่า กฟผ. รับทราบปัญหาที่เกิดขึ้นกับชุมชนของท่านหรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	EGATConcrns	_____
<p>23) กฟผ. มีส่วนร่วมในกิจกรรมของชุมชนหรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	EGATParticip	_____
<p>24) ท่านมีความเห็นใน <u>แง่บวกหรือแง่ลบ</u> ต่อ กฟผ.</p> <p>(0) แง่ลบ (1) แง่บวก (2) ไม่แสดงความคิดเห็น</p>	EGATOpinion	_____

Person ID# _____ Family ID# _____ Date: _____

Village: (1) Mae Moh Seri (2) Moh Luang / Na Kam (3) Nasak

Interviewer: _____

Family Information (to be answered by the head of the household)

How many of each type of person resides in your household:

- | | |
|----------------------|---------------------------|
| 1. Mother | 6. Uncle |
| 2. Father | 7. Great-Grandmother..... |
| 3. Grandmother | 8. Great-Grandfather..... |
| 4. Grandfather..... | 9. Child..... |
| 5. Aunt..... | 10. Friend/Other..... |

Total # of people _____

Section I – Basic Demographics

1) What is your birthdate (Buddhist calendar)?	BDate	____ / ____ / ____
2) Gender (1) Male (2) Female	Gender	_____
3a) How many years have you lived in this village? _____	YrsInVlg	_____
* If 5 years or less, answer question 3b.		
3b) What village did you live in prior to this one? _____	OldVlg	_____

Section II – Health & Healthcare

4) Do you feel that you have adequate access to healthcare? (0) No (1) Yes	AccsToHlthCare	_____
5) Do you feel that the nearest healthcare facility is reasonably close or far from you? (0) Close (1) Far	HlthCareClose	_____
6) Please rate the overall quality of this facility: (0) Poor (1) Fair (2) Good (3)Excellent	QltyHlthCare	_____

Section III – Economics

7) How much money does your household save on a monthly basis? _____	MnySaved	_____
8) What possessions does your household you own? Check all that apply: (1) Television (2) Radio (3) Stereo (4) Refrigerator (5) Motorcycle (6) Automobile	Possessions	_____ _____ _____ _____
9) How much land do you have? _____ rai	Land	_____

Section IV – Infrastructure

10) How would you rate the following facilities (0=poor, 1=fair, 2=good, 3=excellent)? Roads Water Drainage Schools Availability of Electricity Access to the Market Recreational Facilities (places to have fun) Temple	Roads Water Drainage Schools Electricity Market Recreation Temple	_____ _____ _____ _____ _____ _____ _____ _____
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Section V – Social Culture

11) Do you regularly help neighbors with any of the following? (Check all that apply) (1) Planting / Harvesting Crops (2) Cooking & Meals (3) Cleaning / Household Chores (4) Household repairs (5) Child care (like babysitting) (6) Livestock care (feeding, cleaning, grazing...) (7) Community Chores (funerals, religious, social...)	HelpNeighbors	_____
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<p>12) Do you regularly participate in community construction projects (building houses, bridges, fences, public buildings...)? (0) Never (1) Sometimes (2) Most of the time (3) Every time</p>	<p>Construction</p>	<p>_____</p>
<p>13) Are you involved in any community groups? (0) No (1) Yes</p> <p>If So, what? _____</p>	<p>CommGroups</p>	<p>_____</p>
<p>14) About how often do you visit the Temple? (0) Never (1) Every Day (2) 1 time per week (3) 2 or 3 times per week (4) 1 time per month (5) Only on special religious days</p>	<p>VisitTemple</p>	<p>_____</p>
<p>15) How many times per year do you attend community activities at the temple? _____</p>	<p>ComTempleAct</p>	<p>_____</p>
<p>16) Do you celebrate holidays (religious or National)? (0) Never (1) Sometimes (2) Most of the time (3) Every time</p> <p>If yes, with who and where? _____</p>	<p>CelebrateHldys</p>	<p>_____</p>
<p>17) How many times per year do you attend village recreational, and social activities? _____</p>	<p>CommAct</p>	<p>_____</p>
<p>18) How often per week do you socialize or visit with your neighbors? (1) Less than 1 time (2) 1-3 times (3) More than 1-3 times</p>	<p>Socialize</p>	<p>_____</p>

Section VII – Attitudes

19) Do you feel that the government provides your village with enough financial support? (0) No (1) Yes	GovtFinSupprt	_____
20) Do you feel that your concerns are taken seriously by the government? (0) No (1) Yes	GovtTkConcerns	_____
21) Do you feel that EGAT provides your community with enough support? (0) No (1) Yes	EGATSupport	_____
22) Do you feel that your concerns are taken seriously by EGAT? (0) No (1) Yes	EGATConcerns	_____
23) Does EGAT participate in any of your community activities? (0) No (1) Yes	EGATParticipate	_____
24) Do you have a positive or negative opinion of EGAT.	EGATOpinion	_____

Appendix F
Thai and English Moh Luang/Na Kam Surveys

หมายเลขบุคคล _____ หมายเลขครอบครัว _____

วันเดือนปี _____ Village: (1) เมาะเสรี (2) เมาะหลวง / นานชม (3) นาลัก

ผู้สัมภาษณ์: _____

ข้อมูลครัวเรือน (ตอบครั้งเดียวโดยหัวหน้าครัวเรือน)

โปรดให้ข้อมูลเกี่ยวกับคนแต่ละคนที่อยู่ในครัวเรือนของท่าน

1. แม่..... คน	6. ย่า, ยาย..... คน
2. พ่อ..... คน	7. ปู่, ตา..... คน
3. ลูก..... คน	8. ทวดหญิง..... คน
4. ป้า..... คน	9. ทวดชาย..... คน
5. ลุง..... คน	10. อื่น ๆ..... คน
	รวมจำนวนคนในครัวเรือน..... คน

ตอนที่ ๑: ข้อมูลประชากร

1) วัน เดือน ปี เกิด ของท่าน คือ	BDate	____/____/____
2) เพศ (1) ชาย (2) หญิง	Gender	_____
3ก) ท่านอยู่ที่หมู่บ้านนี้มากี่ปีแล้ว (มากกว่า 5 ปี ไม่ต้องตอบข้อ 3ข) _____	YrsInVlg	_____
3ข) หมู่บ้านที่ท่านอยู่ก่อนหน้าที่จะมาอยู่ที่นี่ คือ _____	OldVlg	_____

ตอนที่ ๒: ข้อมูลสาธารณสุข

๑) เวลาที่ท่านป่วยท่านสามารถหาที่รักษาพยาบาลได้หรือไม่ (0) ไม่ใช่ (1) ใช่	CanGetHealthC	_____
๒) สถานพยาบาลที่อยู่ใกล้บ้านท่านที่สุด ท่านคิดว่าอยู่ใกล้หรือไกลบ้านท่าน (0) ใกล้ (1) ไกล	HowFarFromH	_____

6) สถานพยาบาลที่อยู่ใกล้บ้านท่านตอนนี้เปรียบเทียบกับสถานพยาบาลที่อยู่ในพื้นที่เดิมก่อนที่ท่านจะอพยพเป็นอย่างไร (1) เหมือนเดิม (2) แย่กว่า (3) ดีกว่า	QualityHealthC	_____
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ตอนที่ ๓ : เศรษฐกิจ

7) ท่านเชื่อว่าข้อตกลงกับ กฟผ. ในเรื่องของการโยกย้ายยุติธรรมดีแล้ว (0) ไม่ใช่ (1) ใช่ โปรดอธิบายเหตุผลสั้น ๆ : _____ _____ _____	EGATFair	_____
8) ปัจจุบันครอบครัวท่านมีรายได้มากกว่ารายได้ที่เคยมีเมื่ออยู่ที่เดิมหรือไม่ (0) ไม่ใช่ (1) ใช่	MreMoney	_____
9) อาชีพหลักของท่านก่อนย้ายมาคือ 1. กำลังศึกษา โรงเรียน..... 2. ไม่มีอาชีพ 3. เกษตรกรรม, กสิกรรม 4. ทำไม้ (ตัดไม้, ค้ำไม้, ทำเฟอร์นิเจอร์) 5. เก็บของป่า 6. ค้าขาย 7. รับจ้างทั่วไป (ไม่ได้ทำใน กฟผ.) 8. รับจ้างให้แรงงานใน กฟผ. 9. งานรัฐวิสาหกิจของ กฟผ. 10. ราชการ / รัฐวิสาหกิจทั่วไป	ChagOccu	_____
10) ครอบครัวท่านมีมี นกั บดี และ..... บาท	MrySaved	_____
11) ท่านมีสิ่งต่อไปนี้หรือไม่ (1) โทรทัศน์ (2) วิทยุ (3) สเตอริโอ (4) ตู้เย็น (5) จักรยานยนต์ (6) รถยนต์/รถกระบะ	TV RADIO STEREO REFRIGERATOR MOTORCYCLE AUTO	_____ _____ _____ _____ _____
12) ถ้าท่านมีกรรมสิทธิ์ที่ดินท่านมี.....งานไร่	AmountLand	_____ไร่

<p>22) ท่านช่วยเหลือเพื่อนบ้านเป็นประจำในเรื่องต่อไปนี้ (ตอบให้หลายข้อ)</p> <p>(1) การเพาะปลูก / การเก็บเกี่ยว</p> <p>(2) การทำอาหาร และ อานหาร</p> <p>(3) ทำความสะอาด / งานบ้าน</p> <p>(4) ซ่อมบ้าน</p> <p>(5) ดูแลเด็ก</p> <p>(6) เลี้ยงสัตว์ (ให้อาหาร, ทำความสะอาด, ...)</p> <p>(7) งานของชุมชน (งานศพ, กิจกรรมทางศาสนา, กิจกรรมสังฆกรรม)</p>	<p>HlpCrops</p> <p>HlpCook</p> <p>HlpClean</p> <p>HlpRepair</p> <p>HlpChildCare</p> <p>HlpLivestock</p> <p>HlpComChor</p>	
<p>23) ท่านมีส่วนร่วมเป็นประจำในงานก่อสร้างของชุมชน (สร้างบ้าน, สะพาน, รั้ว, อาคารสาธารณะ ...)</p> <p>(0) ไม่เคย (1) บางครั้ง (2) ส่วนมาก (3) ทุกครั้ง</p>	<p>Construction</p>	
<p>24) ท่านเป็นสมาชิกกลุ่มใด ๆ ในชุมชน หรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p> <p>ถ้าเป็น เป็นสมาชิกกลุ่มใดบ้าง</p> <hr/> <hr/>	<p>CommGroups</p>	
<p>25) ใน 1 ปี ที่ผ่านมา ท่านไปวัดบ่อยเพียงใด</p> <p>(0) ไม่ได้ไปเลย</p> <p>(1) ทุกวัน</p> <p>(2) สัปดาห์ละครั้ง</p> <p>(3) สัปดาห์ละ ๒ - ๓ ครั้ง</p> <p>(4) เดือนละครั้ง</p> <p>(5) ไปเฉพาะวันสำคัญทางศาสนา</p>	<p>Temple</p>	
<p>26) ท่านเข้าร่วมกิจกรรมชุมชนที่วัดปีละกี่ครั้ง</p> <hr/>	<p>ComTempleAct</p>	
<p>28) ท่านเข้าร่วมกิจกรรมนันทนาการชุมชนและกิจกรรมทางสังคมปีละกี่ครั้ง</p> <hr/>	<p>ComAct</p>	
<p>29) ท่านพบปะพูดคุยสังสรรค์กับเพื่อนบ้านหรือเยี่ยมเยียนเพื่อนบ้านสัปดาห์ละกี่ครั้ง</p> <p>(1) น้อยกว่า 1 ครั้ง (2) 1-3 ครั้ง (3) มากกว่า 3 ครั้ง</p>	<p>Hzo</p>	

ตอนที่ ๘ : ข้อมูลทัศนคติ

<p>30) ท่านรู้สึกว่ามีฐานะยากจนกว่าคนอื่นหรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	<p>ComAct</p>	
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ตอนที่ ๔ : โครงสร้างพื้นฐาน

13) ท่านคิดว่าโครงสร้างพื้นฐานต่อไปนี้ ดีกว่า แย่กว่า หรือเหมือนกับที่ที่ท่านเคยอยู่ก่อนย้ายมา					
ถนน	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Roads	_____
การระบายน้ำเสีย	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Drainage	_____
โรงเรียน	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Schools	_____
ไฟฟ้า	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Electricity	_____
ใกล้ตลาด	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Market	_____
บริการด้านนันทนาการ	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Recreation	_____
วัด	(1) ดีกว่า	(2) แย่กว่า	(3) เหมือนกัน	Temple	_____

ตอนที่ ๕ : สิ่งแวดล้อม

14) ท่านคิดว่าน้ำที่สะอาดกว่า สกปรกกว่า หรือเหมือนกับ ที่ที่ท่านเคยอยู่ก่อนย้ายมา					
(1) สะอาดกว่า	(2) สกปรกกว่า	(3) เหมือนกัน	WaterQuality	_____	
15) ท่านคิดว่าอากาศที่สะอาดกว่า สกปรกกว่า หรือเหมือนกับ ที่ที่ท่านเคยอยู่ก่อนย้ายมา					
(1) สะอาดกว่า	(2) สกปรกกว่า	(3) เหมือนกัน	AirQuality	_____	
16) ที่มีพืชเจริญเติบโตดีกว่า เหมือนกัน หรือแย่กว่ากับที่ที่ท่านเคยอยู่ก่อนย้ายมา					
(1) ดีกว่า	(3) เหมือนกัน	(2) ไม่ทราบ	(4) แย่กว่า	CropsGrow	_____
17) ท่านมีที่ดินมากกว่าหรือน้อยกว่าที่เคยมีก่อนย้ายมา					
(1) มากกว่า	(2) น้อยกว่า	(3) เกือบเท่ากัน	MorLesLand	_____	
18) ท่านอยู่ใกล้กับแหล่งรายได้หลักมากขึ้นกว่าที่อยู่เดิมหรือไม่					
(0) ไม่ใช่	(1) ใช่		CloseToJob	_____	
19) โดยทั่วไปแล้ว บ้านหลังนี้ดีกว่าหรือแย่กว่าบ้านหลังเก่าที่อยู่ก่อนย้ายมา					
(1) ดีกว่า	(2) แย่กว่า	(3) เกือบเหมือนกัน	HouseBtrWrs	_____	

ตอนที่ ๖ : ข้อมูลวัฒนธรรมทางสังคม

20) ท่านได้คุยร่วมกับคนในครอบครัวเดิม ๆ ที่เคยอยู่ด้วยกันก่อนย้ายมาหรือไม่				
(0) ไม่ใช่	(1) ใช่		Family	_____
21) ท่านอยู่ใกล้เพื่อนบ้านเดิมที่เคยอยู่ใกล้กันก่อนย้ายมาหรือไม่				
(0) ไม่ใช่	(1) ใช่		Neighbors	_____

<p>31) ท่านรู้สึกที่รัฐบาลให้ความสำคัญอย่างจริงจังต่อความคิดเห็นของท่าน</p> <p>(0) ไม่ใช่ (1) ใช่</p>	GovtTkConcerns	_____
<p>32) โดยทั่วไป ปัจจุบันท่านมีความสุขมากกว่าแต่ก่อนที่จะย้ายมา</p> <p>(0) ไม่ใช่ (1) ใช่</p>	Happier	_____
<p>33) ท่านอยากอยู่ที่เดิมมากกว่าอยากย้ายมาที่นี่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	PreferStay	_____
<p>34) ท่านรู้สึกว่า กฟผ. ให้การสนับสนุนชุมชนของท่านอย่างเพียงพอใช่หรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	EGATSupport	_____
<p>35) ท่านคิดว่า กฟผ. รับทราบปัญหาที่เกิดขึ้นกับชุมชนของท่านหรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	EGATConcerns	_____
<p>36) กฟผ. มีส่วนร่วมในกิจกรรมของชุมชนหรือไม่</p> <p>(0) ไม่ใช่ (1) ใช่</p>	EGATParticip	_____
<p>37) ท่านมีความเห็นในแง่บวกหรือแง่ลบต่อ กฟผ.</p> <p>(0) แ่ลบ (1) แ่บวก (2) ไม่แสดงความคิดเห็น</p>	EGATOpinion	_____

Person ID# _____ Family ID# _____ Date: _____

Village: (1) Mae Moh Seri (2) Moh Luang / Na Kam (3) Nasak

Interviewer: _____

Family Information (to be answered by the head of the household)

How many of each type of person resides in your household:

1. Mother	6. Uncle
2. Father	7. Great-Grandmother.....
3. Grandmother	8. Great-Grandfather.....
4. Grandfather.....	9. Child.....
5. Aunt.....	10. Friend/Other.....

Total # of people _____

Section I – Basic Demographics

1) What is your birthdate (Buddhist calendar)?	Bdate	____ / ____ / ____
2) Gender (1) Male (2) Female	Gender	_____
3a) How many years have you lived in this village? _____	YrsInVlg	_____
3b) What village did you live in prior to this one? _____	OldVlg	_____

Section II – Health & Healthcare

4) Do you feel that you have adequate access to healthcare? (0) No (1) Yes	AccsToHlthCare	_____
5) Do you feel that the nearest healthcare facility is reasonably close to you? (1) Close (1) Far	HlthCareClose	_____
6) Please rate the overall quality of this facility, relative to what you had before you moved: (1) worse (2) same (3) better	QltyHlthCare	_____

Section III – Economics

<p>7) Do you believe the terms of the agreement with EGAT to relocate were fair? (0) No (1) Yes Please briefly explain why:</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>EGATFair</p>	<p>_____</p>
<p>8) Do you make more money now than you did before you moved? (0) No (1) Yes</p>	<p>MreMoney</p>	<p>_____</p>
<p>9) What was the main occupation of the head of your household before relocation?</p>	<p>ChngOccu</p>	<p>__ 1. Student __ 2. No Occup. __ 3. Agricultural __ 4. Carpentry __ 5. Foraging in Forest __ 6. Merchant __ 7. Labor (non-EGAT) __ 8. Labor (for-EGAT) __ 9. EGAT Employee __ 10. Civil Servant</p>
<p>10) How much money does your family save on a monthly basis? _____</p>	<p>MnySaved</p>	<p>_____</p>
<p>11) Which of the following possessions does your family own? (7) TV (8) Radio (9) Sterco (10) Refrigerator (11) Motorcycle (12) Automobile (13) Land</p>	<p>Possesions</p>	<p>_____</p>
<p>12) How much land do you have _____ rai.</p>	<p>AmountLa</p>	<p>_____</p>

Section IV – Infrastructure

13) Would you consider the following items to be better, worse, or the same now compared to before relocation: (1=better, 2= worse, 3= same)					
Roads	(1) Better	(2) Worse	(3) Same	Roads	_____
Water	(1) Better	(2) Worse	(3) Same	Water	_____
Drainage	(1) Better	(2) Worse	(3) Same	Drainage	_____
Schools	(1) Better	(2) Worse	(3) Same	Schools	_____
Availability of Electricity	(1) Better	(2) Worse	(3) Same	Electricity	_____
Access to the Market	(1) Better	(2) Worse	(3) Same	Market	_____
Recreational Facilities	(1) Better	(2) Worse	(3) Same	Recreation	_____
Temple	(1) Better	(2) Worse	(3) Same	Temple	_____

Section V – Environment

14) Do you think the water is cleaner, dirtier, or the same in the place you used to live? (1) Cleaner (2) Dirtier (3) Same	WaterQuality	_____
15) Do you think the air is cleaner, dirtier, or the same in the place you used to live? (1) Cleaner (2) Dirtier (3) Same	AirQuality	_____
16) Do crops grow better here, the same, or worse than in the place you used to live? (1) Better (3) Same (2) Don't know (4) Worse	CropsGrow	_____
17) Do you have more or less land than where you used to live? (1) More (2) Less (3) Almost the same	MorLesLand	_____
18) Are you closer to your main occupation than you were before relocation? (0)No (1)Yes	CloseToJob	_____
19) In general, is this house better or worse than your old one? (1) Better (2) Worse (3) Almost the same	HouseBtrWrs	_____

Section VI – Social Culture

<p>20) Do you live with the same people you lived with before you moved? (0)No (1)Yes</p>	<p>LivWthPpl</p>	<p>_____</p>
<p>21) Do you live close to the same neighbors you lived close to before you moved? (0)No (1)Yes</p>	<p>LivNearNbrs</p>	<p>_____</p>
<p>22) Do you regularly help neighbors with any of the following? (Check all that apply) (1) Planting / Harvesting Crops (2) Cooking & Meals / Eating with neighbors (3) Cleaning / Household Chores (4) Household repairs (5) Child care (like babysitting) (6) Livestock care (feeding, cleaning, grazing...) (7) Community Chores (funerals, religious, social...)</p>	<p>HlpCrops HlpCook HlpClean HlpRepair HlpChildCare HlpLivestock HlpComChor</p>	<p>_____ _____ _____ _____ _____ _____ _____</p>
<p>23) Do you regularly participate in community construction projects (building houses, bridges, fences, public buildings...)? (0) never (1) sometimes (2)most times (3) everytime</p>	<p>Construction</p>	<p>_____</p>
<p>24) Are you involved in any community groups? (0)No (1)Yes If So, what? _____</p>	<p>CommGroups</p>	<p>_____</p>
<p>25) About how often do you visit the Temple? (6) Never (7) Every Day (8) 1 time per week (9) 2 or 3 times per week (10) 1 time per month (11) Only on special religious days</p>	<p>VisitTemple</p>	<p>_____</p>
<p>26) How many times per year do you attend community activities at the temple? _____</p>	<p>ComTempleAct</p>	<p>_____</p>
<p>27) Do you celebrate holidays (religious or National)? (0) Never (1) Sometimes (2) Most times (3) Every time If yes, with who and where? _____</p>	<p>CelebrateHldys</p>	<p>_____</p>
<p>28) How many times per year do you attend community, recreational, and social activities?</p>	<p>CommAct</p>	<p>_____</p>

<p>29) How often per week do you socialize or visit with your neighbors? (1) Less than 1 time (2)1-3 times (3)More than 1-3 times</p>	Socialize	_____
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Section VII – Attitudes

<p>30) Do you feel that the government provides your community with enough financial support? (0)No (1)Yes</p>	GovtFinSupprt	_____
<p>31) Do you feel that your concerns are taken seriously by the government? (0)No (1)Yes</p>	GovtTkConcerns	_____
<p>32) In general, are you happier now than before you moved? (0)No (1)Yes</p>	Happier	_____
<p>33) Would you have preferred to stay instead of move? (0)No (1)Yes</p>	PreferStay	_____
<p>34) Do you feel that EGAT provides your community with enough support? (0) No (1)Yes</p>	EGATSupport	_____
<p>35) Do you feel that your concerns are taken seriously by EGAT? (0) No (1)Yes</p>	EGATConcerns	_____
<p>36) Does EGAT participate in any of your community activities? (0) No (1)Yes</p>	EGATParticip	_____
<p>37) Do you have a positive or negative opinion of EGAT? Do you think that they respond and act fairly to issues involving the villages?</p>	EGATFair	_____

Appendix G
Thai and English Focus Group Directives

Focus Group: Village leaders

Aim: Obtain large amounts of data relating to agreement with EGAT; political activity/involvement/awareness; economic health of the entire village; overall attendance of social events and number of existing programs; government financial support; cultural lifestyle of community

Questions:

Do the villagers cooperate and help each other a lot? More, less, or the same than before moving?

Do villagers frequently socialize with one another?

Are there many community groups? If so, how is their attendance?

Do you think that the villagers are generally happy?

Do you think that the villagers were happier before they moved or now?

Do many of the villagers celebrate holidays? To what extent?

Are the members of the community close with one another, or do more people keep to themselves?

Do the villagers feel that they have some power and control over their lives?

How did the villagers feel about the agreement made with EGAT before they moved?

Did their feelings about it change as time went on?

How did the villagers feel about EGAT before moving?

How do you think that their feelings have changed?

How would you describe the village economically (wealthy, poor, etc.)?

Do you think that the village is richer or poorer after moving?

Do you think that the infrastructure (electricity, water supply, roads, schools, etc.) is well maintained? Do you think that it is continuing to improve?

Do you think that there is opportunity for the village to grow and prosper?

Do you think that the people would have preferred to stay or wanted to move?

Do the villagers understand the way in which the government works?

Do the villagers feel that the government is responsive and sensitive to their needs? Do you feel that the government is responsive and sensitive?

Do you feel that the government provides you with enough financial assistance?

What is the budget allocation from the government?

Do you feel that it is a sufficient amount?

Do many people become involved in the affairs concerning the village or with the larger provincial government?

Would you say that people are more or less active politically after moving?

Do the people feel isolated?

Focus Group: Younger generation of villagers (under 30yrs old)

Aim: Discuss differences between the generations in order to get a feel for any changes in the culture of the village.

Questions:

Do you think that your religious beliefs are very different from those of the older people in your village?

Do you think that your goals are very different from those of the older people in your village?

Do you plan to live in the village for the rest of your life?

Do you plan to live the same lifestyle as your grandparents? As your parents?

Do you feel alienated from your parents or grandparents?

Do you think that the things that are important to you are different than those that are important to your parents or grandparents?

Did you notice any changes in the village after moving? What were they? Did the changes make the village better or worse?

Focus Group: Older generation of villagers (over 55 years old)

Aim: Discuss differences between the generations in order to get a feel for any changes in the culture of the village.

Questions:

Do you think that your religious beliefs are very different from those of the younger people in your village?

Do you think that your goals are very different from those of the younger people in your village?

Do you think that the things that are important to you are different than those that are important to your children or grandchildren?

How did you feel about moving?

Did you notice any changes in the village after moving? What were they? Did the changes make the village better or worse?

Do you want your children or your grandchildren to live in the village for the rest of their lives?

Focus Group: Monks

Aim: Obtain information about the social and cultural aspects of the village, as well as any changes in religious practices.

Questions:

Do the people go to the temple frequently?

More or less frequently than before they moved?

Have you witnessed any change in the strength of religious beliefs?

What level of importance does the temple hold in the village?

How many and what kind of activities are centered around the temple?

Are there more, fewer, or the same number of programs centered around the temple?

Has the importance of the temple in village life changed since moving?

Do the villagers cooperate and help each other a lot? More, less, or the same than before moving?

Do villagers frequently socialize with one another?

Are there many community groups? If so, how is their attendance?

How happy do you think that the villagers are?

Do you think that the villagers were happier before they moved or now?

Do many of the villagers celebrate holidays? To what extent and how?

Are the members of the community close with one another, or do more people keep to themselves?

Do the villagers feel that they have some power and control over their lives?

Do the villagers feel isolated?

Focus Group: พระ

เป้าหมาย - เพื่อหาข้อมูลเกี่ยวกับประเด็นทางวัฒนธรรมและสังคมของชุมชน
ตลอดจนการเปลี่ยนแปลงเกี่ยวกับการ
ปฏิบัติทางศาสนา

คำถาม

- ประชาชนมาวัดบ่อยหรือไม่ มากกว่า หรือ น้อยกว่าก่อนที่จะย้าย
- ท่านเห็นการเปลี่ยนแปลงใด ๆ เกี่ยวกับความมั่นคงทางความเชื่อด้านศาสนาหรือไม่
- วัดมีความสำคัญในระดับใดในหมู่บ้าน
- จำนวนกิจกรรมและประเภทของกิจกรรม ที่ใช้วัดเป็นศูนย์กลาง
- จำนวนโครงการต่าง ๆ ที่ใช้วัดเป็นศูนย์กลาง มากกว่า น้อยกว่า หรือ เท่ากับเมื่อก่อน
- ความสำคัญของวัดในวิถีชีวิตของหมู่บ้านเปลี่ยนแปลงไปหรือไม่ตั้งแต่ย้ายมา
- ชาวบ้านร่วมมือกันและช่วยเหลือกันและกันมากหรือไม่ มากกว่า น้อยกว่า หรือ เท่ากับก่อนย้ายมา
- ชาวบ้านพบปะพูดคุยสังสรรค์กันบ่อยหรือไม่
- มีกลุ่มต่าง ๆ ในชุมชนมากหรือไม่ ถ้ามี ได้รับความสนใจเอาใจใส่หรือไม่
- ท่านคิดว่าชาวบ้านมีความสุขมากน้อยเพียงใด
- ท่านคิดว่าชาวบ้านมีความสุขที่ไหนมากกว่ากันระหว่างที่เดิมกับที่นี่
- ชาวบ้านมีความสัมพันธ์ใกล้ชิดกันหรือไม่ หรือต่างคนต่างอยู่มากขึ้น
- ชาวบ้านรู้สึกว่ามีอำนาจและควบคุมชีวิตตนเองได้หรือไม่
- ชาวบ้านรู้สึกว่าถูกกันให้อยู่โดดเดี่ยวหรือไม่

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Focus Group: คนหนุ่มสาว (อายุต่ำกว่า ๓๐ ปี)

เป้าหมาย - เพื่อหาความแตกต่างระหว่างรุ่นอายุ
เพื่อสำรวจความเปลี่ยนแปลงทางวัฒนธรรมของชุมชน

คำถาม

- ท่านคิดว่าความเชื่อทางศาสนาของท่านแตกต่างจากคนที่แก่กว่าในหมู่บ้านของท่านหรือไม่
- ท่านคิดว่าเป้าหมายของท่านแตกต่างจากคนที่แก่กว่าในหมู่บ้านของท่านหรือไม่
- ท่านคิดว่าจะอยู่ในหมู่บ้านนี้ไปจนตายหรือไม่
- ท่านคิดจะดำเนินวิถีชีวิตแบบเดียวกับ ปู่ย่าตายาย หรือพ่อแม่ หรือไม่
- ท่านรู้สึกแปลกแยกไปจากพ่อแม่ หรือปู่ย่าตายาย หรือ ไม่
- ท่านคิดว่าสิ่งที่ท่านเห็นว่ามีค่าสำคัญ ไม่เหมือนกับสิ่งที่ชนรุ่นปู่ย่าตายาย คิดว่าสำคัญหรือไม่

- ท่านสังเกตเห็นการเปลี่ยนแปลงใด ๆ ในหมู่บ้านหลังการย้ายหรือไม่ อะไรคือการเปลี่ยนแปลงนั้น ๆ การเปลี่ยนแปลงนั้น ๆ ทำให้หมู่บ้านดีขึ้น หรือแย่ลง

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Focus Group: ผู้สูงอายุของหมู่บ้าน (อายุ ๕๕ ปีขึ้นไป)

เป้าหมาย - เพื่อหาความแตกต่างระหว่างรุ่นอายุ เพื่อสำรวจความเปลี่ยนแปลงทางวัฒนธรรมของชุมชน

คำถาม

- ท่านคิดว่าความเชื่อทางศาสนาของท่านแตกต่างจากคนหนุ่มสาวในหมู่บ้านของท่านหรือไม่
- ท่านคิดว่าเป้าหมายของท่านแตกต่างจากคนหนุ่มสาวในหมู่บ้านของท่านหรือไม่
- ท่านคิดว่าสิ่งที่ท่านเห็นที่สำคัญ ไม่เหมือนกับสิ่งที่ลูกหลานของท่านเห็นที่สำคัญ หรือไม่
- ท่านรู้สึกอย่างไรเกี่ยวกับการย้าย
- ท่านสังเกตเห็นการเปลี่ยนแปลงใด ๆ ในหมู่บ้านหลังการย้ายหรือไม่ อะไรคือการเปลี่ยนแปลงนั้น ๆ การเปลี่ยนแปลงนั้น ๆ ทำให้หมู่บ้านดีขึ้น หรือแย่ลง
- ท่านอยากให้ลูกหลานของท่านอยู่ในหมู่บ้านนี้ไปจนตายหรือไม่

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Focus Group: ผู้นำชุมชน

เป้าหมาย - เพื่อหาข้อมูลกว้าง ๆ เกี่ยวกับข้อตกลงกับ กฟผ. ; กิจกรรมทางการเมือง การมีส่วนร่วมทางการเมือง

- จิตสำนึกทางการเมือง ; เศรษฐศาสตร์สาธารณสุขของหมู่บ้าน ;
- ภาพรวมของการเข้าร่วมกิจกรรมทาง
- สังคมและจำนวนโครงการต่าง ๆ ที่มีอยู่ ; การสนับสนุนงบประมาณจากรัฐ ;
- วิถีชีวิตทางวัฒนธรรมของ
- ชุมชน

คำถาม

- ชาวบ้านร่วมมือกันและช่วยเหลือกันและกันมากหรือไม่ มากกว่า น้อยกว่า หรือเท่า ๆ กัน
- ชาวบ้านพบปะพูดคุยสังสรรค์กันบ่อยหรือไม่
- มีกลุ่มต่าง ๆ ในชุมชนมากหรือไม่ ถ้ามี ได้รับความสนใจเอาใจใส่หรือไม่
- ท่านคิดว่าโดยทั่วไปแล้วชาวบ้านมีความสุขหรือไม่
- ท่านคิดว่าชาวบ้านมีความสุขที่ไหนมากที่สุด เป็น ระหว่างที่เดิมกับที่นี่

Appendix H
Summaries of Focus Groups

Moh Seri Teenagers Focus Group

February 5th, 2000

18:00 at town meeting hall

Participants	Age	Occupation
Miss Pilaiwan Techatoey	23 years old	student
Miss Jindaporn Wongkaew-mool	24 years old	merchant
Miss Fongjan Jumpatong	27 years old	maid
Mr. Taweep Kalanoey	19 years old	student
Miss Montina Kumkreg	20 years old	student
Miss Warunee Kumkreg	19 years old	student

Summary:

The teenagers from Mo Seri seemed to have stronger opinions than their peers in the other villages, and also seemed to be more willing to voice those opinions.

When asked how their religious beliefs differed from those of their parents and grandparents, the consensus was that they still have the same general beliefs but that they are more skeptical of some things. Several expressed confusion about the reasons that the elders do some of the things that they do and mentioned that they think fewer people will continue these practices in the future. One woman mentioned that she has difficulty remembering all of the prayers. For the most part, the younger generation still beliefs in and attends the major celebrations and events of Buddhism, but are less inclined to believe things that are more superstitious than religious. An example of a belief held by the elders but not by the younger generation would be that if one takes a tear from a dog and puts it in his eye then he will be able to see the dead.

The younger generation stated several times that they believe they are different from the elders in their village. Many of their goals and hobbies are different than those of their elders. The younger adults are becoming more and more westernized. For example, many do not wai anymore but shake hands instead. They would like to wear western clothes and go out more, but feel that they do not have the freedom to do so. They want to spend more time

with their friends and to play sports, but the adults want them to spend more time at home doing things in the house.

When asked about their goals in life, participants cited differences between some of their goals and aspirations and those of their elders. For the older people in the village, they simply wanted to have a comfortable life, but the younger generation wants to study more and to have a secure, well-paying job. Most would prefer to go to school so that they could work for the government or the industry rather than working in the fields or raising livestock. The majority of the elders do not have more than a 4th grade level education, but compulsory education has been raised to the 6th grade level. Interestingly enough, 4 of the 6 participants here were still in school, and the other two expressed that they would like to study more as well.

The respondents said that they would like to have different jobs, and would move away from the village if necessary. For the most part, they do not want to live in the village for the rest of their lives, but would likely leave for economic reasons and return later in life. Many of the elders, however, would prefer for the children and grandchildren to stay in the village.

When asked if they think differently and want different things than the elders the overwhelming consensus was yes. The main areas of difference seemed to be in terms of in dress, activities, and beliefs/superstitions. Furthermore, the participants complained that elders often told them to do things or argued without giving any reason for why they feel the way that they do. Oftentimes it is just a flat answer with no explanation or room for discussion, leaving the younger villagers confused and frustrated.

Education was also mentioned as being a much higher priority today than it was in the past. Although many of the elders think that education is important as well, they place other things in higher priority than studying.

The younger people in the focus group preferred more casual western styles of dress and prefer the modern fashions to traditional styles. Many of the girls and young women would prefer to wear shorter shirts or pants, but the elders do not approve.

Many of the participants mentioned that they would like some conveniences that the elders do not think are important. One of the women wanted a washing machine, but her mother thought that it was unnecessary because she could wash all her clothes by hand. Electronics and appliances are far more important to the younger people in the village.

Some of the religious beliefs are changing as well. Three or four people mentioned that they hold the same general religious beliefs but are more disbelieving of the superstitions and myths. Very few of them believe in ghosts as compared to the elders.

The final area of difference that was discussed was about the use of free time. Members of the younger generation want to go out and have more fun, while their parents and grandparents would rather them stay home. Exercise and sports are becoming more and more important, but the parents and grandparents still tell the younger people to stay inside and spend more time at the home. This was a particular issue for the woman because it is thought that their place is in the home cooking and cleaning.

When asked if the government and the village leaders take their concerns seriously, one of the participants gave an example about streetlights. He had asked three years ago to have streetlights installed for safety reasons, but it was never done. He said that it was the fault of the provincial government and not the pu-yai-ban. They feel that Mo Seri is not important to the provincial government because it is too far away from Lampang.

The final questions asked the younger generation to compare the old village to Mo Seri and to evaluate any of the changes that occurred. They said that the entire atmosphere is different and that relationships in the old village were better. Everyone shared everything and the villagers could go to any house to eat if they were hungry. People are not as friendly

any more and they participate less in community events such as holidays and celebrations. Many live by different neighbors and do not see relatives very often who moved to Moh Luang because they are too far away. Houses used to be connected and face each other, but now they are separated by streets and much more modern. Although they said that the villagers are much more decisive and apt to speak their minds, the village is much quieter because of the change in relationships.

On the other hand, some of the changes in Mo Seri were mixed and some had been for the good. The villagers have their own temple now, but it is not completed yet. They have drinking water now from the tap, as well as a small river. Everyone is free to fish from there and to eat or sell whatever they catch. Because they are closer to Lampang, transportation is better and the villagers now have access to a secondary school. When asked what they preferred, however, the participants said that they liked the relations and lifestyle in the old village better.

Moh Seri Elders Focus Group

February 8th, 2000

9:00 at auxiliary temple building

Participants	Age
Mr. Leak Techatoey	64 years old
Mr. Sam Wongkaew-kew	71 years old
Mr. Kaewma Chainead	63 years old
Mr. Mool Temsoup	60 years old
Mr. Heang Wongkaewmool	63 years old
Mr. Srup Temsoup	68 years old

Summary:

The elders were asked questions that matched those asked to the younger generation, and their answers, for the most part, were the same or very similar to those given by the younger respondents.

When asked about religious beliefs, the elders stated that they are more religious than the youngsters. Some of the traditions have been diminished and not all of the younger people believe in all them. For the most part, the teenagers believe in the same things, but a few do not. The majority of the village is Buddhist, but there are some Christians (likely because of the Catholic schools in the area).

The elder's goal in life was to have a good job growing rice that allowed them to be comfortable. They believed that teenagers were more interested in having a secure and stable job, maybe with EGAT, but did not want to be farmers anymore. While the elders go to the temple frequently, the teens do not go as often and do not attend as many of the festivals and celebrations. The elders felt that the younger members of the community were more concerned with having fun with their friends than going to the temple.

Like the teens, the elders believed that education is of great importance. Because of a lack of money, however, the majority of them were only able to complete a few of the low grades. The younger generation is much more interested in studying.

When asked if the villagers were happy here or if they would prefer to move back the responses were mixed. They felt that it was beneficial to be so near Lampang and on the highway, but do not like the land because it is too expensive. They did not get enough money from EGAT and are poor now because they had to put the compensation money towards the purchase of their new land and building the facilities. There is little land and the soil is bad for growing rice (sandy and rocky), so most people hire themselves out doing whatever they can to make money. A few people have land to farm on but it is far from the village. Sometimes they even go to other villages for hire or take care of the animals. It is very difficult for them to save money; most make in a day exactly what they spend in that day.

The houses here are bigger, but they are not happy with the infrastructure. For one thing, they want more of the roads paved. They would also like the provincial government to give them money for more and better facilities.

Some of the elders talked about the problems that they were having since moving. Stealing is a slight problem, but drugs are more of an issue. The elders felt that most of the teenagers take drugs and have an addiction. They believed that the problems were partly a result of being so close to Lampang. They also felt that it was because they listen to and believe their friends more than their parents.

Most of the people in the village come from different areas but were all relocated by EGAT. For the most part there is unity and cooperation, and most people help each other out. Attendance at celebrations and other traditional events is good. When asked if they would like their children and grandchildren to stay in the village for the rest of their lives they said yes but explained that they do not want to. Most move away for job opportunities, but some stay nearby because they get a job with EGAT or hire themselves out.

The water in Mo Seri is polluted (too much iron). The elders said that in the old village they were able to drink the ground water because it was cleaner, but here the villagers

must either collect rainwater or buy bottled water. There are two wells in the town, but the water must be boiled before it can be used for anything.

Most of the people bought 2 ngan of land, but a few families bought a little more than that. When they first moved in there was no electricity, and EGAT gave 12 million baht to the mu ban for installing it and for building other facilities. Despite the difficulties and economic problems, the elders said that they were happy in Mo Seri because they had no jobs and therefore had nothing to do.

Moh Seri Leaders Focus Group

February 8th, 2000

10:30 at auxiliary temple building

Participants	Age	Position
Mr. Kaew Tapanyo	61 years old	Pu-yai ban
Mr. Pud Jaiboon	53 years old	assistant
Miss Lamai Kumkreg	39 years old	assistant
Mr. Nakorn Tep-parp	35 years old	Aubotol

Summary:

The village leaders expressed that there was a sense of community and unity in Moh Seri, but that involvement and participation had decreased since the move. They also discussed problems with the infrastructure and the economy.

The leaders all agreed that the village had a sense of community in the respect that people helped each other out and had good relations. They explained that this was because they had come from the same village and were in the same situation. There are many community groups, such as the youth, housewives', and funeral organizations.

The pu-yai ban estimated that there were about 1200 people living in the village, some who were happy and some who were not. Of that number, about 5 or 6 people work for EGAT, and another 19 work for one of their subsidiary companies.

Because there is no agricultural land, villagers used to have to buy their rice, but now they rent the fields and grow it themselves. EGAT gave money for their residential land, but gave nothing for farmland (they had to buy that on their own). People who had more land or bigger houses received more money according to the type of ownership documentation that they possessed. EGAT also gave money for the trees in the village as well.

The village leaders explained that the villagers had hoped to get more money than they actually did. They felt that the contract was unfair and that EGAT forced them to move rather than asking them. The old village is now a reservoir, and the tips of the old temple can be seen above the level of the water. In general, the leaders felt that most of the villagers

were happy to stay in Mo Seri. Most people joined in the celebrations but more so in their own separate groups than all together.

The economy in Mo Seri, however, is much worse. The biggest problem is that there is no land. The Department of Agriculture wants to help the villagers to grow vegetables and raise livestock, but they don't have anywhere to do so. The villagers feel that the Department helps more than EGAT, who only gave money and stopped helping them. EGAT refuses to give any additional help because the village is no longer in Amphoe Mae Moh.

As for the growth and maintenance of the infrastructure, the leaders explained that they do what they can when they have money. They can't use the water in the river for consumption, but it is used for public fishing. EGAT warned the villagers that the water was unsafe for drinking because of high levels of iron, and now they the health department is going to try to dig new wells.

When asked if the leaders thought that Mo Seri would be able to grow and prosper in the future, they responded that they thought it might be possible if the aubotol could help them out. The provincial government knows about the problems of the village but is slow to help out. Mo Ser is one of 12 mu bans in Tambon Sadek, and so they must compete for money from the government.

The leaders felt that some of the people understood how the government worked, but some of them did not. Even those who know sometimes feign ignorance. The provincial government does know the problems of the village (officially known as Ban Patana, or "Development Village") but are very slow to act. For example, they have to build the roads in small sections as they get money, which only comes from the autobol.

People sometimes feel isolated but are very close to the city. EGAT does not help them because they are no longer in Amphoe Mae Moh but the villagers want them to pay more attention. If given the choice, the villagers would prefer to stay in the old village

because they were closer to relatives and helped each other more. At the same time, however, some people like being closer to the city and becoming more modern

Nakam and Moh Luang Leaders Focus Group
February 6th, 2000
9:30 at town meeting hall

Participants	Position
Mr. Sarong Fungfeang	Kam-nan
Mrs. Urai Wongareta	Assistant
Mrs. Somporn Krewboonma	
Mrs. Sengchai Promwichai	Pu-yai ban
Mr. Patiparn Wongpeak	Assistant
Miss Arisara Krewbooma	Leader, Housewives' group

The people in these villages were relocated by EGAT, the same as Moh Seri. The terms of their agreement with EGAT, however, were different than the agreement with the other village; one family received a stipend of 120,000 baht to relocate to Moh Seri, plus 50,000 baht to dismantle their house in the old village. Aside from that, EGAT offered them no other form of support or compensation. For the villagers in Na Khaim and the new Mot Luang, EGAT offered them less land and less money than they allocated to Moh Seri, but EGAT is more willing to aid in community development. With respect to the development of infrastructure and municipal facilities, the people are very pleased at the change in the new location. In all other aspects, the people here seem to be dissatisfied with their arrangement; there are abundant complaints about the lack of land for agriculture, which creates a severe strain on the local economy of a people who formerly were subsistence farmers. In addition to the economic uncertainty, the villagers are concerned about the impact the migration had on social networks--the feeling of friendship that had been present previously is now gone.

The most prevalent complaint in this village was the concern over economic security, which can be subdivided into two main areas: land, and jobs. Previously, the people had been subsistence farmers, and were able to acquire from the forest any lumber, vegetables, or other necessities. Now, the forest is not accessible to them. Additionally, they had patty

fields on which they could grow sufficient amounts of rice. After moving to the new location, the amount of land these people have at their disposal was severely reduced--to three rai (___ acres, ___ hectares) in the case of Na Khaim. In addition to the lack of land, these people occupy a precarious position because the land on which the new village was built actually belongs to the government; they are "squatters." EGAT did not negotiate an agreement with the government, and now the government wants to recall the land. Naturally, the people feel it was remiss of EGAT to offer them land under government jurisdiction, according to the *gamnan*.

Sangao, the *puyaiban* of Mot Luang said that now, two or three people have to combine their land in order to grow any significant amount of rice, and they don't have any land on which to grow vegetables. This forces the villagers to purchase their food rather than produce it themselves, and in order to earn enough money to purchase food, they must hire themselves out as unskilled laborers. Some people work for EGAT or the government as a supplemental occupation, but the *gamnan* expressed concern for these people; when they reach sixty years of age, they are required to retire, and may not be able to find another source of income. There were also concerns that the land was too polluted to be suitable for agriculture

The *gamnan* also expressed concern over the dependence of these people on EGAT. So many people work for EGAT, unemployment would become a large problem if anything happened to EGAT. There is also the possibility that EGAT will exhaust the lignite supply in Mae Moh, and close down the plant. Not only will this send unemployment skyrocketing, the village would lose any tariff EGAT pays for the use of the land, and EGAT would no longer be able to assist in community development projects.

Another concern voiced at the interview sessions was the disruption of the social atmosphere. The people here do not cooperate as much as they used to. In the old village,

houses were built closer together, so it was more convenient for adjacent families to prepare and eat meals together. Now that the houses are farther apart, households do not have communal meals, which contributes to the social deterioration. Further evidence of the loss of basic camaraderie lies in the interactions of villagers at social events. Previously, all the villagers would socialize altogether. Now, there are divisions, and different groups do not mingle with one another. In contrast, the entire village will come together for occasions that involve the entire province. All the leaders present seemed concerned that now, a written invitation is necessary to inform other people about special occasions, such as a funeral. In the past, word-of-mouth was the acceptable way of inviting someone.

The breaking off of different groups is compounded by the influx of strangers. Some people came into the village to work for EGAT, and some as teachers, according to Sangao. These people do not participate in village celebrations. Some came in as merchants, and provide necessary consumer goods to these people. Others came attempting to capitalize on the agreement with EGAT. We did not learn whether or not these people received any money or land from EGAT, although it is evident that they could benefit from the development in infrastructure.

The *gamnan* seemed to believe that the villagers knew the correct division of government, and the appropriate channels through which to make requests. In general, the people seemed to rely primarily on the *พื้-ผู้*, but the *autbotol* does not have the skill or money to help with all the people's problems. EGAT, according to him, is able to help more than the government, even though the development of municipal facilities is under the provincial government's jurisdiction. For example, if the people need a television, or a radio for a celebration, or a van to get someone into the city, EGAT can supply it. Despite this, the *gamnan* appears troubled at how active people have become in government affairs, much more so than in the old village. This could reflect a feeling of distrust towards the government.

Nakam and Moh Luang Elders Focus Group
February 6th, 2000
13:00 at town meeting hall

Participants	Age
Mr. Peng Nontakorn	60 years
Mr. Praseard PingMang	66 years
Mrs. Sriwan Nontakorn	58 years
Mr. Sritoa Keawkum	63 years
Mr. Sawat Ingawee	56 years
Mr. Muenk Krewjankaew	57 years
Mr. Rang Peasoup	64 years
Mr. Sa	

Much like the leaders of these villages, the old persons we interviewed had a dichotomous attitude towards EGAT. The villagers are pleased with the development of roads, electricity, water supply, and streetlights. However, like the village leaders, the senior group was discontented that they did not have as much land as they did in the old village; they want EGAT to acquire more land for them, but EGAT either cannot or will not because of the original contract. In addition to the land problem, the elders are concerned about the changes in social behavior both before and after the migration, as well as between the older and younger generations. They see less interaction and cooperation compared to the old village, and they think that the younger generation has lost interest in the traditional way of life.

According to the focus group with the village leaders, a family relocated to Na Khaim received three rai (___ acres, ___ hectares), which they said is not a suitable amount of land for farm use. Aside from the loss of adequate farmland, the older generation was displeased that they probably would not be able to pass down the land to their children and grandchildren. It was not clear, however, whether this was because it was such a small amount or whether it was because they lacked proper documentation. One can see that these people feel that EGAT performed a disservice to these people by severely reducing the amount of land they have at their disposal.

Other than the lack of suitable farmland, the villaers seemed generally pleased with the agreement with EGAT. They were satisfied with the development of municipal facilities and modern infrastructure, such as streetlights, streets, and water piping. With this modernization, however, these people feel that their social ties with other people in the village have been weakened. Now, because the houses are too far apart, the senior focus group said that they cannot walk to visit their neighbors and friends.

In addition to their concern about the loss of land, the senior group expressed apprehension about the behavior of their children and grandchildren. One striking example is the change in religious behavior perceived by the older generation. There was a consensus at this interview session that the younger generation is not as interested in religion as the older generation. Two specific examples of this distinction were cited; some young people do not remove their shoes when they visit the temple, and young people do not accompany their parents and grandparents to the temple. Although the research team can neither prove nor disprove the latter, from my observations in other villages the former illustration does not hold true. Many of the seniors present at this session blamed education for the younger generation's decreased interest in religion. At one point, a man from Nakam claimed that teachers could not teach young people to go to the temple. Clearly, the older generation is not pleased at the decline in religious pursuit.

The increase in education was also indicated as a cause for the different goals between the two age groups. The people at this interview session agreed that the higher education the younger generation receives has caused young people to lose interest in the traditional way of life. Now, their goals are to get the highest education possible, and find a job employing that education. This fact was brought up in the youth group interview session, to be discussed later. Although it was not explicitly said, I implied from what these people said about education that the seniors would prefer their children to stay rice farmers in the village. This

inference is substantiated because when asked if they would want their children and grandchildren to stay in the village, most people present responded that they want the younger generation to stay, but that the young people should decide for themselves. There was one person from Moh Luang who was happy that the younger generation was receiving a higher education, although this was only one person out of the eleven present.

The final major matter voiced at this session was the issue of avarice, in the form of money, electronics, and narcotics. The people at this interview mentioned that now, it is easier for a young person to earn and spend money, compared to the past. My interpretation from this is the older generation feels that their children are becoming too materialistic, although no one present said so. At one point in the dialogue, a person from Nakam said that electronic appliances--such as washing machines--were available in excess to the younger generation. From visiting houses in Nakam, I am unable to support or refute this statement, although my observations from visiting other villages would tend to refute it. It was surprising to hear worries about drug abuse in the villages. More than once in the session, someone raised the issue that young people may be abusing heroin or other drugs, and the people present were apprehensive that young people would become thieves for drug-money. I have no observations that can prove or disprove this statement.

Nakam and Moh Luang Teenagers Focus Group
February 6th, 2000
15:00 at town meeting hall

Participants	Age	Occupation
Mr. Paisan Wongpea	26 years	
Miss Rattiya Kanjai		
Mr. Itsaret Pokkumau	27 years	merchant
Mr. Suwit Mapansai		student
Miss Wijitta Krewkumla	16 years	student
Mr. Songkran Tananchai	20 years	merchant
Mr. Sawang PaiRann	17 years	student
Mr. Saman Tananchai	24 years	

This interview session, conducted immediately after the old persons' interview, showed very similar trends to the other two interview sessions; while the people are glad that EGAT has provided them with more modern facilities, they express discontent at the impact moving has had on their traditional way of life. For the most part, the feeling conveyed was that the young people like the old village better. Aside from the generation issues raised, this group was concerned about the occupational changes their parents underwent--from farmers to unskilled labor. They also raised the issue that now, they must buy the things they need, whereas in the old village the people could make what they needed. Their opinions of relocation

The deterioration of their culture was of particular importance to one young man who is the leader of the youth group to preserve culture. His opinions were very conservative; he wants other young people to help maintain and preserve the traditional culture, and claims that moving to the new village is what motivated him to adhere to the traditional culture. In contrast, the other people present were more interested in getting a complete education and then a corresponding job. Because of this, the majority of the young people present said that

they would move away from the village, but they would stay at the village if they could not find a job.

Aside from differences in goals, the young people also talked about differences in behavior between them and their parents. Most of them, including the young man from the youth group to preserve culture, thought that their parents were too old-fashioned. As an example, one person said that their parents believe in ghosts, while the younger group does not. Clothing was another difference mentioned. Additionally, one person said that the reason young people do not always listen to their parents is that their parents have out-of-date ideas; this contrasts with the impression I got from the older persons' interview, where the prevalent feeling was that young people just do not listen at all. The young people at this session said that they do listen to their parents when they have good reasoning.

Despite the previous generation-based differences, the young people at this interview session had similar opinions about the migration. The people at this interview said that there are people in the new village that did not live in the old one, and because houses are farther apart than before, meals are no longer shared among neighbors. Also of note, people were randomly assigned the land in the new village, so no one is familiar with their neighbors anymore. From these changes, it is safe to infer that the social network of the village has deteriorated as a result of the migration.

In addition to the social changes, these young people said that the economic situation changed. As noted in the previous focus group sessions, the amount of land that people owned has been drastically reduced, and as a result, the people who were farmers no longer have enough land to support any crops. At this session, the respondents went on to say that their parents now work for EGAT, or another large company. Another change this group mentioned is that in the old village, families could make things that they need--for example, furniture. Now, possibly due to the lack of natural resources, most people must buy

necessities. This shift from self-reliance to consumerism, has led to the emergence of a rich class, and a type of competition to maintain appearances, according to these respondents.

The opinions of this group of people towards EGAT are similar to the feelings of the other two groups. While they are pleased with the development of municipal facilities, and the employment opportunities that EGAT provides the village, at least one person present is unhappy about the disruption to their traditional way of life. They also disapproved of the sulfur dioxide pollution. As an observation, the older group did not mention the pollution problems, possibly because of lack of education.

Na Sak Teenager Focus Group
February 7th, 2000
15:00 at Na Sak "Aubotol Hall"

Participants	Age
Mrs. Ra Kantiya	28 years
Mrs. Saifa Keawsai	24 years
Mr. Add Sangkarat	27 years
Mr. Pateep	26 years
Mr. Chanchai	27 years
Mr. Somchai	24 years
Mr. Kritsada	26 years

Notes Regarding Dress:

- Very casual - seem almost younger than the same group from Moh Luang
- All are wearing T-Shirts

Beliefs:

- Feel that their beliefs are not all that different than the older generation. They're still Buddhist and they still believe in Buddha.

Goals:

- Would like to get a higher education and get a job in that field of study.
- They feel that their parents would like them to do this.

Opinions:

- Very different from the older generations.
- Their parents and grandparents would like them to do as they once did (be farmers with a low education, etc.)
- They don't want to live the same life their parents did.
- They still help their parents to grow rice every year. But, in their hearts, they want to study and get a "confident" job.
- They would like to leave and find a job in the city (i.e. Lampang, Bangkok).
- They feel that they have different opinions than their parents. For instance, they would like to study further but their parents complain that there is no money.
- They wear different clothing. Parents would like them to wear the traditional shirts and/or skirts. They now wear fashionable items or T-Shirts.
- They are of the opinion that the unemployment rate is very high in Na Sak.
- The economy is terrible. They have to purchase everything and yet don't have enough money to do so.
- They think it is important to get a good job and live comfortably with their family.
- Their parents think the same way, but don't know how to help.
- They do agree that their parents find time to talk about religion and culture....in fact, they LIKE to talk about it.
- 2-3 years ago, they used to participate in the hill tribe ghost dance, but now they don't as much.
- If there's no money from the provincial government, there's no money for celebrations.
- The big problem is that the village has no unity. They don't help each other.
- Young people feel that it is important to exercise every day (i.e. play volleyball, etc.)

- They would like to continue to study, but the school is very far from Na Sak.

Na Sak and Mae Luang Elders Focus Group

February 7th, 2000

11:30 at Na Sak "Aubotol Hall"

Participants	Mu ban	Age
Mrs. Fongkeaw Wongnasak	Na Sak	70 years
Mr. Mee Wongkitti	Na Sak	62 years
Mr. Somneak Jampaheaw	Na Sak	66 years
Mr. Tan Yawira	Na Sak	72 years
Mr. Mool Darninkum	Mae Luang	65 years
Mr. Min Sritawan	Mae Luang	68 years
Mr. Kumaye Keawroum	Mae Luang	69 years
Mrs. Onkeaw Kandee	Mae Luang	51 years

Regarding Religion:

- We think some of the younger generation believes the same as us. Some can't or don't.
- For example, the Thai Ghost Dance. Teens don't really believe in ghosts.
 - They don't believe because they have a higher education than us.
 - They say "There're no ghosts"
 - Education has changed their beliefs.
- They listen only to the TV, not their parents.

Differences in Goals:

- Young people in the village are comfortable because we built all the comforts for them (like running water and a motorized rice miller). In the past, it wasn't this comfortable.
- Young people want to "do what THEY think" because they have knowledge.
- Most young people think education is important. In the past, they would have quit school to help in the village. Many now do Homework instead of chores and want to study more.

Regarding Celebrations:

- Most young people see celebrations as important, but they don't see the REAL importance. They only see the fun and social aspects.

Thoughts & Feelings:

- Many young people leave town to get a job and we [the elders and parents] worry about them. It's very far.
- We'd love for them to stay here, but they want to study.

Regarding Changes:

- Now [rather than in the 'old days'], we don't need to walk everywhere. We can take a car or motorcycle.
- We also have ways to get people to the hospital (stretchers, carts, wheel chairs, vans, etc.)
- We used to have a fertilizer factory nearby (instead of EGAT). Now, it's closed down.
- Used to have to mill rice by hand, now we have to install an electric milling machine. [Note: Translated to "rice factory" ...assumed to be a milling machine]
- Young people don't believe their parents anymore. They think they have old-fashioned ideas.

Na Sak and Mae Luang Leaders Focus Group

February 7th, 2000

9:00 at Na Sak “Aubotol Hall”

Participants	Position	Age
Mr. Suwit		34 years
Mr. Pisit	Pu-yai ban	38 years
Mr. Sombool		45 years
Mr. Pomma	assistant	43 years
Mr. In		62 years
Mrs. Rattana	volunteer group	53 years

Interaction:

- People work together, especially in celebrations.
- They have meetings to talk often
- Many people have lived here since birth (The village is nearly 100 years old).
- There are three main community groups in Na Sak: Fieldworker’s group, Housewives Group and “Use of Water” group.
- Do they know each other?
 - Yes, because houses are close together.
 - NS & Mae Luang have a village combined group together.
 - This group puts together things like funerals.
 - NS has a bigger population than ML.

Happiness & Problems:

- When asked if people were happy to live there, respondents said: “it’s in the middle”.
 - The economy of the village is not growing.
 - There still appears to be a support network.
 - There’s only one paved road in Na Sak, but the villagers seem happy with this.
- The village has environmental problems
 - Dry Climate means lots of dead trees.
 - Lots of forest fires.
- As leaders, the Aubotol feel they can help the people make things better.

Celebrations

- Sometimes, celebrations are in the temple.
- Each village has a different process for planning their celebrations.
- People who go away for school or work often come back for celebrations.
- Most young people party more with their friends at New Years than with their families.

Economy & Employment:

- People can decide on their own careers.
- The main career is rice farming.
- Economy is bad. There’s lots of unemployment.
- They can’t cut and sell trees anymore because logging is illegal.
- The government supported mushroom planting for a short time.
- There’s no fishing allowed in the EGAT reservoir.

- The housewives group has begun sewing pollution masks for the EGAT workers, but there is little demand for their supply.
- There's no money or market to support the housewives with their sewing skills
 - A few were sent away for training
- The money from the Government is not enough to divide.
- If the young people can get a good education, they can help the village.
 - Some people have money to send their kids to Mae Moh school. Others send them to Na Sak school.

Understanding of Govt, needs, etc.

- Think people do generally understand the government.
 - They talk to the Puyay Ban first and he talks to the Aubotol.
- There's a general consensus that EGAT usually responds to concerns faster than the government. They've given money for kids lunch and scholarships for higher education.
- People have many wants and the aubotol can't give everything to everyone.
- The government has a project to help the poor have better chances for careers and choices.

About Young People:

- Most young people exercise in their free time.
- Many study in the city and can come home on weekends and holidays.
- Sometimes, the adults feel lonely without the kids because there's nobody to help them.

Problems:

- Most problems are with agriculture.
- Many with health.
 - They used to have a van to take people to the hospital. Now there's no money for that. They must share the cost of transportation as a village [i.e. ambulatory services].
 - They can always smell the SO_x from EGAT. Makes it hard to breathe.
 - Every time people go to the hospital, they must pay for the car. No money from EGAT for the car.
 - Many people buy a 500 baht card from the hospital that covers the family for all illnesses [kind of like insurance]. Huay Fai village (in the north) has these for free, but they only cover respiratory illnesses.

Misc. Information from Opal's Notes:

- Na Sak received 100,000 baht last year in budget allocation.
- An additional 12 million baht came in from EGAT as tariffs from mining the coal. This may not be the case next year.
- People over 30 years old seem to be more politically involved.

Appendix I
Observational Data

Trip One – Orientation and Preliminary Investigation

Wednesday, January 12, 2000

Day 1 in Mae Moh

I met Nuntavarn for the first time this morning. We met her at her office at 9am this morning and she showed us around the office and downstairs. Everyone was really nice, but it scares me a little bit how most people don't speak any English. We left for the airport and met someone from the Pollution Control Department (PCD). Our flight was slightly delayed, so we did not get to tour EGAT as we had planned. Once we landed, we checked into the hotel and had lunch, and then we went to EGAT's housing to get ready to go into the field.

We met in the open first floor of one of the houses with about 30 field workers as well as the director of the Mae Moh hospital. We were introduced to the group and then wandered around the grounds for a little bit. We walked over by the tennis courts and the soccer field where you could clearly see stacks 1-3 of the plant. Mae Moh certainly wasn't what I was expecting. I was ready to see a barren area with large clouds of acrid smoke hanging in the air, a very industrial sort of area. Instead, it was surrounded by mountains and actually quite pretty, but very rural. I'm not sure how I'm going to handle three weeks up here when we come back here to do our research.

Around 3:30pm we left for the field, or, more accurately, the market. The workers start and stay out late so that the families will be around when they come with the surveys, and so they need to stop at the market on the way to get their dinners. We got out and walked around, and it was unlike anything I have ever seen before. You walk down the aisles and there is just every type of exotic food that you can imagine, and all out in the heat and covered with flies. Piles and piles of vegetables, nuts, and fruit were just everywhere. We walked past one table that had a net full of frogs, a bucket of eels, and a pan of squid to **another** table that had an entire pig **butchered and the head sitting next to it**. Absolutely **unbelievable**, and so unhygienic I **cannot** even believe that people don't get sick from food

poisoning and other illnesses every day. We had some really good snack there that she bought for us, including fried bananas and yams, rice cakes, and coconut gelatin. We left and all piled in the van for the village (Huay Fai).

It took a little while to drive there, probably because it is pretty isolated but all around you can see parts of the power plant or mining operations, like the conveyor belt for the ashes. We got out and each went with a group to several different houses. This is really hardcore Thailand, no tourists up here! There were three people to a team, and each team had one nurse (and one of us). We would go to the houses that had been randomly selected and take off our shoes before entering. Then we would go in and sit on the floor, and the field workers would begin with the questionnaires about their health and economic information. Afterwards, a nurse would perform a brief physical exam that was also recorded on the surveys.

Seeing the way that these people live was really a bit of a wake-up call. Most live in wooden houses on stilts; with the bottom of the houses being used for storage and using have numerous animals wandering around them. The houses were somewhat open, and most had holes in the wood that made up the walls and in the galvanized aluminum that was the ceiling. You would take your shoes off before entering and sit on the floor, in the largest room of the house. Most houses only had one large room or two, maybe a bedroom and the bathroom, but it was not uncommon to see several people living in one of these houses. Yet in every house there was a television and a stereo, and almost everyone was watching TV (one family even had on a Thai version of "Xena" when we came in). I was very surprised to see that, because the people are so poor that I wouldn't expect them to have any of that. Most people seemed to sleep on hard wood beds that they put a sort of cushioned pad on for a mattress. I was surprised to see that the villagers had electricity and running water, but I suppose even poor people have a number of first world amenities common to everyone.

The houses were all nice in a quaint sort of way, and the people very friendly and hospitable. Nearly everyone offered us water and were very nice, gracious hosts. Even more surprising was that the people were so happy, and I saw some of the cutest children that I have ever seen. The first house that we went into was fairly large by the village standard, as I later came to realize. There was a boy about 12yrs old, a little girl about 3 years, and a man and of woman, both around 60 years of age (perhaps the grandparents). The house was amazingly tidy and clean, the people very friendly. There was no one home in the second house on our list, and so we moved onto the third. Very similar to the first, this house was slightly smaller and only a woman in her 30s and her pre-teen daughter were home. I was surprised to see many pictures of the family hanging on the walls, and in the glass cabinet where some of the clothes were kept. We continued on this way to another two houses, but because the roads were windy and unmarked it took a while to find the last two locations.

I was surprised to see the fourth house we went into because it was not made of wood, nor was it on stilts. It resembled more of a concrete garage, but inside was very near to the same set-up I had observed elsewhere. The house was not much larger than the others, but there were only two adults and two children, and I got the feeling that this family was better off financially than most in the village. In contrast, the final house that we went to was relatively small, and there were two children, a middle aged woman, and two older adults.

Thursday, January 13, 2000
Day 2 in Mae Moh

We woke up and checked out the hotel so that we could stay in EGAT housing for the night with the field workers. The van picked us up at 8:30am and we went to the Mae Moh district hospital to meet with several people, including the director. From there we went to the town hall where there was a protest. It was the first of its kind since the high emission levels in August 1998, and was a combination of the monthly meeting between village leaders and EGAT representatives and a hearing to address the issue of compensation for

damages suffered by the villagers. Nuntavarn and her local assistant Na sat on either end of us and translated the very interesting and informative meeting. The notes taken at this time can be found in Appendix S.

Residents were complaining of respiratory disorders from December 16-31, 1999 and believed it to be a result of high emissions from the power plant. EGAT, however, was able to produce data showing that emissions were well below the standards during that time, and the director of the hospital stated that the illnesses were a result of the unusually cold weather during that time. Despite this, representatives for the villagers were not interested in hearing the data (claiming that the villagers could not understand all of the technical information). Even after it was decided that EGAT was not at fault the villagers were still demanding compensation for the loss of crops with little concern as to where it came from. In the end it was decided that disaster relief funds from the department of agriculture would be used to replace all the seed and fertilizer needed to re-grow the lost stock of rice.

From the protest we went and had lunch at EGAT with a number of their senior officials. We were then able to tour the mining operations as well as Mae Moh Seri. It was at this time that we discovered the premise of our PQP was incorrect – these residents were moved for development reasons, not because of the effect that the power plant had on their health. Nuntavarn did believe that anyone has ever been relocated by EGAT for health reasons. We returned to EGAT in time to hear the end of their monthly meeting with the PCD concerning their monitoring stations and compliance with the standards. We obtained copies of several tables of useful information concerning emissions levels over the past 16 months.

Once the meeting concluded we went to meet the field workers in Ban Hoy Rok Mei, a resettlement village from 20 years ago. There were a number of similarities between this village and Mae Moh Seri, specifically in terms of the organization of roads and the

construction of the homes. The roads followed more of a grid pattern than in the first village, and it appeared that more of them were paved as well. Many more of the houses were made of, at least in part, of concrete, and many had gates around them. Unlike Mae Moh Seri, however, there was a lot more vegetation and tree cover in the area, likely due to the fact that this community was approximately 13 years older than the former. There also seemed to be a greater sense of community between the villagers, although there were not many people at home at the time we visited.

My observations were mostly the same as they were for the previous night. The villagers were all very hospitable and gracious, the homes kept impeccably clean. There was one house that struck me as extreme, even though I was getting rather used to seeing several family members in each tiny house. This particular house was no bigger than any of the others, and was, if anything, a little bit smaller. But centered around the television were five young boys, all under the age of ten, as well as three women in their mid 30s and a man approximately the same age. Opal, one of the field workers that we were with, told me the word for 'poor' in Thai, explaining to me that this was a very poor family. I was shocked that she was saying it so blatantly in front of them, but no one appeared to mind or was offended. It seems that all of the villagers are quite accepting of and happy with their stations in life.

We finished in this village early compared to the previous night, and all piled in the van to return to EGAT's housing. We had dinner with the workers, which consisted of bags of food from the market. I was slightly alarmed to see that there was no refrigerator or stove, nor a couch, television, or phone. I was most concerned with my health in terms of the food that we will be eating, but it was quite good and I did not get sick from it so it should all work out. Justin, Tom, and I worked a little bit on our goals and objectives in preparation for our morning meeting with Nuntavarn and then went to bed.

Friday, January 14, 2000
Day 3 in Mae Moh

There was slight miscommunication with the driver this morning, and so we ended up meeting Nuntavarn at the health center around 10:30am. We discussed the goals of our project for a while and then brainstormed research questions for each of the tasks that had been outlined in the PQP. Although there was plenty to be covered and the meeting certainly could have lasted longer, we left about an hour later for the airport.

Trip Two – Primary and Secondary Data Collection

Monday, January 24, 2000

Day 1 in Mae Moh

We took the overnight train up from Bangkok and arrived in Lampang around 5:05am. The driver picked us up around 5:45am and took us to Hotel Kim City, where we napped, had breakfast, and waited for Nuntavarn until about 10am. Unfortunately this cut down on the time that we had to work with her. We spent most of the day going to different offices in the Provincial Government building trying to get secondary and tertiary data. Everyone was really helpful, but it didn't do us much good since it is all in English. We got to the flats around 12:30, and Nuntavarn changed several other items on our survey. We spent the rest of the day working and scheduling with Yae. We were supposed to field test the surveys tonight, but because of the changes that were made it was not possible. Instead, I worked on revising them from about 6:00pm until after 11:30pm so that we could copy them tomorrow. Luckily, we did not have to go into the field, and so Tom and Justin were able to set up the forms in EpiInfo.

Tuesday, January 25, 2000

Day 2 in Mae Moh

We left a little bit after 9 this morning for the hospital so that we could check email, but it turns out that the accounts we bought aren't any good. Until we can straighten it out the hospital is letting us use its account, so I sent an email to Nuntavarn and to Professor Weininger alerting them to the confusion. We spent a lot more time than we expected to there and didn't leave until nearly 11:20am, so we went to lunch before going into Lampang where we made copies of all the surveys that will be field tested tonight. Once that was completed, we went to Mae Moh Seri so that we could make a map. We got there around 1:30pm and had to be back at the flats by 3:00pm to leave for the field so we didn't have a lot

of time there, but fortunately the village leader already had a map. We traced it out and spent the rest of the time exploring and taking pictures of Moh Seri that would be used for comparison purposes in our project. We examined the market, the bridge, the roads, and the temple before leaving. We will make more extensive examinations and notes when we stay over in the village.

We left around 3:15pm for the market and the field. The workers went into a village in Tambon Na Saak tonight, so we will have to test the Moh Seri survey tomorrow during the day. Two groups took five surveys each, and Justin, Tom, and I split up again and went from house to house so that we could watch them field test the survey. It took a while for them to understand that the surveys had to be given in the same houses that the Chula project was being conducted in, but other than that there were relatively minor changes to the survey.

This particular village seemed to be much larger than the others (it certainly is the farthest one we have been to yet) and based in agriculture. The village was very isolated from anything on the side from which we entered, and there was a lot of vegetation. The houses were not aligned on "streets," but instead faced each other around a sort of courtyard-like area, giving the village the feel of a campground. I saw several structures that would be roughly comparable to barns, and many animals throughout, including chickens, pigs, water buffalo, and (of course) dogs.

The first house that we went into had outside of it two pens filled with puppies, a pen with two piglets, and a chicken coop, making it look very similar to a farm. It was large wooden house on stilts, with a kitchen area, large room, and then a curtained-off back room. There was a stereo and a television. There was a middle-aged man and woman, as well and three children -- a young boy around 5 years of age, and two girls of the same age and another a few years older. It is very difficult, however, to discern which children belong with which house because they all go around together.

At home in the second house that we entered was woman (age 41), 2 young boys and 3 girls. Some of these children I had seen in the first house, and others I would see in later houses. The father arrived as we were administering the surveys. It was a large wooden house again, and beneath was a motorcycle, bikes, and some sort of old farming equipment like a tractor. Inside the one large room was a sewing machine, a real bed, television, stereo, and, I was surprised to see, a shotgun.

As in the second house, only the woman and children were home, but the father returned before we left. This house seemed larger than all of the others, but was much more empty (perhaps making it seem bigger) – there wasn't a television or any real possessions present, and I noticed that this was the first house that I had seen spiders inside. It was at this house that I had my first experience with village squat toilets, in an out-house no less.

We entered the fourth house as they were eating dinner, and so members trickled in slowly. This was the most Western house that I have seen yet in one of these villages – there was a large, made-up bed, a television, stereo, sewing machine, refrigerator, and vanity set up around the room. There were also a number of pictures hanging on the wall, and I was told that this house belonged to an artist.

It was pretty late before we were nearly finished because pilot testing our surveys took a lot of time. We went to only one more house before ending for the night, similar in characteristics, size, possessions, and inhabitants as the previous ones. It was a long drive back and we didn't get here until about 10:30pm, but we were expecting to fix the surveys after eating so that they could be copied the next day and the field workers could start administering them. Yae said that we would do them tomorrow instead, after we tested the Mae Moh Seri survey. After dinner, I went and worked on the map for about an hour and went to bed at 12:45am.

Wednesday, January 26, 2000

Day 3 in Mae Moh

We planned with Yae to leave for the hospital at 8am, and then for Moh Luang and Na Khaem at 9:00am, but he did not understand. We had to wake both him and driver and did not leave until 8:55am. I had left a note for the director asking for the provincial health data, but did not receive a response, so I asked Yae who else I should ask. He told me that I could not get it here, but rather from the villages. He did not know where in the villages, though, or from where we could obtain the data for the whole province. Fortunately, we found the director and he had us tell one of the woman what we needed. She will be calling the provincial health center and hopefully getting the data for us later next week. Although we were able to check email at the hospital we could not fix the account problem, but Nuntavarn called and got us in touch with someone from LoxInfo. It was taking a long time and we really needed to get into the field, so we left Justin at the hospital and left for Moh Luang and Na Khaem around 10:40am.

Once in Moh Luang, we split up and tested half of the surveys we had printed. After lunch we went to smaller Na Khaem and tested the other half. There seem to be more problems with this survey, even with the questions copied directly from the Chula survey. We went to the hospital on the way back to get Justin at 1:15pm, but he was still trying to sort out the email. Rather than prolong this any longer (since we will need a way to get in touch with our advisors), he stayed at the hospital until we could pick him up on the way to the field tonight.

Tom and I returned to the flats to try and revise the surveys, but both Yae and Opal told us that they do not have time to do this until tonight, after we get back from the field. This makes the second day of data collection that we are now missing from Na Saak (considering that we were originally going to test Monday and begin administering Tuesday). Aside from the problem of missing the past two days is that once we revise the surveys, they

still need to be copied. We had to be at the provincial offices from around 9am until 11:00ish, and then we are staying in a village overnight and need to get there early.

Our contingency plan is to leave one of us behind and only send two to stay over in the village so that the surveys can be copied and given out Thursday and no later. I also asked Opal to translate some of the material that we received, but she told me that she does not have time because they are going back into the field for something else at 2:00pm, only 15 minutes after I asked her. We asked if we could call Nuntavarn so that she could help us straighten some of this out, but were told that we needed to use a phone outside the flats and would not be able to do so until we left for the field at 4pm.

If things continue as they have so far it is not feasible for us to keep the same goals for the project in that nothing is being done that we have asked for. It is very frustrating and tiring because all we do is work on the project, eat, and sleep. I am fine with getting only 5 or 6 hours of sleep a night and only eating two meals, but we are putting in at least 16 hour days (Monday was 5am to midnight = 19 hours, Tuesday was 9am to 1am, 17 hours. Today began at 8am, and will likely go until well past midnight as well) and getting very little done. It is partly a result of a lack of resources, and partly miscommunication, but even when we asked for something and are assured that they understand and it will be done it is not. The stress and the frustration is already beginning to take its toll on our group's dynamics, and we are hoping to be able to speak with Professor Weininger this weekend at the Chiang Mai trip about what we can do. We are all rather worried that we will not be able to get the majority of this project completed.

In the end, we all went back into Na Saak tonight with the field workers so that we could continue our observations. The group that I went with tonight it to eleven houses (we did not interview all of the families, but most), by far the most that I have visited in one night.

The first house very much resembled a farm, especially because there were two water buffalos and a cart in front of the house, as well as the chickens, pigs, and dogs. Underneath the house in the storage space was a lot of equipment and there was also some sort of drainage system in the roof. It was very nice house with many cabinets full of the family's possessions. One of the things that stood out about the house was that the pillars inside were sanded into squares, rather than left as tree trunks like we normally saw in the houses. The floor was partly covered in linoleum, and around the room was a fan, a vanity, refrigerator, television, and stereo. There was an older man and woman (late 50s), as well as a girl about age 12 at home when we came at 5:40pm.

The second house was that of the assistant village leader, but he was not home at the time. When we arrived, his wife was in the kitchen distilling whiskey. Her daughter, about 14 or 15 years old, was at home, still dressed in her school uniform, as well as another child and a second woman (perhaps the wife's sister). Other than the television, radio, and oven there was little else in the house.

The parents were still at work, and so we did not enter the third house on the list. Only their daughter, a student, was home, but even from outside the house seemed quite nice, especially the tile stairs leading up to the front door.

The fourth house was very different from any of the others that I have been to yet. It was tiny, but what was surprising was that it was so dirty and messy. Clothes were strewn everywhere and the poor lighting made it very difficult to see. There was a very old woman (perhaps in her 80s), a middle-aged man with no teeth, and a polite boy about 12 or 13 years old. The man tried to speak with me and seemed rather shocked when I told him that I was unable to speak Thai. As the workers were speaking with the family members, a woman came out of one of the bedrooms, who they told me was crazy. I didn't think that they were serious at first, but after watching one of the nurses try to survey her it was apparent that she

had some type of mental disease; she would not look up or only gazed into space, and really did little more than mumble gibberish that even I could determine was not Thai. It was a very poor house with almost no possessions; the only thing other than the clothes that I saw was a TV in the corner that was almost completely covered in rags.

Our next house was much more like I had become accustomed to, and the family was eating dinner. They told me that the old man was 74 years old, one of the oldest in the village. In addition, there was his wife, a middle-aged man, and a teenage boy at home as well. I noticed a small television and radio, as well as the three or four cats that lived inside.

The fifth family that we visited, a husband and wife and their two children was just finishing dinner. The house was rather large, with a refrigerator and television. Both children were doing homework, and one of the workers mentioned that the boy was studying English. She jokingly asked him if he would like my help, but the suggestion seemed to scare him.

We next returned to the house of the assistant village leader so that they could speak with the father. He spoke a little bit of English and asked me a few questions. While one of the workers administered the survey to him, the daughter tried to teach three of us to make origami stars, but in the end it didn't work and so she gave us a few of the ones she had made.

By the time we made it to the next house it was getting rather late, and I was surprised to see that the girl was still in her school uniform. It also surprised me when I noted that all of the students I had seen that night had been girls, not a trend I was expecting. This house also had linoleum on the floor, a separate kitchen, two bedrooms, a television and refrigerator. There was only the mother and daughter to interview, and so we did not stay for long.

also seemed concerned that the work we required was impacting the ability of the workers to complete the necessary requirements for her survey.

We finally got all of the surveys and left for the field, when Poi gave me a note telling me that they would not be able to do any work for us until after the Chula project was finished. This means that our surveys will be pushed back until at least the fifth of February, almost two full weeks later than we planned to begin.

Before beginning the Chula surveys in the field, they first had to show us the houses at which we would be staying in Moh Luang. We decided that it would be best to stay in three separate houses so that we would have more extensive observations. I stayed with a family of four (two daughters), where the father was a carpenter by occupation and also an assistant village leader. We each dropped our stuff off and split into smaller working groups.

The first house that I went to that evening was very tiny with a rather low roof. The father was outside with a crying baby, and the mother and a young boy came home later. The house was pretty isolated and not off of any type of road, but we did not go inside. Instead, we stayed outside and only spoke with the mother.

The second house was fairly large and divided into many rooms, including a kitchen, dining area, living room, and bedrooms. Within sight were a television, fan, office chair, and cabinets with many dishes. There was only an older man and woman home at first, but it turned out that a very large family actually lived split between the house that we were in and the one next door, and so members came in and out the rest of the time that we were there. The workers surveyed approximately 6 adults and 5 children.

At home in the last house that we entered were two women, three girls (one whom I had noticed wandering around and playing in the dirt earlier), and a boy. They were watching television when we came in, and never really seemed to take their focus off of it,

even while we were there. Although there was television, fan, and stereo, the possession that stood out the most were numerous large bags of rice that were heaped by the front door.

After the final house we were dropped off at our houses for the night, around 9:20pm. I went in and the wife showed me where I would be sleeping, which was in the room with the younger daughter. I was going to stay up and do some reading, but no sooner than five minutes later the little girl came in and shut off the lights.

Friday, January 28th, 2000
Day 5 in Mae Moh

I woke up at 5:00am this morning, surprised to notice that I was the last “member” of the family to get up. The father was already working outside, but I went downstairs and had breakfast with the two daughters and the mother. We had sticky rice and fish in a white sauce with shallots, and roasted coconuts. The girls left around 6:00 for school (the father was driving them, and since they lived about 3 houses from the school I assumed that they went to private school outside of Moh Luang. They weren’t wearing uniforms though, and I was unable to ask), and I continued eating with the mother. She was very sweet and we tried to talk a little bit, but my lack of Thai and her lack of English prevented it. She was very concerned that I got enough sleep, however, and quickly rushed me back upstairs and into bed.

I fell asleep until Justin came around 7:20am to get me. We walked around the village making observations and looking for Tom. We first walked to the temple, a concrete building with a lot of red and gold trimming. It appeared to be slightly larger than the one in Moh Seri, and there was also a large quarters for the monks behind it. From there we walked back up an unpaved road, past some rice fields, until we came to the front gate of the school. It was a rather large complex, and we found out later that the children were separated into

different buildings by age/grade. This was in contrast to Moh Seri, where the leader told us that children go to school outside of the village.

We had begun walking towards the market and other houses when we saw Tom in the back of the pick-up that belonged to the village leader. Apparently he had spoken with Yae the previous night, and he was going to drive us to Sports Day (instead of Yae picking us up at 10:00am as we had originally planned). It took a while to get there, partly because it was a good distance away, and partly because we drove the entire way on bumpy dirt roads.

Once there it was quite an event to behold. We parked at the corner of an athletic field, and there were already many people there. One side was lined in tents that we later realized were organized by village (all of the villages in Tambon Na Saak were there), and the other side had few vendors, a podium, and a tent with announcers. We moved onto the street to the side of the field just in time for the parade. It was at this time that we spoke with the director of community development who explained to us that this was the annual festival or holiday of the housewives association. The women marched in costumes determined and separated by the village until they all assembled on the field. After a number of comments, speeches, and pictures, everyone dissipated to their respective tents. For the most part it was only women, but the leaders and few other men were present as well.

Each village had it's own group of musicians (mostly men), who played throughout the afternoon the women (really no men) danced outside the tent. There was plenty of food to go around, and more than enough rice whiskey. It seemed that most of the men who were there ate and sat together, and consumed large amounts of alcohol. We were told that it lasted until about 4:00pm, but we were not able to stay that long. We thanked our hosts and left

Yae and his team picked us up around 1:30, and we had lunch on the other side of the field. They invited us to a picnic because they had the day off for finishing a village the night

before, and so we went to the market to buy more food. Around 4:30pm we drove out the area overlooking the EGAT mine for dinner and 'sledding' down the grass hill. It was a nice afternoon, but very frustrating because we are so far behind in all the work that we need to get done. We returned to the flats around 7pm and all went to bed shortly thereafter so that we could get some sleep before leaving for Chiang Mai.

Tuesday, February 1st, 2000
Day 9 in Mae Moh

We spent the weekend in Chiang Mai for the trek. We were hoping to meet with Professor Weininger to discuss the problems that we had been having, but he was not able to come up. Instead, we spoke with him over the phone and had a meeting with Professor Lemone on Monday instead. We could not find the taxi stand and so we took a late train back to Lampang. We arrived around 2:30am and stayed at Kim City Hotel, where we were to be picked up at 9:00.

Yae called to inform us that Opal would be arriving that morning and would meet us there around 10:00am. Once she got there we spoke briefly about what needed to be done, and then started back to Huay King. While I stopped at the hospital to send an email to Professor Weininger, Justin and Tom went to the market to get us lunch.

We went to Moh Seri around 1:00pm to meet with Kaewae Tapanyo, the leader of that village, to ask a few questions and see about setting up our focus groups. The focus group with the younger generation will be held on Saturday, February 5th at 6:00pm, and the groups for the leaders and the elders will be held the morning and afternoon of the 8th. At this time we were informed that there was a funeral ceremony taking place the 5th and the 6th, and so we will be staying over in the temple that night to observe.

From there, we went to the official building in Moh Luang where we met with the director of community development again around 3:30pm. Opal and Yae spoke with him about our project and obtained some of the information about the village sizes for us. After that we returned to the flat but did not go into the field because there was a lot of work to be done. Additionally, we decided that we most likely would not go into the field this week because they would not be going to any of the villages that are a part of our project and we could put the time to better use.

Wednesday, February 2nd, 2000
Day 10 in Mae Moh

We left around 8:00am this morning to meet with the governor of Amphoe Mae Moh. He seemed a little grumpy at first upon hearing about our project, but that later changed. He was very concerned that we be careful about not mentioning the fact that we are specifically studying relocation, but gave permission for the project nonetheless.

After the meeting with the governor, we went to the meeting with all the leaders of the villages in Tambon Mae Moh. We watched a sort of commissioning ceremony for all the newly elected officials, and then the governor began to tell the audience about our project. Justin, Tom, and I went up to the front with Opal where she told them exactly what we would be doing and named the specific villages.

From there we went to the hospital to see what arrangements were being made for Professor Weininger to come up here, and then to lunch. Following lunch we went back to the official building in Moh Luang to meet with the leaders from Moh Luang and Na Saak, and from Moh Luang and Na Kham so that the focus groups could be arranged. Those involving residents of Tambon Mae Moh are scheduled for Sunday the 6th, and those with residents of Tambon Na Saak for Monday the 7th. Because of the need to accommodate the

leaders before they leave for the conference, we had to schedule the appointments on Sunday and Monday. Opal will be able to stay to moderate for us, but only one of us will be able to say in Moh Seri to observe the funeral.

Once all the focus groups were scheduled, we were able to sit down with Yae and Opal and plan exactly what would be done with our surveys. On February 5-7, there will be three teams totaling 19 people. They will be split up into three groups for each of the villages selected for each night. From the 8-11, there will be only 15 people going out because the 4 nurses need to go back to their regular jobs. During this week we will be able to survey all of the families included in the Chula study for the selected villages, as well as for Moh Seri. The numbers are as follows (in households):

Tambon Mae Moh	Moh Luang.....82
	Na Kham.....57
Tambon Na Saak	Na Saak.....83
	Moh Luang.....71
Amphoe Muang	Moh Seri.....166

It was also arranged that Professor Weininger would be coming up tomorrow night to meet with our group to discuss the obstacles and difficulties that we have been having.

Thursday, February 3rd, 2000
Day 11 in Mae Moh

We were dropped off in Lampang at 9:30am this morning so that we could meet Professor Weininger at Kim City. His flight did not come in until 5:00pm, but the morning was the most convenient time for the van to drop us off. We spent the entire day making extensive revisions to the Introduction, Background, and Methodology chapters. Once

Professor Weininger arrived, we spoke for approximately two hours about the problems that we have been having with our project, as well as about our group dynamics issues.

Friday, February 4th, 2000
Day 12 in Mae Moh

The van picked us up this morning at 9:00am so that we would be back at Huay King in time for our training session with the field workers. It was decided that we would go through each survey question by question with all the workers (rather than in the pilot test where we received feedback from only a selected group of data collectors) in order to clarify exactly what was being asked. We tried to explain our objectives for all of the questions so that they would have a better idea of what we were trying to do, and would then be better prepared to obtain the information for us. It was really useful for everyone concerned to have this session, but rather frustrating seeing as how we thought these things had been cleared up earlier in the week.

Because we went through the surveys question by question it took quite a while to get through all of it, and some of the data collectors were getting a little antsy towards the end because it was past lunch time. We finished up and went to the market to buy lunch. We managed to get some work done here for about an hour and a half before it was time to leave again.

Saturday, February 5th, 2000
Day 13 in Mae Moh

We woke up early so that we could go over the materials for the focus groups with Opal in order to prepare for this evening at Mo Seri. We tried to go through both the Thai and English copies to make sure that the translations are correct, but this is not as much an issue with Opal as it is with the surveys the data collectors have because she speaks English

and has both copies. She also spent a good amount of time verbally summarizing some of the EGAT documents for us that we have been waiting for.

We held an orientation session for the data collectors at 3:30pm before going into the field to get them acquainted with the maps and the plan for the evening. Two teams were being sent to Mo Seri (because it has the largest sample population), and then one each to Tambons Mae Moh and Na Saak. Prior to that we worked individually on a number of small things that needed to be completed.

After discussing the schedule for the upcoming days, we decided that it would be most beneficial for us to split up so that we would be able to oversee as many facets of the project as possible. Justin went into the field with the data collectors in case that there were any problems with the surveys and then returned to the flats. Tom and I, on the other hand, went to Mo Seri for the focus group with the young generation and stayed the night to observe the funeral preparations as planned.

We got to Mo Seri rather early so that the field workers would have time to walk around and familiarize themselves with the map (which was not necessary for the other villages because they have been working there for quite some time now), which left us about an hour until our focus group began. Tom and I decided we could best spend that time by walking the perimeter of the village and making observations before returning to take notes.

We noticed and photographed a number of things while we walked around. Walking up the main road from the highway we were told that this market is abandoned because the people preferred to go into the city to purchase what they needed. We walked past the only pay phone in the village on the way to the town hall where elections were being held that evening. When we arrived, they were counting ballots and tallying the results on a large chalkboard while some of the younger villagers played volleyball in the adjacent courts. In this area we were also able to see the water system that is set up and take pictures as well.

From our wanderings we were able to find out that the village is bordered on three sides by pineapple fields, the fourth border being the highway with pineapple fields beyond it. There are only two paved roads in the entire village; one leads in from the highway but stops about a block and a half or two blocks in, and the second is the road around the perimeter of the pond and up the entrance for the temple. Even these two roads resemble more of a sidewalk than an actual road, but overall the condition of the roads (especially in comparison with Na Saak) was very good. By this time we had to return to the town hall for the focus group, which was very informative and went well.

A few of the participants in our focus group volunteered to show us around for the evening after the translators left. They took us to drop off our belongings at a building in the complex directly adjacent to the temple, on the other side from the monks' quarters, and then back to the town hall for classical dance rehearsal. Some of the boys played instruments while the girls practiced, and they later switched to an audio tape for the more complicated pieces. After about an hour we were taken to the funeral on the other side of town.

There were three large tents set up outside with tables and chairs underneath, and the area was fairly crowded. Men, women, and children were all around talking, but the attitude seemed more festive than one would expect. All of the chairs were facing a building with open windows through which one could see the flower arrangements that surrounded the casket. Inside with the body of the deceased were the family members as well as the monks were chanted prayers well into the evening. There was an audio system set up with a microphone inside so that the community members could hear and follow along with the prayers that were being said. After this, food was brought out for everyone and we returned to the temple once we had eaten.

Sunday, February 6th, 2000
Day 14 in Mae Moh

We woke up and had breakfast a little before 8:00am with our hosts, some of whom had stayed in an adjoining room the night before. Yim came with the van around 8:30am to pick Tom up and take him to the focus groups in Tambon Mae Moh. Even though the actual funeral was today, we had decided that more information could be obtained having two people at the focus groups and one at the funeral than the reverse.

After Tom left, I packed up my belongings where I had been staying. Just after I had finished, Bomb came to get me. He took me into the temple where I saw the ordination of four novice monks for the funeral. The monk sat with his back to the Buddha statues, facing the four young boys and three elder men who were present. He led through a number of prayers that they repeated, and then he handed each of them their saffron robes. Along with the elder men, he helped the boys to get dressed. First a one-shouldered piece of material was placed on each of them, with the right shoulder left bare. A second, large rectangular piece of material was wrapped around each boys' waist and folded back and forth on itself before it was tied to form a sort of sarong. The final piece of material was similar to the second one. It was folded back and forth in an accordion fashion and then let out so that it could be wrapped around the chest and left shoulder of the boy. The remaining material was left folded into a tight column, draped over the shoulder, and fastened with a tie or a sash above waist-level.

Once each of the novices had been dressed, they returned to pray with the monk. Again they repeated the prayers that were said, and made an offering that was placed on a gold platter next to one of the statues of Buddha. As soon as the ceremony was complete, the boys were driven away in the back of a *song tao* and I returned to the other building. A short time later, one of the boys took me to his house for lunch. When we arrived, the monks were eating lunch. After they finished they sat down in chairs along the wall, the four novice monks together and the four

elder monks together. We sat down to eat before leaving for the funeral.

Everyone for the village was at the funeral, and all of the residents walked in the procession with the exception of the little children. Every person held onto a rope that was attached to the funeral cart. The cart was a large wooden frame with spoke wheels, and ornately decorated. The coffin sat in the middle, completely covered with a replica of a temple that had been constructed from wood and paper. All around the edge of this were large floral arrangements and other items prepared especially for the deceased. At the front of the cart, in the middle of all of the flowers, was a framed picture of the woman who had died.

We walked about 1 kilometer to the funeral pyre. The atmosphere was light-hearted and rather festive; many people were laughing and talking, some joking and throwing popcorn in the air. When we arrived at the funeral pyre, we took a seat in the tents and chairs that had been moved from the night before. Women came around and passed out glasses of water, small containers of perfumed oil, and incense sticks. The monks chanted a few more prayers and family members placed what looked like saffron robes on the cart. The monks would then bless and remove them, and the family members took a number of pictures. The novice monks were included in the pictures, and from what I could discern they were family members who were ordained specifically because of the funeral.

Off to the side of all of this there was a *song tao* parked under a tree that was filled with musicians. Several sat on the top of the vehicle, and all played relatively up-beat music thorough the time that we were there. As soon as the pictures were completed, the men began to break apart the decoration on the cart and place them on the actual pyre. All of the flowers and other decorations were placed in and around the pile of wood. The coffin was next placed directly on top, and the lid underneath the logs. I was surprised to see how ornate of a coffin was being used since it was going to be burned, but I realized that it is comparable

in America as well since the ornate coffins used in funerals are buried in the ground. The decorative 'house' that had been assembled was taken off and placed on top of the coffin, and a long fuse was led to a post by the tents.

At this point everyone got up and placed the incense stick they had been given on one of two gold platters and walked off to the side of the area, near the road. Two men carried the trays to the pyre and emptied them on top of the coffin, and walked back to the tent. Only a few people remained by the tents, presumably members of the family, and the fuse was lit to spark the pyre. It burned rather quickly, but everyone (with the exception of the few people left by the tents) and the monks began their way back to the village before it had been burned to ash. Throughout the day I could see pieces of ash fall here and there from the sky.

Following the funeral, everyone returned home to take a nap, and I did the same. After about an hour, one of the girls came to get me and asked if I would like to help prepare food. She led me to a building that was adjacent to the monastery where about 25 women were preparing food. I sat in a circle with her and five other women who were peeling soy beans in preparation for the festival on Monday. At the same time, there was also a group of men sitting on tables outside drinking whiskey and playing music. I continued helping them until the van came to pick me up.

Monday, February 7th, 2000
Day 15 in Mae Moh

We had our focus groups in Tambon Na Saak today, a sort of marathon session with one after another. Tom and Justin went to them while I went to the hospital to check on some of our secondary data that we have been waiting for. Originally, I was supposed to meet up with them in Na Saak, but there had to be a change in plans because of the availability of the vans. I could only be taken to the hospital and back, but it was not that much of an inconvenience because Opal was not able to accompany us. Having only Poi would have

kept three people as useful as two, and I so I worked on the document and my observations back at the flat.

I left for the field around 3:30pm with Tom and Yae's team while Justin stayed in Na Saak to finish up the final focus group of the day. There was already another van when we got there, but we had a relatively difficult time because so many people were already at the temple getting ready for the evening's festivities. We went to two houses each before leaving for the traditional Khatok dinner that was being held.

We did not go into either house that we went to this afternoon. It took a while to find the houses because the map is incorrect, and even once we found them the people were not always home. The first house that we went to was a large wood house with paned-glass windows. It was on stilts, and underneath part of it was a small convenience store (I have counted 6 so far, but I am nearly certain that there are more). There was an old woman (over 86 according to the house registration records) laying down on a table. She did not speak to us, but ever once in a while she would sit up and spit phlegm into a bucket on the ground. We sat in the convenience store to interview/survey the woman who was home. I was quite relieved that she did not cry, I'm not sure that I would have known how to react if she had. I was surprised to hear that the family had a car, however, as this was the first positive answer I have heard to that question.

The second house that we went to was down the street. We entered a gate and there were two houses; I am uncertain which one we were actually supposed to be at because we stayed outside. There were many chickens and puppies, and three young cows in a pen eating when we arrived. An elderly man and woman were outside with an infant boy, but before we left there were also two men, a woman, and 5 young children outside with us. Both of the houses were on stilts and had glass windows, and were surrounded by the same gate.

At this point Tom and I left for the temple. Several people apparently recognized me and said hello, and I even heard one boy say my name. We met a woman who spoke rather good English and sat with her in the temple. She explained that this was a Buddhist holiday, similar to the Eucharist in Christianity. We observed the prayers and offerings that were made, and then were blessed by the monks with water. Once this was finished, we were led outside for the Khatok dinner.

The area on the side of the temple, to the left of the construction work, was roped off with bamboo rods and decorated with lanterns. Reed mats were placed end to end to form three long rows, the edges of which were lined in lanterns. At the head of the area, the furthest distance from the temple, a stage was set up and a band played on the side.

Dinner was brought out by women and girls in traditional northern Thai dress and included hong-lee curry and tom yum soup. Villagers set off firecrackers during dinner, and about 12 of the village girls performed the fingernail dance. Afterwards the music continued to play and several people came on stage to either sing or dance. Unfortunately, we had to leave relatively early and the dinner was still continuing when we left.

Tuesday, February 8th, 2000
Day 16 in Mae Moh

Around 8:00am we left for Mo Seri and conducted the last two of our focus groups with the village leaders and the elders. Most of what they said corroborates pretty well with the responses of other participants, so it was nice to see that there seems to be a general trend and some common feelings shared by all the villages that we examined. The first group was with six of the eldest men in the village; it began around 9:00am and lasted for a little over an hour. The second group was with four members of the community – the pu-yai-ban, two of his assistants, and a member of the aubotol. It began around 10:30 and lasted for nearly an hour and a half.

Once the focus groups were completed, we stopped for lunch and then started to work on the translations. Although we had taken fairly extensive notes, Opal summarized the main points of what had been said by each group so that we were sure we had a thorough understanding of the information received. Because there were so many groups this took quite a while, and as soon as we were finished we left for the field.

Justin went to Mo Seri because, unlike Tom and myself, he had not spent any significant amount of time in that village. Tom and I went to Tambon Na Saak, specifically to Mae Luang. The group that I was with went to six houses that evening.

The first house that I went to was made all of wood and on stilts, next to a large sort of barn filled with hay. Inside the house was large and very open, with only a wall dividing the two large rooms. There was a woman of about 40yrs old, several small children who could be heard laughing in the next room, and an elderly woman well into her 70s or 80s. The house was well kept and tidy, with the exception of a large automobile engine sitting in the middle of the floor. All of the windows were closed and the interior was rather dark, but it was still possible to identify the main possessions as a television, refrigerator, king-sized bed, and a stove. While interviewing the woman, her husband came in and the data collectors informed me that this was a very large family who lived in the three surrounding houses. Each day the husband would come to his mother's house after work for dinner. While we were there a neighbor came by and dropped off some vegetables as well.

The second house that we went to we did not go into because the husband and wife were both outside. The woman was burning the household garbage in a fire in the corner of the yard (there is no sort of garbage collection in Mae Luang) while the husband hammered out bent nails. The woman recognized me from Sports Day last week.

One of the smallest and most run-down houses in all of Mae Luang was our third stop, but we did not go inside this one either (although I think that it is unlikely that I would

have been able to stand up inside the roof was so low). The house was not on stilts and the boards were very far apart from each other, leaving the houses very open unintentionally. We spoke with the woman outside tending the chickens; there was no one else home. Interestingly enough, this house happened to be behind one the larger and more well kept houses in the village, a large, lacquered teak house with glass windows.

The family in the fourth house that we went to was certainly doing well for themselves, and their house was one of the nicest that I have seen in any of the villages. It was also a large, lacquered teak house with ceiling-to-floor plate glass windows and a western-style door with a lock on it. The house was flat on the ground with a foundation of cement, but all of the interior and exterior was made of teak. The house had excellent lighting and several ceiling fans with wall controls. At home was a husband, wife, and son about 22 years old. Among the many possessions were expensive wood and glass closets full of clothes, a telephone, refrigerator, television, radio, and a car. The house was also one of the first in which I have seen decorative furniture – in several places there were chairs arranged around coffee tables.

In order to get to the fifth house we had to cross a bridge, and possibly entered into Ban Na Saak. It was a large house on stilts, not nearly as elaborate or comfortable as the last one, but nice nonetheless. There were also a few tables and chairs, as well as many cabinets and an excessive number of dishes. Two children were watching television and the mother was cooking while we interviewed the father.

There was only a man and woman at home in the final house that we went to. There was a lot of furniture and many packaged blankets (maybe they sell them?) stacked throughout the house. In the cooking room were many, many dishes, and there was an ironing board, television, and large stereo speakers in the main room.

We returned to Huay King around 9:00pm and had planned on entering some of the surveys, but the data collectors had not coded any of them yet and the comments still needed to be translated. Hopefully we will be able to begin the data entry tomorrow.

Wednesday, February 9th, 2000
Day 17 in Mae Moh

Aacan Nuntavarn was in Lampang on business, and so we met with her this morning to discuss the progress of our data collection as well as how we planned to analyze the data. When she left for another meeting we went to hospital to check on the provincial health data that we had been waiting for. While an ICD code does exist for respiratory illnesses (there are 12 ICD codes for diseases affecting various systems of the body; for example, codes exist for circulatory disorders), the number of patients is not segregated by mu ban or tambon. Because we have no secondary data for our health questions, we will have to rely entirely on information extracted from the surveys.

After returning from the hospital, we had lunch and met with Aacan Nuntavarn again. She was able to organize a few things with Yae, and we decided that we would go into Moh Luang very early in the morning rather than staying overnight due to logistical constraints. We were able to get some paperwork done after our meeting, and then went out into the field again.

Justin returned to Mo Seri so that he could start working on the comment translations with Poi while they were still in the field. Tom and I both went to Nakaem because we did not have any data or observations for Tambon Mae Moh yet. The group that I was with visited only two houses in Nakaem that evening.

Mae Luang is obviously a resettlement village and is much more modern and impersonal like a city. All of the roads are paved, **and** the houses are organized and aligned into neat blocks **similar** to suburbs in the United States. Most of the houses are surrounded

by a concrete wall with a large metal gate (usually locked, I was surprised to note) and are more modern in their construction. Very few of the houses are made entirely of wood, and even fewer are up on stilts; the majority of the houses are cement and concrete. The infrastructure is obviously better as well. In addition to being located in close proximity to the hospital and a large market, as well as having easy access to main roads, there is a garbage collection system in place.

We had to navigate around the large metal gate that guarded the first house. There were not any animals other than chickens, but the yard was large and relatively neat. Three generations of women were at home when we arrived, and we interviewed the eldest present. One of the women was pregnant and stayed in the kitchen most of the time, looking out the window (incidentally, the window looks out directly onto the adjacent house about 1m away). It was a large house filled with possession, including a refrigerator, vanity, television, stereo, and an iron. It was a very solid and well-constructed house, but one of the few made entirely of wood in the village.

The second family that we interviewed the second family in the restaurant that was attached to their house. There were three woman, a man, two children, and a baby outside. The restaurant had a large (by village standards) eating area with about 8 tables and was immaculately clean, all made of cement and located off of one of the busier roads in the mu ban. While we were there a little boy came out of the house with a Nintendo Gameboy.

We stopped after the second house and left for a picnic by one of EGAT's reservoirs, presumably because the data collectors had completed the sample group for that village. We returned to the flat afterwards and were able to work on the focus group data for a while. Although Justin returned with some translated surveys, the database still had not been corrected and we decided that it would be best to wait to enter the data since we were leaving early the next morning for Moh Luang.

Thursday, February 10th, 2000
Day 18 in Mae Moh

Yim dropped us off at the temple in Moh Luang a little after 6:00am this morning so that we could make some observations. We were not able to stay over in the village because of the time constraints, but thought that it was important to get there early enough to observe the morning activities of the villagers. It was still dark out and rather difficult to see anything because we were only able to walk up and down the streets, but fortunately there were streetlights. It got light out around 7:00am and we could see people starting to leave for work. By about 7:30am there were people working in the few fields that border the village. Like Nakaem, Moh Luang has a much more developed infrastructure than Mo Seri and especially more than Na Saak. The houses are similar in design, construction, and layout to Nakaem as well.

We were able to walk around the village for about three hours before we were picked up. The temple complex is much more developed than that in Mo Seri. The entire area is surrounded by a cement wall, and in addition to the monestary, chedi, and actual wat there were several other auxillary buildings used for various functions. I was surprised to find that all of the doors were locked when I attempted to go in. We also managed to get lost and wander into the neighboring village at the same time though, so we stayed out longer than the three hours that we had initially planned on.

After lunch at the market and a short break we went into the field for the final night of data collection. We did not work a full evening because Justin, Tom, and I planned to take the data collectors out to eat to thank them for all their help, but we still managed to cover seven households over the course of the evening.

The first house that we went was set back in a large open area behind a concrete wall and metal gate. There were two other houses on the same piece of property that were all in

roughly the same condition. This house, in particular, was little more than a shack divided into two rooms. Two of the walls were wood, one was patched together from corrugated aluminum, and the fourth was left open. The mother was cooking on the front porch while the two children completed their homework underneath the string of clothes hanging across the ceiling. Due to the severe lack of space, we interviewed the father outside.

The next house was down the street from the first, but in much better condition. It was a two-story concrete house with a large yard and many chickens. An old woman was in a shed cooking dinner when we arrived, and as we spoke with her an elderly man and young boy came out as well.

After the first two houses were completed, we had to get back in the van to go to the others for the night. We drove for a few minutes to a section of the village that looked much more like a suburb. The majority of houses had front lawns and were of a more western style. Perfectly aligned down the street were the green tire garbage cans and driveway after driveway was cluttered with motorcycles and filled with chickens, dogs, and children playing in the dirt.

The family in the third house was well off. The steps leading inside, as well as the floors and ceilings, were all made of tile. The house was clearly separated into rooms, with a living room filled with chairs and coffee tables, a work area, and a kitchen. There was a large television and VCR on top of a large carved wood cabinet. Of the two men and one woman (all in their 30s), we spoke with the woman.

The fourth house was more of a traditional Thai village home, and there were two women outside peeling tamarind when we arrived. From the porch I could only see a little of the interior, but noticed a boy on crutches watching television and later playing video games. Another woman and her daughter came back from running while we were there as well.

We did not go into the fifth house, probably because we all would not have fit inside.

In addition to the two data collectors and myself, there were 3 women and 4 children outside finishing up dinner and playing with the puppies. The sixth house that we went to was also more of a modern home, but we stayed outside of that one as well. We sat on chairs on the well-lit front porch and spoke with the mother while three children ran in and out of the house. I think that this might have been the garbage can factory because there were more than 20 garbage cans stacked on the side of the house, as well as the lids and stands for them.

Friday, February 11th, 2000
Day 19 in Mae Moh

We decided that it would be best to stay in from the field and get all (or the good majority) of our data collection done before returning to Bangkok. We were initially going to use EpiInfo, but decided that Access and Excel would suit our needs better. Justin created three different databases for the surveys – one for Na Saak and Mae Luang, one for Nakaem and Moh Luang, and one for Mo Seri. We spent the entire day entering data and working on translations. Although we worked well into early morning the next day, it was not possible to get all of the surveys entered because of the quantity and length, and so the rest had to be put in as soon as we returned to Bangkok.

Appendix J
EGAT Pollution Levels

รายงานสถานการณ์มลพิษทางอากาศบริเวณพื้นที่แม่เมาะ จังหวัดลำปาง

ในช่วงวันที่ 1 - 9 มกราคม 2543

1-9 Jan

ผลการตรวจวัดมลพิษทางอากาศบริเวณโรงไฟฟ้าแม่เมาะ จังหวัดลำปาง ในช่วงวันที่ 1 - 9 มกราคม 2543 พบว่า ปริมาณก๊าซซัลเฟอร์ไดออกไซด์เฉลี่ย 1 ชั่วโมงและ 24 ชั่วโมงสูงสุด มีค่าอยู่ในช่วง 5 - 453 และ 2 - 73 ไมโครกรัมต่อลูกบาศก์เมตร ตามลำดับ ซึ่งมีค่าอยู่ในเกณฑ์มาตรฐาน โดยตรวจวัดปริมาณก๊าซซัลเฟอร์ไดออกไซด์เฉลี่ย 1 และ 24 ชั่วโมงสูงสุด ที่ 453 และ 73 ไมโครกรัมต่อลูกบาศก์เมตร ได้ที่สถานีบ้านกอออก (กฟผ) ในวันที่ 3 มกราคม 2543 รายละเอียดดังในตาราง

ตาราง : ผลการตรวจวัดค่าสูงสุดของระดับก๊าซซัลเฟอร์ไดออกไซด์เฉลี่ย 1 ชั่วโมงและ 24 ชั่วโมง (ไมโครกรัมต่อลูกบาศก์เมตร) ที่สถานีตรวจวัดคุณภาพอากาศในพื้นที่แม่เมาะ ในช่วงวันที่ 1 - 9 มกราคม 2543

สถานีตรวจคุณภาพอากาศ	ค่าสูงสุดของก๊าซซัลเฟอร์ไดออกไซด์ SO_2			
	เฉลี่ย 1 ชั่วโมง	วันที่/เวลา	เฉลี่ย 24 ชั่วโมง	วันที่
กรมควบคุมมลพิษ				
- สถานีอนามัยบ้านสบป่าด	5	**	3	3
- โรงเรียนบ้านสบเดือน	39	9/11	8	7
- บ้านท่าลี่	18	7/11	3	7
- สถานีการประปาแม่เมาะ	217	3/13	24	3
- บ้านกอรอก	181	7/12	26	4
การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย				
- บ้านกอออก	453	3/13	73	3
- บ้านแม่จาง	68	5/11	5	9
- บ้านสบเมะ	68	1/12	9	1
- บ้านสบป่าด	16	1/16	3	1
- บ้านท่าลี่	24	7/10	5	7
- บ้านห้วยคิง	351	3/13	39	3
- ศูนย์รวมราชการแม่เมาะ	259	3/12	28	3
- สถานีตรวจคุณภาพอากาศหลัก	249	3/13	51	3
- บ้านเตดีจ	8	**	8	4
- บ้านหัวฝาย	102	4/11	12	4
- บ้านใหม่รัตนโกสินทร์	309	5/12	41	5
- ค่ายประตุมหา	26	8/12	2	4,8
- บ้านนางฮุง	173	3/15	39	3
ค่ามาตรฐาน	1,300		300	

หมายเหตุ : * : ค่าที่อุณหภูมิ 25 องศาเซลเซียส ความดัน 1 บรรยากาศ ** : ตรวจพบมากกว่า 2 ครั้ง

■ : ค่าสูงสุดที่ตรวจพบ

Has low > standard at 1300

ตาราง : ก๊าซซัลเฟอร์ไดออกไซด์เฉลี่ย 1 ชั่วโมงที่เกินมาตรฐาน 1,300 ไมโครกรัมต่อลูกบาศก์เมตร

ที่ตรวจวัดได้จากสถานีตรวจวัดคุณภาพอากาศในพื้นที่แม่เมาะ ในระหว่าง มกราคม 2542 - มกราคม 2543*
 JAN JAN

ปี	เดือน	จำนวนครั้งที่ SO ₂ มีค่าเกินมาตรฐาน 1,300 มกค./ลบ.ม.	ค่าเฉลี่ย 1 ชั่วโมงสูงสุด (มกค./ลบ.ม.) max 1 hr	วันที่/เวลา	สถานี
2542	มกราคม JAN	-	660	25/14	สถานีตรวจคุณภาพอากาศหลัก (กฟผ.) MS
	กุมภาพันธ์ Feb	-	760	24/19	สถานีอนามัยบ้านสบป่าด (คพ.) S
	มีนาคม MAR	-	550	24/18	สถานีบ้านสบเต็น (คพ.) ST
	เมษายน APR	-	367	6/13	สถานีบ้านท่าลี่ (คพ.) TS
	พฤษภาคม MAY	-	309	4/13	สถานีบ้านสบเต็น (คพ.) ST
	มิถุนายน Jun.	-	438	6/10	สถานีบ้านใหม่รัตนโกสินทร์ (กฟผ.) RS
	กรกฎาคม Jul	-	212	21/21	สถานีบ้านกอรอ (คพ.) KR
	สิงหาคม Aug	-	354	19/11	สถานีบ้านใหม่รัตนโกสินทร์ (กฟผ.) RS
	กันยายน Sept	-	286	2/16	บ้านหัวฝาย (กฟผ.) HF
	ตุลาคม Oct	-	417	11/21	สถานีตรวจคุณภาพอากาศหลัก (กฟผ.) MS
	พฤศจิกายน NOV	-	430	27/12	สถานีตรวจคุณภาพอากาศหลัก (กฟผ.) MS
	ธันวาคม Dec	-	474	29/16	สถานีตรวจคุณภาพอากาศหลัก (กฟผ.) MS
2543	มกราคม* Jan	-	453	3/13	สถานีบ้านกอรอ (กฟผ.)

หมายเหตุ * : วันที่ 1 - 9 มกราคม 2543

particulate matter $10\mu^2$ > 2.885

PM₁₀ 24 hr. avg.

ตาราง แสดงระดับฝุ่นละอองขนาดเล็กกว่า 10 ไมครอน เฉลี่ย 24 ชั่วโมงที่เกินมาตรฐาน
ที่ตรวจวัดได้จากสถานีในพื้นที่แม่เมาะ

times > standard max

ปี	เดือน	จำนวนครั้งที่ PM10 มีค่าเกินมาตรฐาน	ค่าสูงสุด (มคก./ลบม.)	วันที่ Date	สถานี Station
2542	มกราคม	10	169	25	สบป่าด SP
	กุมภาพันธ์	60	259	22	สบป่าด SP
	มีนาคม	69	311	8	บ้านท่าลี TS
	เมษายน	1	127	4	บ้านท่าลี TS
	พฤษภาคม	-	77	19	สบป่าด SP
	มิถุนายน	-	77	10	บ้านท่าลี TS
	กรกฎาคม	1	131	11	บ้านท่าลี TS
	สิงหาคม	-	79	8	สบป่าด SP
	กันยายน	-	56	2	บ้านกอรก GP
	ตุลาคม	-	66	20	บ้านท่าลี TS
	พฤศจิกายน	-	92	26	ประปาภูมิภาค GP
	ธันวาคม	1	135	23	บ้านท่าลี TS
2543	มกราคม	-	95	5	ประปาภูมิภาค GP

Standard = 120

ตาราง : ระดับก๊าซซัลเฟอร์ไดออกไซด์เฉลี่ย 1 ชั่วโมงและระดับฝุ่นขนาดเล็กเฉลี่ย 24 ชั่วโมง สถานีประปาส่วนภูมิภาคแม่เมาะ (สถานี ค
 ในระหว่าง มกราคม 2541- มกราคม 2543* PP Status

ปี	เดือน	SO ₂ (ไมโครกรัมต่อลูกบาศก์เมตร)			PM10 (ไมโครกรัมต่อลูกบาศก์เมตร)		
		จำนวนครั้งที่ Time 2, 3, 4, 5 SO ₂ มีค่าเกิน ค่ามาตรฐาน	ค่าสูงสุด - max	วันที่/เวลา Date / Time	จำนวนครั้งที่ PM10 มีค่าเกิน H. limit 7 (check) ค่ามาตรฐาน	ค่าสูงสุด - max	วันที่ Date
2541	Jan	-	285	19/13	-	-	-
	กุมภาพันธ์	-	334	19/13	-	-	-
	มีนาคม	-	-	-	-	-	-
	เมษายน	-	-	-	-	-	-
	พฤษภาคม	-	593	29/11	-	-	-
	มิถุนายน	-	470	02/19	-	-	-
	กรกฎาคม	-	934	2/19	-	-	-
	สิงหาคม	-	604	27/17	-	-	-
	กันยายน	-	822	8/11	-	-	-
	ตุลาคม	-	1034	17/15	-	93	16
	พฤศจิกายน	-	943	7/14	-	90	13
	ธันวาคม	-	1035	5/12	-	90	31
2542	Jan	-	225	19/13	1	155	25
	กุมภาพันธ์	-	73	9/16	-	213	7
	มีนาคม	-	62	14/9	7	148	18
	เมษายน	-	161	9/22	-	95	3
	พฤษภาคม	-	55	19/16	-	93	4
	มิถุนายน	-	11	1/1,30/14	-	19	28
	กรกฎาคม	-	71	5/15	-	91	1
	สิงหาคม	-	13	-	-	99	23
	กันยายน	-	115	8/12	-	91	23
	ตุลาคม	-	63	26/15	-	96	6,7
	พฤศจิกายน	-	136	14/16	-	90	26
	ธันวาคม	-	71	31/19	-	99	29
2543	มกราคม*	-	217	3/13	-	95	5
ค่ามาตรฐาน		1,300			120		

หมายเหตุ : * วันที่ 1-9 มกราคม 2543

- - - ไม่มีข้อมูล

** : ตรวจพบเกิน 2 ครั้ง

□ : ค่าที่เกินมาตรฐาน

ตาราง : ระดับก๊าซซัลเฟอร์ไดออกไซด์เฉลี่ย 1 ชั่วโมงและระดับฝุ่นขนาดเล็ก เฉลี่ย 24 ชั่วโมง สถานีบ้านหัวฝาย (กฟผ.)
H F S/h ho
 ในระหว่าง มกราคม 2541 - มกราคม 2543

ปี	เดือน <i>#time > standard</i>	SO2 (ไมโครกรัมต่อลูกบาศก์เมตร)			PM10 (ไมโครกรัมต่อลูกบาศก์เมตร)		
		จำนวนครั้งที่ SO ₂ มีค่าเกิน ค่ามาตรฐาน <i>max</i>	ค่าสูงสุด <i>max</i>	วันที่/เวลา <i>Date/hr.</i>	จำนวนครั้งที่ PM10 มีค่าเกิน ค่ามาตรฐาน <i>#time > standard</i>	ค่าสูงสุด <i>max</i>	วันที่ <i>Date/hr</i>
2541	มกราคม	-	440	30/12	-	-	-
	กุมภาพันธ์	-	841	12/12	-	-	-
	มีนาคม	-	888	30/10	7	192	23
	เมษายน	-	603	9/10	2	125	13
	พฤษภาคม	-	1040	14/16	-	94	1
	มิถุนายน	-	899	28/17	-	43	3
	กรกฎาคม	-	993	17/13	-	47	30
	สิงหาคม	2	1714	17/12	-	50	4
	กันยายน	-	419	3/15	-	43	14
	ตุลาคม	-	176	15/11	-	71	19
	พฤศจิกายน	-	60	30/13	-	89	1
	ธันวาคม	-	131	26/12	-	74	21
2542	มกราคม	-	246	26/13	4	162	26
	กุมภาพันธ์	-	134	10/12	16	192	6
	มีนาคม	-	272	22/12	17	259	8
	เมษายน	-	244	2/12	-	44	22,24
	พฤษภาคม	-	231	24/9	-	32	1
	มิถุนายน	-	110	15/17	-	39	1, 6
	กรกฎาคม	-	147	3/12	-	23	4
	สิงหาคม	-	129	21/15	-	31	16
	กันยายน	-	266	2/16	-	21	29,29,30
	ตุลาคม	-	52	7/10	-	23	9
	พฤศจิกายน	-	60	26/16	-	24	18
	ธันวาคม	-	47	31/18	-	49	24
2543	มกราคม*	-	102	4/11	-	36	7
ค่ามาตรฐาน			1,300		120		

หมายเหตุ : * วันที่ 1-9 มกราคม 2543

- ไม่มีข้อมูล
- ค่าที่เกินมาตรฐาน

ตารางที่ 1 แสดงผลการประเมินการเพิ่มกำลังการผลิตกระแสไฟฟ้าและการควบคุมปริมาณการระบาย SO₂ ของโรงไฟฟ้าแม่เมาะ

ค่าเฉลี่ย 12 เดือน

ค่าเฉลี่ย 1-12 เดือน

12 เดือน 12 เดือน ค่าเฉลี่ย

เดือนปี	ช่วงเวลา 06.00-12.00 น.			ช่วงเวลา 12.00-06.00 น.			ผลการตรวจวัด SO ₂ ในบรรยากาศสูงสุด	
	กำลังการผลิตสูงสุด (MW)		ปริมาณ SO ₂ สูงสุด (Tons/Hr.)	กำลังการผลิตสูงสุด (MW)		ปริมาณ SO ₂ สูงสุด (Tons/Hr.)	(ไม่โครกรัม/ลูกบาศก์เมตร)	
	หน่วยที่ 1-7	หน่วยที่ 8-13		หน่วยที่ 1-7	หน่วยที่ 8-13		Ambient SO ₂	
๑๘ ธันวาคม 2541	155	1120	7	295	1780	15	422	สถานีศูนย์ราชการแม่เมาะ เวลา 16.00 น. GC
๑๑ มกราคม 2542	150	1200	7	430	1790	15	660	สถานีหลักฯ เวลา 14.00 น. MS
๑๑ กุมภาพันธ์ 2542	195	1800	7	345	1800	14	291	สถานีศูนย์ราชการแม่เมาะ เวลา 12.00 น. GC
๑ มีนาคม 2542	1-15	207	7	464	1143	13	147	สถานีบ้านกอ. เวลา 11.00 น. KC
	16-31	303	9	417	1562	13	445	สถานีบ้านแม่จาง เวลา 18.00 น. MS
๑๑ 1-30 เมษายน 2542	446	1407	15	374	1455	14	362	สถานีบ้านกอ. เวลา 13.00 น. KC
๑๑ 1-31 พฤษภาคม 2542	460	1502	15	459	1505	15	231	สถานีบ้านหัวฝาย เวลา 9.00 น. MS
๑๑ 1-30 มิถุนายน 2542	462	1504	15	475	1802	15	438	สถานีบ้านใหม่รัตนฯ เวลา 10.00 น. MS
๑๑ 1-31 กรกฎาคม 2542	487	1804	15	491	1804	15	210	สถานีบ้านใหม่รัตนฯ เวลา 14.00 น. MS
๑๑ 1-31 สิงหาคม 2542	488	1672	14	495	1656	15	354	สถานีบ้านใหม่รัตนฯ เวลา 11.00 น. MS
๑ กันยายน 2542	1-15	367	10	491	1503	15	286	สถานีบ้านหัวฝาย เวลา 16.00 น. MS
	16-30	365	9	488	1491	15	168	สถานีบ้านกอ. เวลา 11.00 น. KC
๑ ตุลาคม 2542	1-15	310	7	488	1482	15	417	สถานีหลักฯ เวลา 21.00 น. MS
	16-31	296	7	459	1493	15	215	สถานีบ้านกอ. เวลา 15.00 น. KC
๑ พฤศจิกายน 2542	1-15	216	7	343	1771	13	369	สถานีบ้านกอ. เวลา 16.00 น. KC
	16-30	216	7	374	1789	15	430	สถานีหลักฯ เวลา 12.00 น. MS
๑ ธันวาคม 2542	1-15	296	7	496	1806	15	186	สถานีบ้านกอ. เวลา 11.00 น. KC
	16-31	336	7	378	1770	12	474	สถานีหลักฯ เวลา 16.00 น. MS
๑๐ 1-9 มกราคม 2543	261	1504	7	302	1503	11	453	สถานีบ้านกอ. เวลา 13.00 น. KC
เกณฑ์การปฏิบัติ	500	-	15	500	-	15	780	

หมายเหตุ:

- ค่าปริมาณการระบายซัลเฟอร์ไดออกไซด์ จากปริมาณสูงสุดในแต่ละเดือน
- SO₂ Emission ช่วงวันที่ 1 - 15 มีนาคม 2542 ช่วงเวลา 06.00 - 12.00 น. กำหนดเป็น 7 ตันชั่วโมง และกำลังการผลิตหน่วยที่ 1-7 เพิ่มขึ้นจาก 410 MW. เป็น 500 MW.
- SO₂ Emission ช่วงวันที่ 16 - 31 มีนาคม 2542 ช่วงเวลา 06.00 - 12.00 น. เพิ่มขึ้นจาก 7 ตันชั่วโมง เป็น 10 ตันชั่วโมง และกำลังการผลิตหน่วยที่ 1-7 เป็น 500 MW.
- SO₂ Emission ตั้งแต่เดือนเมษายน 2542 เป็นต้นไป เพิ่มขึ้นเป็น 15 ตันชั่วโมง ตลอดทั้งวันและกำหนดกำลังการผลิตหน่วยที่ 1-7 เป็น 500 MW.
- ผลการตรวจวัดจากสถานีตรวจวัด SO₂ ในบรรยากาศเฉพาะของกฟผ.
- SO₂ Emission ช่วง ต.ค. - ธ.ค. 2542 ช่วงเวลา 03.00 - 13.00 น. กำหนดเป็น 7 ตันชั่วโมง และ 13.00 - 03.00 น. กำหนดเป็น 15 ตันชั่วโมง

standards (tons/hr)

ms to lpu : 7
ms to 3am : 15

ตารางที่ 2 แสดงผลการประเมินการเพิ่มกำลังการผลิตกระแสไฟฟ้าและการควบคุมปริมาณการระบาย SO₂ ของโรงไฟฟ้าแม่เมาะ

เดือนปี	ช่วงเวลา 06.00-12.00 น.			ช่วงเวลา 12.00-06.00 น.			ผลการตรวจวัด SO ₂ ในบรรยากาศสูงสุด (ไมโครกรัม/ลูกบาศก์เมตร)	
	กำลังการผลิตสูงสุด (MW)		ปริมาณ SO ₂ สูงสุด	กำลังการผลิตสูงสุด (MW)		ปริมาณ SO ₂ สูงสุด	ค่าสูงสุด	สถานี เวลา
	หน่วยที่ 1-7	หน่วยที่ 8-13		หน่วยที่ 1-7	หน่วยที่ 8-13			
1 - 15 ธันวาคม 2542	เพิ่ม SO ₂ 5.00						ค่าสูงสุด	สถานี เวลา
1 ธันวาคม 2542	197	1470	5	374	1771	12	42	สถานีบ้าน กอ. เวลา 11.00 น KO
2 ธันวาคม 2542	195	1773	7	373	1769	12	147	สถานีบ้าน กอ. เวลา 11.00 น KO
3 ธันวาคม 2542	176	1766	7	372	1742	13	79	สถานีบ้าน กอ. เวลา 11.00 , 16.00 น KO
4 ธันวาคม 2542	177	1499	6	374	1507	12	79	สถานีบ้าน กอ. เวลา 12.00 น KO
5 ธันวาคม 2542	196	1262	6	374	1481	12	102	สถานีบ้าน กอ. เวลา 11.00 น KO
6 ธันวาคม 2542	215	1037	5	369	1182	9	58	สถานีบ้าน กอ. เวลา 14.00 น KO
7 ธันวาคม 2542	214	1480	6	431	1503	10	69	สถานีบ้าน กอ. เวลา 20.00 น KO
8 ธันวาคม 2542	294	1482	6	422	1504	11	107	สถานีบ้าน กอ. เวลา 05.00 น KO
9 ธันวาคม 2542	296	1713	6	466	1763	12	181	สถานีบ้าน กอ. เวลา 10.00 น KO
10 ธันวาคม 2542	279	1752	7	496	1761	14	118	สถานีบ้าน กอ. เวลา 10.00 น KO
11 ธันวาคม 2542	254	1798	6	435	1806	13	173	สถานีบ้าน กอ. เวลา 12.00 น KO
12 ธันวาคม 2542	183	1793	7	455	1801	15	186	สถานีบ้าน กอ. เวลา 11.00 น KO
13 ธันวาคม 2542	183	1458	6	455	1455	14	123	สถานีบ้าน กอ. เวลา 10.00 น KO
14 ธันวาคม 2542	183	1422	5	447	1749	11	89	สถานีบ้าน กอ. เวลา 11.00 น KO
15 ธันวาคม 2542	254	1742	7	467	1741	12	66	สถานีบ้าน กอ. เวลา 10.00 , 12.00 น KO
ค่าสูงสุด	296	1798	7	496	1806	15	186	สถานีบ้าน กอ. เวลา 11.00 น KO
เกณฑ์การปฏิบัติ	500	-	15	500	-	15	780	

* เป็นค่าผลการตรวจวัดฯ จากสถานีตรวจวัด SO₂ ในบรรยากาศเฉพาะของกฟผ.

Appendix K
Research Questions

Research Questions

Overall Question: “Is Relocation Feasible?”

Health Questions

- Has health been maintained or improved?
- Has access to healthcare been maintained or improved?

Economic Questions

- Were the terms of the relocation agreement acceptable for both sides (i.e. EGAT & the villagers)?
- Has the basic style and mode of living (or poverty level) of each family been maintained or improved?
- Has the economic health of the village been maintained or improved?
- Is there adequate government support for the new community?

Infrastructure Questions

- Have the following been maintained or improved: drainage, water, roads, schools, electricity, markets, and recreation facilities?
- Has the rate of infrastructure growth been maintained or improved?

Environmental Questions

- Has the quality of air, soil & water been maintained or improved?
- Has the agricultural capacity been maintained or improved?
- Has the standard of housing been maintained or improved?
(distance between houses, land size, fields, distance to facilities, construction, design, materials).

Political Questions

- Has the level of awareness, influence and community involvement in politics and the government been maintained or improved?

Social and Cultural Questions

- Have social ties (“social capital”) been severely disrupted?
- Has the social strength and cohesion of the community (attachment) been maintained or improved?
- Has the cultural lifestyle (religious involvement, observation of holidays, generational beliefs) been preserved?

Social Attitude Questions

- Are the residents accepting of or content with the move?
- What are the residents’ attitudes towards EGAT?
- What are the residents’ attitudes towards the government?

Appendix L
Schedule of Mae Moh Trip

Mon	Tue	Wed	Thu	Fri	Sat	Sun
24 5am – Arrive Lampang 10am – Mtg. W/ Nuntavarn Morning – Visit Provincial Govt. complex. 12:30pm – Arrive at Flat. Work on schedule with Yeea. Evening – Revise surveys & set-up Epi-Info database.	25 9am – Leave for Hospital to check email. Difficulty with accounts. 12noon – Make copies of surveys for pilot test. 1:30pm – Arrive at Moh Seri to make a map. 3:30pm – Leave for field observation. Ban Mae Luang.	26 9am – Leave for Hospital. Attempt to get health data. Justin stayed to straighten-out Internet problems. 10:40am – Administer pilot test to Moh Luang / Na Kam. 3pm – Leave for field, pick-up Justin. Observation in Mae Luang.	27 9am – Visit Provincial Govt. office. Afternoon – Go to Lampang to copy surveys. 3pm – Leave for field. *** Stay in Mae Luang this evening.	28 Early AM – Steph & Justin observe activities in Mae Luang. Late AM – Travel to Sport's Day. Spend the day at Sport's day. 1:30pm – Pick-up from Sport's Day. 4:30pm – Picnic with data collectors. 7pm – Arrive back at Flat.	29 Chiang Mai Weekend	30 Chiang Mai Weekend
31 Chiang Mai Weekend	1 Feb. 2:30am – Arrive at Kim City Hotel. 10am – Opal arrives at Kim City. 1pm – Travel to Moh Seri to meet Pu-Yay Ban. 3:30pm – Meet with officials at Amphoe Offices. Evening – Stay at flat to accomplish work.	2 8am – Meeting with Governor of Amphoe. 10am – Meeting with all Pu-Yay Bans at meeting hall. 11am – Hospital to check mail. 12pm – Meeting to set-up focus groups for NS/ML/NK/ML.	3 9:30am – Dropped-off at Kim City to meet SJW. Day – Spent all day making revisions to the IQP in preparation for SJW. 5pm – Arrival of SJW by plane. Two hour meeting with SJW. 8pm – Dinner meeting with SJW.	4 9am – Leave Kim City for flat. 10am – Work with Opal to explain question objectives on surveys. Noon – Lunch 3:30pm – Leave for further observation in the field.	5 8am – Wake and meet with Opal to go-over focus group questions. Translate some EGAT documents. 10:30am – Training with data collectors. 3:30pm – First evening of data collection. Steph & Tom to MS for Focus Group. Justin to NS for field work. Tom and Steph stay in MS.	6 9:00 – Focus Groups in NK/ML. Tom arrives from MS. Steph remains in MS. 11am – 2 nd focus group 3:30 – 3 rd focus group. Evening - Data collection at Moh Seri. Meet Steph.
7 AM & Afternoon - Second marathon Focus Group day. Three focus groups for Na Sak / Moh Luang. Evening – Data collection in the field. Justin to NS, Steph & Tom to MS. Attended special dinner.	8 AM – Final two focus group sessions in MS. Afternoon - Translation/ Focus Group Review session before Opal left for Bangkok. Evening – Field observations. Tom & Steph to Mae Luang, Justin to MS.	9 Early AM – Meet Nuntavarn. Late AM – Visit hospital to get mail. No health data available for us. Afternoon - Meet with Nuntavarn. Evening – Tom & Steph to observe @ Na Kam, Justin to Moh Seri to begin translations with Poi.	10 6am – To Moh Luang for observations. Got lost, got found around lunch time. Afternoon – Break Evening – More data collection. Justin to MS, Tom & Steph to NK/ML. Late Evening – Thank you dinner for data collectors.	11 Marathon Data entry day. Evening – Final data collection night. Stayed at flat to help Poi and a few others translate.	12 Travel to Bangkok In the Evening	13

Appendix M
Complete Survey Results
For Moh Seri

MohSeri

PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	Smoke1	Smoke2	Smoke3	Smoke4	Smoke5	Aphlm5	Aphlm6	Aphlm7
9001	2/5/2543	Moh Seri	Ruang	3	1/1/2479	2	8		1	25	0		1	0		
9004	2/5/2543	Moh Seri	Theep	4	3/11/2504	1	6		0					0		
9005	2/5/2543	Moh Seri	Ning	4	11/4/2507	2	8		0					0		
9006	2/5/2543	Moh Seri	Tip	4	12/23/2488	2	9		1	15	0		1	0		
9011	2/5/2543	Moh Seri	Lemai	2	12/8/2507	1	9		0					0		
9012	2/6/2543	Moh Seri	Tip	4	12/6/2506	2	9		0					0		
9015	2/9/2543	Moh Seri	Rung	5	5/6/2519	2	8		0	0	0	0	0	0		
9016	2/9/2543	Moh Seri	Olay	2	5/12/2515	1	8		0					0		
9017	2/5/2543	Moh Seri	O	3	11/16/2509	2	8		0					0		
9018	2/5/2543	Moh Seri	O	2	4/3/2492	2	10		1	12	0		2	1	12	1
9021	2/6/2543	Moh Seri	Tip	3	10/5/2507	2	9		0					0		
9025	2/5/2543	Moh Seri	Lamai	3	1/1/2466	2	9		0					0		
9028	2/9/2543	Moh Seri	Rung	1	1/1/2478	1	8		0	0	0	0	0	1	3	1
9030	2/5/2543	Moh Seri	Re	3	1/1/2478	2	9		2	14	1	10	1	0		
9031	2/5/2543	Moh Seri	Nok	4	4/26/2491	2	9		1	15	1	12	1	0		
9032	2/7/2543	Moh Seri	Ning	4	4/20/2502	1	10		1	13	0		4	0		
9033	2/6/2543	Moh Seri	Ning	6	8/10/2497	2	8		1	32	0		1	0		
9034	2/6/2543	Moh Seri	Ning	3	4/29/2507	2	8		0					0		
9035	2/6/2543	Moh Seri	Ning	3	2/1/2490	2	8		2	20	1	3	2	0		
9036	2/5/2543	Moh Seri	Ning	6	9/6/2508	2	8		0					0		
9043	2/5/2543	Moh Seri	Re	3	6/15/2505	2	9		0					0		
9045	2/6/2543	Moh Seri	Ning	2	5/2/2518	1	8		1	17	0		1	0		
9046	2/6/2543	Moh Seri	Teep	7	2/10/2502	2	9		0					0		
9047	2/6/2543	Moh Seri	Tip	4	7/10/2493	1	9		1	18	0		4	0		
9049	2/6/2543	Moh Seri	Olay	2	1/1/2498	2	8		0					0		
9050	2/6/2543	Moh Seri	Rumy	6	9/20/2497	2	7		0					0		
9053	2/9/2543	Moh Seri	Palakorn	4	6/21/2506	1	8		0					0		
9054	2/9/2543	Moh Seri	Rung	2	10/2/2457	1	8		0	0	0	0	0	0		
9056	2/6/2543	Moh Seri	Olay	3	1/1/2480	2	8		1	30	1	1	1	1		1
9059	2/6/2543	Moh Seri	Ole	1	1/1/2469	1	6		1	38	1	2	1	0		
9060	2/6/2543	Moh Seri	Rumy	4	10/12/2505	2	8		0					0		
9061	2/6/2543	Moh Seri	Rumy	5	7/27/2511	2	8		0					0		
9062	2/6/2543	Moh Seri	Olay	3	4/1/2468	1	8		0					0		
9063	2/6/2543	Moh Seri	O	2	5/24/2483	2	8		0					0		
9067	2/6/2543	Moh Seri	Mai	2	5/1/2501	2	9		0					0		
9068	2/6/2543	Moh Seri	Lamai	4	8/15/2491	2	9		0					0		
9069	2/6/2543	Moh Seri	O	5	7/28/2510	2	9		0					0		
9070	2/6/2543	Moh Seri	O	5	2/6/2512	2	9		0					0		
9071	2/6/2543	Moh Seri	Mai	3	5/4/2492	1	9		0					0		
9072	2/6/2543	Moh Seri	Ray	4	1/1/2479	1	9		1	22	0		2	0		
9073	2/6/2543	Moh Seri	Ray	3	1/1/2485	2	9		2	12	1	17	1	1	3	0
9074	2/6/2543	Moh Seri	Mai	4	1/1/2500	1	9		1	10	0		4	0		
9076	2/6/2543	Moh Seri	O	5	9/8/2494	2	10		1	25	0		1	0		
9077	2/6/2543	Moh Seri	O	2	1/1/2477	1	10		1	11	1	6	4	0		
9078	2/6/2543	Moh Seri	Ray	1	1/1/2468	1	8		1	10	0		1	0		
9079	2/6/2543	Moh Seri	Nok	3	12/20/2477	1	9		2	18	1	24	2	0		

MohSeri

PersonID	Acphlm2	Acphlm3	Acphlm4	Achest1	Achest3	Achest4	Achest5	Abreath1	Abreath2	Year2	Abreath3	Year3	Abreath4	Year4	Abreath5	Year5	Aasth1
9001	0			0				0									0
9004	0			0				0									0
9005	0			0				0									0
9006	0			0				0									0
9011	0			0				0									0
9012	0			0				0									0
9015	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9016	0			0				0									0
9017	0			0				0									0
9018	1	12	1	0				1	1	1	1	0	0		0		1
9021	0			0				0									0
9025	0			0				0									0
9028	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9030	0			0				0									0
9031	0			0				0									0
9032	0			1	0			0									0
9033	0			0				0									0
9034	0			0				0									0
9035	0			0				0									0
9036	0			0				0									0
9043	0			0				1	1	0	0		0		0		1
9045	0			0				0									0
9046	1	9	1	0				0									0
9047	0			0				1	1	1	1	1	0		0		0
9049	0			0				0									0
9050	0			0				0									0
9053	0			0				0									0
9054	1	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9056	1		1	0				0									0
9059	0			0				0									0
9060	0			0				0									0
9061	1	1	1	0				0									0
9062	0			0				0									0
9063	0			0				0									0
9067	0			0				1	1	1	0		0		0		0
9068	0			0				0									0
9069	0			0				0									1
9070	0			0				0									0
9071	0			0				0									0
9072	0			0				0									0
9073	1	3	0	0				1	1	0	0		0		1	0	0
9074	1	2	1	0				0									0
9076	1	2	1	0				0									0
9077	1	60	1	0				0									1
9078	1		1	0				0									0
9079	0			0				0									0

PersonID	Aasth2	Aasth3	Aasth4	Aasth5	Asymp1	Asymp2	Asymp3	Asymp4	Asymp5	Asymp6	Asymp7	Asymp8	Asymp9	Asymp10	Asymp11	Asymp12	Asymp13
9001					0	1	0	0	0	0	0	0	1	0	1	0	0
9004					1	0	1	1	0	0	0	0	0	0	0	0	0
9005					0	0	0	0	0	0	0	0	1	0	1	0	0
9006					1	1	1	1	0	0	1	1	0	0	0	0	0
9011					0	0	0	0	0	0	0	0	0	1	1	0	0
9012					1	1	1	0	1	1	1	1	1	1	1	0	0
9015	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	0	0
9016					1	0	0	0	0	0	0	0	1	1	1	0	0
9017					0	0	0	1	1	1	1	0	0	0	0	0	0
9018	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	1	0
9021					0	0	1	0	0	0	0	0	0	0	1	0	0
9025					0	0	0	0	0	0	0	0	0	0	0	0	0
9028	1	3	2	0	1	1	1	1	0	0	1	1	1	0	0	1	0
9030					0	0	0	1	1	0	0	0	1	0	1	0	0
9031					1	1	1	1	0	1	1	1	1	1	1	0	0
9032					1	1	1	1	0	0	0	0	0	1	1	0	0
9033					1	1	0	0	0	0	0	0	1	1	1	0	0
9034					1	1	1	1	1	1	0	1	0	0	1	0	0
9035					1	0	0	1	1	1	1	1	0	0	1	0	0
9036					1	0	0	1	1	1	0	0	0	0	0	0	0
9043	1	1	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0
9045					1	1	0	0	0	0	0	0	0	1	1	0	0
9046					0	0	0	1	0	0	0	0	0	0	0	0	0
9047					1	1	1	1	1	1	0	0	0	0	1	0	0
9049					1	0	0	1	0	0	0	0	0	0	1	0	0
9050					0	0	0	0	0	0	1	0	0	0	0	0	0
9053					1	1	0	0	0	1	0	1	0	1	1	0	0
9054	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0
9056					1	1	1	1	0	1	0	0	0	0	1	0	0
9059					1	1	1	1	0	0	0	0	0	0	1	0	0
9060					1	0	0	0	0	1	0	1	1	0	1	0	0
9061					0	0	0	0	0	0	0	0	0	0	0	0	0
9062					0	0	0	0	0	0	0	0	1	0	1	0	0
9063					1	1	1	1	1	0	0	0	0	0	1	0	0
9067					0	0	0	0	0	0	0	0	0	0	0	0	0
9068					1	0	0	0	0	1	0	1	1	0	0	0	0
9069	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0
9070					1	0	0	1	0	0	1	1	0	0	1	0	0
9071					0	0	0	0	0	0	0	0	0	0	0	0	0
9072					0	0	0	0	0	0	0	0	0	0	0	0	0
9073					1	1	1	1	1	1	1	1	1	0	0	0	0
9074					1	1	1	1	0	0	0	0	1	0	0	0	0
9076					0	0	0	0	0	0	0	0	0	0	1	0	0
9077	1	3	0	0	0	1	1	0	1	1	0	0	0	0	0	1	0
9078					1	1	1	1	0	1	1	1	0	0	0	0	0
9079					0	0	0	1	1	1	0	0	1	0	0	0	0

MohSeri

PersonID	Asymp14	AccsToHealthC	HlthCareClos	QualityHealthC	EGATFair	Aoccup	Asalary	Asalary1	Aedu	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo
9001	0	1	0	2	0	3	36000	9000	2	0	6	0	1	1	0
9004	0	1	0	1	1	9	19200	0	6	1	9	4000	1	1	1
9005	0	1	1	3	0	7	19200	0	4	0	3	0	1	1	0
9006	0	1	0	1	1	2	7000	0	3	1	7	0	1	1	1
9011	0	1	1	3	0	8	60000	0	5	1	8	0	1	1	1
9012	0	1	0	3	0	3	8000	0	2	0	3	0	1	1	0
9015	0	1	0	1	1	2	24000	0	3	0	7	0	1	1	0
9016	0	1	0	2	0	10	36000	0	4	0	2	500	1	1	1
9017	0	1	0	1	1	11	20000	1000	3	1	3	1000	1	1	1
9018	0	1	1	2	0	7	5000	1000	3	0	3	50	0	0	0
9021	0	0	0	3	0	2	80400	0	4	1	7	2000	1	1	0
9025	0	1	0	1	0	2	3600	0	2	0	3	0	1	0	0
9028	1	1	1	2	0	2	1500	0	3	0	3	0	0	1	0
9030	0	1	1	2	0	3	5000	0	3	0	3	0	1	1	1
9031	0	0	0	3	1	3	60000	0	3	0	3	0	1	1	0
9032	0	1	0	2	1	9	290400	0	5	1	9	0	1	1	0
9033	0	1	1	2	0	7	36000	7000	2	0	3	0	1	0	1
9034	0	1	1	2	0	7	12000	0	3	0	3	0	1	0	0
9035	0	1	0	2	0	7	7200	0	2	0	3	0	1	1	1
9036	0	1	1	1	1	2	46800	0	3	0	3	0	1	1	1
9043	1	0	3	0	0	3	7500	0	7	1	7	0	1	0	0
9045	0	1	1	2	0	8	2300	0	4	0	2	0	1	0	0
9046	0	1	1	2	0	3	108000	0	4	0	3	0	1	1	1
9047	0	0	0	1	1	7	42000	0	3	2	7	0	1	1	0
9049	0	1	0	2	0	2	60000	0	3	0	6	0	1	0	1
9050	0	1	1	2	0	2	400000	0	3	0	8	0	1	1	0
9053	0	1	0	2	1	9	144000	0	4	1	9	0	1	1	0
9054	0	1	0	2	0	2	12000	0	2	0	3	0	1	1	0
9056	0	1	0	2	0	6	6000	0	3	0	3	0	1	1	0
9059	0	1	1	3	0	2	12000	0	4	0	3	0	0	1	0
9060	0	1	0	2	0	3	200000	0	3	1	3	0	1	1	1
9061	0	1	0	2	0	2	10000	0	5	0	6	1500	1	1	1
9062	0	1	0	1	1	7	3600	0	2	0	3	0	0	0	0
9063	0	1	1	2	0	3	12000	1000	2	0	3	0	1	0	0
9067	0	1	1	2	0	6	0	0	3	0	6	0	1	1	0
9068	0	1	0	3	0	6	10000	0	3	0	3	0	1	1	1
9069	0	1	0	2	0	7	84000	0	2	0	8	0	1	1	1
9070	0	1	0	2	0	3	0	3000	3	0	3	200	1	1	1
9071	0	0	1	3	0	7	8000	3000	3	1	7	0	1	0	0
9072	0	1	1	3	1	3	3000	0	2	0	3	0	1	1	1
9073	1	1	0	3	0	2	2000	0	3	0	3	0	1	0	1
9074	0	1	1	2	0	2	2000	0	2	0	7	0	1	1	0
9076	0	1	1	1	0	3	10000	1500	2	0	3	500	1	1	1
9077	0	1	0	1	0	7	5000	8000	2	1	3	100	1	0	0
9078	1	1	1	2	0	2	1000	0	3	0	3	0	1	0	0
9079	0	1	0	2	0	7	6000	0	3	0	3	0	1	1	0

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PersonID	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow
9001	1	1	0	0.3	3	3	1	2	2	3	2	1	1	3
9004	1	1	1	0.5	3	1	1	1	1	2	1	2	1	1
9005	1	0	0	0.38	1	3	1	3	3	1	2	1	1	3
9006	1	1	0	0.14	2	1	3	3	2	3	2	2	3	4
9011	1	1	1	5	2	3	2	3	2	2	2	2	1	1
9012	1	1	0	0.5	3	2	1	1	2	3	2	2	1	3
9015	1	1	0	0.25	3	1	2	1	1	2	2	2	1	4
9016	1	1	1	0.5	1	2	2	3	2	1	2	2	1	1
9017	1	1	0	3.75	1	1	2	3	3	1	2	2	1	1
9018	1	1	0	24.5	1	2	2	1	2	1	2	2	1	4
9021	1	1	1	0.5	1	1	2	1	2	2	2	2	1	1
9025	0	0	0	0.4725	2	1	3	3	2	3	1	3	1	3
9028	1	1	0	0.5	3	2	2	2	2	2	2	2	1	4
9030	1	1	1	0.75	2	3	2	3	1	3	2	1	1	1
9031	1	1	0	0.25	2	2	1	3	2	3	2	2	1	4
9032	1	1	1	0.37	1	3	3	3	2	3	2	2	1	4
9033	1	1	0	0.5	1	3	2	1	2	3	1	2	1	1
9034	1	1	0	0.25	3	3	1	3	2	1	2	2	1	4
9035	1	1	0	0.25	3	1	1	3	3	3	1	2	1	1
9036	1	1	1	1.5	1	1	2	3	3	3	1	2	3	4
9043	1	0	0	0.905	3	2	1	2	2	2	2	2	3	4
9045	0	1	0	0.25	1	1	1	3	3	3	3	2	1	4
9046	1	1	1	0.5	1	1	3	1	2	2	2	2	1	1
9047	1	1	0	0.175	1	1	3	1	2	3	2	2	1	1
9049	1	1	1	0.5	2	1	2	1	1	1	2	3	1	4
9050	1	1	0	0.15	3	3	2	3	2	2	2	2	1	3
9053	1	1	1	0.5	2	2	2	3	2	2	2	1	1	4
9054	1	0	0	0.5	2	2	1	2	3	2	2	2	2	4
9056	1	0	1	1.25	3	3	2	1	2	1	2	2	1	4
9059	0	1	1	11.75	1	3	2	3	3	3	2	2	3	4
9060	1	1	1	1.75	2	3	1	1	2	2	2	2	1	1
9061	1	1	1	0.59	3	1	2	1	1	1	2	2	1	4
9062	0	0	0	0.5	1	1	1	1	1	1	1	1	1	1
9063	1	0	0	0.475	2	2	2	3	2	2	2	2	1	1
9067	1	0	0		3	2	2	3	2	2	2	2	3	4
9068	1	1	0	0.5	3	3	3	1	1	1	2	2	1	3
9069	1	1	0	2	2	2	3	3	2	3	2	3	1	4
9070	1	1	0	10.5	1	2	2	3	2	1	2	2	3	4
9071	1	0	0	0.48	1	2	2	3	1	1	2	2	1	1
9072	1	1	0	1	1	1	3	3	2	1	2	2	1	1
9073	1	1	1	0.25	1	2	3	3	2	1	2	2	2	4
9074	1	1	0	0.25	1	1	3	3	1	1	2	2	1	4
9076	1	1	1	0.5	3	3	3	2	2	1	2	2	1	1
9077	1	1	0	0.5	1	1	2	2	1	1	1	2	3	3
9078	1	0	0	0.25	1	1	1	3	2	2	2	1	3	4
9079	1	0	1	0.41	3	1	2	1	2	2	2	2	3	4

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PersonID	MorLesLand	CloseToJob	HouseBtrWrs	LivWithPpl	LivNearNbrs	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor
9001	2	0	3	1	0	1	1	1	0	0	0	1
9004	2	0	1	1	0	1	1	1	1	1	1	1
9005	2	0	1	1	1	1	0	0	0	0	0	1
9006	2	0	1	0	0	1	1	0	0	0	0	1
9011	2	0	1	1	0	0	0	0	0	0	1	1
9012	3	0	1	1	0	1	1	0	0	0	0	1
9015	2	0	3	1	0	1	1	1	0	1	1	1
9016	1	0	1	0	0	0	1	1	0	0	0	1
9017	2	1	1	1	1	1	1	0	1	1	1	1
9018	2	0	1	1	1	1	1	0	1	1	0	1
9021	2	0	2	0	0	0	1	0	0	0	0	1
9025	1	1	1	1	0	0	1	1	1	1	1	1
9028	2	0	2	0	0	0	0	1	0	0	0	1
9030	3	0	3	1	0	0	0	0	0	0	0	1
9031	2	0	3	1	0	1	0	1	0	1	0	1
9032	1	0	2	1	1	0	0	0	0	0	0	0
9033	2	1	3	1	1	0	1	0	1	0	0	1
9034	2	0	1	1	1	0	0	0	0	0	0	1
9035	1	0	1	1	1	0	0	0	0	0	0	1
9036	2	1	1	1	1	1	0	0	0	0	0	1
9043	2	0	3	1	0	0	0	0	0	0	0	0
9045	2	0	1	1	1	0	0	0	0	0	0	1
9046	2	0	1	1	0	1	1	1	0	0	0	1
9047	3	0	1	1	1	1	1	0	0	0	0	1
9049	1	0	1	0	0	0	0	0	0	0	0	1
9050	2	0	3	1	0	1	1	1	0	1	0	1
9053	2	0	1	0	0	0	1	1	0	0	0	1
9054	2	0	1	1	1	0	0	1	0	0	0	1
9056	2	0	1	0	0	0	1	1	1	1	0	1
9059	2	0	3	0	1	0	1	1	1	1	0	1
9060	1	1	1	1	1	1	1	1	1	1	1	1
9061	2	0	3	1	1	0	1	1	0	0	0	1
9062	1	1	1	0	0	0	1	1	1	0	0	1
9063	2	0	1	1	0	0	0	0	0	1	1	1
9067	2	0	1	1	1	0	0	1	1	1	1	1
9068	2	0	3	1	0	1	1	1	1	1	1	1
9069	2	0	3	1	1	0	1	1	1	1	1	1
9070	2	0	1	1	1	1	1	0	1	1	1	1
9071	2	0	1	1	0	1	1	1	1	1	1	1
9072	2	0	1	1	1	1	0	1	0	0	0	1
9073	2	1	3	0	0	1	1	1	1	0	0	1
9074	2	0	2	1	1	0	0	1	0	1	0	1
9076	2	0	1	1	0	1	0	0	0	0	0	1
9077	2	0	2	1	1	1	1	0	1	1	0	1
9078	3	0	1	0	1	0	0	1	0	0	0	1
9079	2	0	2	1	1	1	1	1	1	1	0	1

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PersonID	Construction	CommGroups	VisitTemple	ComTempleAct	CelebrateHldys	CommAct	Socialize	GovtFinSupprt	GovtTkConcrns	Happier	PreferStay
9001	1	1	5	15	1	0	3	0	0	0	1
9004	2	1	5	13	1	3	3	0	0	1	1
9005	1	0	4	2	3	2	1	0	1	0	1
9006	2	1	5	10	3	10	3	0	1	1	1
9011	3	1	5	6	1	5	2	0	1	0	0
9012	1	1	5	12	1	12	3	0	0	0	0
9015	1	0	5	10	3	6	3	0	0	0	1
9016	2	1	5	10	3	3	3	0	0	0	1
9017	1	1	4	10	1	5	3	0	1	1	1
9018	3	1	5	3	1	2	3	1	0	0	1
9021	1	1	5	5	0	5	3	0	0	0	0
9025	1	1	2	5	0	0	2	0	0	0	1
9028	1	1	5	7	0	4	3	0	0	0	1
9030	0	1	5	2	0	2	1	0	0	1	0
9031	0	1	5	10	0	2	2	0	1	0	1
9032	0	0	0	4	1	4	2	0	1	0	1
9033	3	1	3	10	3	10	1	0	0	0	1
9034	3	1	5	6	2	5	3	0	0	0	1
9035	3	1	5	5	3	5	2	0	1	0	1
9036	0	1	5	3	2	3	2	0	1	1	1
9043	0	0	0	0	0	0	1	1	0	0	1
9045	0	0	5	0	1	0	1	1	0	1	0
9046	1	1	5	10	3	10	3	0	1	0	1
9047	1	1	5	6	0	6	2	0	1	0	1
9049	0	1	0	0	0	0	2	0	0	1	1
9050	3	1	5	4	1	0	3	0	0	0	1
9053	1	1	5	5	1	5	3	0	0	0	1
9054	1	1	2	10	0	5	3	0	0	0	1
9056	1	1	5	48	3	10	3	0	0	0	1
9059	2	1	5	3	1	3	3	0	0	0	1
9060	1	1	5	3	1	4	2	1	1	1	0
9061	1	1	5	10	1	5	3	0	0	0	1
9062	1	1	5	2	1	3	1	1	1	1	1
9063	1	1	2	5	0	2	2	0	0	0	1
9067	1	1	5	2	0	0	1	0	1	0	1
9068	1	1	2	4	3	4	1	0	1	0	1
9069	3	1	2	10	3	0	3	0	0	1	1
9070	1	1	2	4	1	4	3	0	0	0	1
9071	3	1	2	10	3	10	3	0	0	1	0
9072	0	1	5	2	1	0	2	0	0	0	0
9073	0	1	0	2	0	5	3	1	1	0	0
9074	1	1	5	5	0	0	3	0	1	0	1
9076	0	1	5	4	0	10	1	0	1	1	1
9077	3	1	2	10	3	1	3	1	0	1	1
9078	0	1	5	2	0	0	3	0	0	1	1
9079	3	1	2	48	0	2	3	0	0	1	1

PersonID	EGATSupport	EGATConcerns	EGATParticip	EGATOpinion
9001	0	0	1	0
9004			1	1
9005	0	0	0	2
9006	1	1	1	2
9011	0	0	0	2
9012	0	0	0	0
9015	0	0	1	2
9016	0	0	0	0
9017	0	1	1	1
9018	0	0	0	0
9021	0	0	0	0
9025	0	0	0	0
9028	0	0	0	0
9030	0	0	1	2
9031	1	0	1	1
9032	0	0	1	1
9033	0	0	0	0
9034	0	0	1	2
9035	0	0	0	2
9036	0	0	1	1
9043	1	0	0	2
9045	0	0	0	2
9046	0	0	1	2
9047	0	0	0	2
9049	0	0	1	0
9050	0	0	0	0
9053	0	1	1	1
9054	1	0	0	0
9056	0	0	1	0
9059	0	1	1	0
9060	1	1	1	2
9061	1	0	0	0
9062	1	1	1	1
9063	0	0	0	0
9067	0	0	0	2
9068	0	0	1	1
9069	0	0	1	1
9070	0	0	1	0
9071	0	0	0	0
9072	1	0	1	2
9073	1	1	1	0
9074	0	1	1	0
9076	0	1	1	1
9077	0	1	1	0
9078	0	0	0	0
9079	0	0	0	0

MohSeri

PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	Smoke1	Smoke2	Smoke3	Smoke4	Smoke5	Aphlm5	Aphlm6	Aphlm7
9080	2/7/2543	Moh Seri	Tip	6	7/3/2484	1	9		0	13	0		2	0		
9081	2/7/2543	Moh Seri	Lemai	4	12/13/2491	1	9		1	15	0		1	0		
9082	2/6/2543	Moh Seri	Ray	2	1/1/2475	1	10		2	15	1	7	1	0		
9083	2/6/2543	Moh Seri	Nok	1	3/11/2467	1	10		2	18	1	60	3	0		
9084	2/6/2543	Moh Seri	Nok	6	7/7/2505	2	10		0					0		
9090	2/10/2543	Moh Seri	Rung	4	7/17/2506	2	8		1	28	0	1	0	0		
9091	2/10/2543	Moh Seri	Olay	4	12/13/2504	1	8		2	13	0	0	1	0		
9094	2/11/2543	Moh Seri	Olay	5	7/31/2512	1	8		1	15	0		1	0		
9096	2/11/2543	Moh Seri	Olay	3	1/1/2486	1	7		1	15	0		1	0		
9097	2/11/2543	Moh Seri	Olay	3	2/5/2498	2	8		1	12	0		1	0		
9098	2/11/2543	Moh Seri	Olay	4	3/4/2504	1	8		1	21	1	2	1	0		
9099	2/11/2543	Moh Seri	Rung	5	8/20/2516	2	8		0					0		
9100	2/11/2543	Moh Seri	Olay	3	2/6/2516	1	8		1	12	1	12	1	0		
9102	2/11/2543	Moh Seri	Olay	1	4/7/2475	2	8		0					0		
9103	2/10/2543	Moh Seri	Olay	5	8/12/2486	2	8		1	25	0	0	1	0		
9104	2/10/2543	Moh Seri	Rung	3	1/1/2483	2	8		0	0	0	0	0	1	2	0
9105	2/10/2543	Moh Seri	Lamai	7	1/1/2483	1	9		1	12	0	0	3	0		
9107	2/10/2543	Moh Seri	Tip	5	10/11/2493	2	9		1	15	0	0	1	0		
9108	2/10/2543	Moh Seri	Ning	4	2/15/2497	2	8		1	44	1	2	1	0		
9109	2/10/2543	Moh Seri	Tip	1	1/1/2488	2	9		1	16	0	0	1	0		
9110	2/10/2543	Moh Seri	Ning	7	1/1/2475	1	8		0	0	0	0	0	0		
9111	2/11/2543	Moh Seri	Tip	3	1/4/2543	2	9		0					0		
9112	2/11/2543	Moh Seri	Tip	4	10/15/2505	2	9		2	28	1	9	1	0		
9113	2/11/2543	Moh Seri	Olay	5	9/1/2499	2	8		0					0		
9114	2/11/2543	Moh Seri	Tip	5	9/8/2485	1	9		1	12	0		1	0		
9115	2/11/2543	Moh Seri	Tip	2	4/20/2489	1	9		1	15	0		4	0		
9116	2/11/2543	Moh Seri	Tip	2	1/1/2489	1	9		1	17	0		4	0		
9117	2/10/2543	Moh Seri	Pingmai	2	1/1/2484	1	9		1	12	0	0	1	0		
9118	2/10/2543	Moh Seri	Pingmail	5	4/10/2496	2	8		2	15	1	4	1	0		
9119	2/11/2543	Moh Seri	Nok	2	9/9/2517	1	4		1	20	1	2	1	0		
9127	2/10/2543	Moh Seri	Nok	2	5/2/2520	1	9		1	17	0	0	2	0		
9128	2/11/2543	Moh Seri	Ning	2	2/4/2508	1	8		0					0		
9129	2/11/2543	Moh Seri	Ning	4	6/26/2512	2	5		0	0	0	0	0	0		
9130	2/11/2543	Moh Seri	Ning	4	7/5/2509	2	5		0	0	0	0	0	0		
9131	2/11/2543	Moh Seri	Ning	2	1/1/2486	2	10		1	15	1	3	1	1		1
9132	2/11/2543	Moh Seri	Ning	4	3/16/2502	2	8		0					0		
9134	2/11/2543	Moh Seri	Nok	2	3/1/2466	1	8		2	20	1	4	1	0		
9135	2/11/2543	Moh Seri	Rung	5	7/25/2502	1	8		0					0		
9136	2/11/2543	Moh Seri	Rung	5	1/1/2468	1	8		0					0		
9137	2/11/2543	Moh Seri	Rung	4	9/9/2496	1	8		1	12	0		3	0		
9139	2/11/2543	Moh Seri	Rung	2	12/2/2497	1	8		2	15	1	5	6	0		
9140	2/11/2543	Moh Seri	Nok	5	4/10/2495	1	10		1	16	0		1	0		
9141	2/10/2543	Moh Seri	Ray	4	12/1/2493	2	9		0					0		
9142	2/10/2543	Moh Seri	Ray	1	1/1/2467	2	9		1	12	0	0	1	0		
9144	2/10/2543	Moh Seri	Ray	4	1/31/2506	1	9		1	19	1	2	2	0		
9145	2/10/2543	Moh Seri	Nok	2	1/1/2481	2	9		1	50	0	0	1	0		

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PersonID	Acphlm2	Acphlm3	Acphlm4	Achest1	Achest3	Achest4	Achest5	Abreath1	Abreath2	Year2	Abreath3	Year3	Abreath4	Year4	Abreath5	Year5	Aasth1
9080	0			0				0									0
9081	0			0				0									0
9082	0			0				0									0
9083	0			0				1	0		0		0		0		0
9084	0			0				0									0
9090	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9091	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9094	0			0				0									0
9096	0			0				0									0
9097	0			0				0									0
9098	0			0				0									0
9099	0			0				0									0
9100	0			0				0									0
9102	0			0				0									0
9103	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9104	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9105	1	1	1	0				1	1	1	1	1	0		0		0
9107	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9108	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9109	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9110	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9111	0			0				0									0
9112	0			0				0									0
9113	0			0				0									0
9114	0			0				0									1
9115	0			0				0									0
9116	0			0				0									0
9117	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9118	1	12	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1
9119	0			0				0									0
9127	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9128	0			0				0									0
9129	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9130	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9131	1		1	0				1	0		1	0	0		0		0
9132	1	12	0	0				0									1
9134	0			0				0									0
9135	0			0				0									0
9136	0			0				0									0
9137	0			0				0									0
9139	0			0				0									1
9140	0			0				0									0
9141	0			0	0	0	0	1	0	0	0	0	0	0	0	0	0
9142	0			0	0	0	0	0	0	0	0	0	0	0	0	0	1
9144	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9145	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0

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PersonID	Aasth2	Aasth3	Aasth4	Aasth5	Asymp1	Asymp2	Asymp3	Asymp4	Asymp5	Asymp6	Asymp7	Asymp8	Asymp9	Asymp10	Asymp11	Asymp12	Asymp13
9080					0	0	0	0	0	0	0	0	0	0	0	0	0
9081					0	0	0	0	0	0	0	0	0	0	0	0	0
9082					1	1	1	0	0	0	0	0	0	0	1	0	0
9083					0	0	0	0	0	0	0	0	0	0	0	0	0
9084					1	1	0	1	1	1	1	1	0	1	1	1	0
9090	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0
9091	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9094					0	1	0	1	0	0	0	0	0	0	0	0	0
9096					1	1	1	1	1	1	0	0	0	0	0	0	0
9097					1	1	1	1	0	1	0	1	0	0	0	0	0
9098					0	0	0	0	1	0	0	0	0	0	0	0	0
9099					0	0	0	0	0	0	0	0	0	0	0	0	0
9100					1	0	1	1	0	1	0	1	0	1	1	0	0
9102					1	1	1	1	1	1	0	0	0	0	1	0	0
9103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9104	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1	0	0
9105					0	0	0	0	0	0	0	0	0	0	0	0	0
9107	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
9108	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	0	0
9109	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0
9110	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
9111					0	0	0	0	0	1	0	0	0	0	1	0	0
9112					1	1	1	0	0	1	1	1	0	0	0	0	0
9113					0	0	0	1	1	1	1	1	0	1	1	0	0
9114	1	2	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0
9115					1	1	1	1	1	1	1	1	0	1	1	0	0
9116					1	1	1	1	1	1	1	1	0	0	0	0	0
9117	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0
9118	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1
9119	0				0	0	0	0	1	1	0	0	0	0	0	0	0
9127	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0
9128					1	1	1	1	1	1	1	1	1	0	0	0	0
9129	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0
9130	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0
9131					1	1	1	1	1	1	1	0	1	0	1	0	0
9132	0				0	1	1	0	1	1	1	1	1	0	1	0	0
9134					0	0	0	1	0	0	0	0	0	0	0	0	0
9135					0	1	0	0	0	1	0	0	1	0	1	0	0
9136					1	1	0	1	0	0	0	0	1	0	0	0	0
9137					0	1	1	0	0	0	0	0	0	0	1	0	0
9139	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
9140					1	0	0	0	0	1	1	0	0	0	0	0	0
9141	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	0	0
9142	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0
9144	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
9145	0	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0

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PersonID	Asymp14	AccsToHealthC	HlthCareClos	QualityHealthC	EGATFair	Aoccup	Asalary	Asalary1	Aedu	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo
9080	0	1	0	3	0	9	375480	0	3	0	9	10000	1	1	1
9081	0	1	1	1	0	8	312000	0	3	0	8	0	1	0	0
9082	0	1	0	3	0	7	10000	0	2	0	7	0	1	1	0
9083	0	0	1	2	0	7	4500	0	2	0	3	0	1	0	0
9084	0	1	0	2	0	2	60000	0	4	1	2	0	1	0	1
9090	0	1	0	2	0	7	2000	0	3	0	3	0	1	1	0
9091	0	1	1	1	0	8	48000	0	3	0	3	0	1	1	1
9094	0	1	1	3	1	7	60000	0	3	0	8	0	0	0	0
9096	0	1	0	1	0	2	6000	0	3	0	3	0	1	1	0
9097	0	1	0	1	1	7	36000	0	3	0	3	0	1	1	1
9098	0	1	1	3	1	7	12000	0	3	0	3	0	1	1	0
9099	0	1	0	3	1	7	13000	0	3	0	3	200	1	1	0
9100	0	1	0	3	0	8	48000	0	4	1	7	0	1	0	0
9102	0	1	1	3	0	2	12000	0	3	0	3	0	1	1	0
9103	0	1	1	1	0	2	12000	0	3	0	6	0	1	0	1
9104	0	1	1	2	0	1	10000	0	2	0	6	0	1	0	0
9105	0	1	1	3	0	3	2000	0	2	0	3	0	1	0	1
9107	0	1	0	2	0	7	3000	0	2	0	3	0	1	0	1
9108	0	1	0	3	1	7	68400	0	2	1	2	1000	1	1	1
9109	0	1	1	1	0	2	0	0	2	0	3	0	0	0	0
9110	0	1	0	1	1	2	48000	0	2	0	3	0	1	1	0
9111	0	1	1	3	0	6	36000	0	3	0	3	0	1	1	0
9112	0	1	0	1	0	2	1000	0	2	0	2	0	0	0	0
9113	0	1	0	1	1	3	12000	0	3	0	3	0	1	1	0
9114	0	1	0	1	0	2	6000	0	2	0	3	0	1	0	0
9115	0	1	1	1	0	3	1300	0	2	0	3	0	1	0	0
9116	0	0	1	1	1	3	1000	0	2	0	3	0	1	0	0
9117	0	1	0	3	1	6	2000	0	2	0	3	0	0	0	0
9118	0	1	0	1	0	3	36000	10000	3	0	3	100	1	1	0
9119	0	1	0	3	0	7	36000	0	4	0	7	0	1	1	0
9127	0	1	0	3	0	2	103000	0	8	1	1	0	1	1	1
9128	0	1	0	3	0	7	8000	0	3	0	3	0	1	0	0
9129	0	1	0	2	0	7	15000	0	3	0	7	0	1	0	1
9130	0	1	0	3	1	7	76800	0	3	1	3	0	1	0	1
9131	0	1	1	1	0	3	3600	0	2	0	3	0	1	0	0
9132	0	1	0	1	1	2	36000	0	2	0	3	0	1	1	0
9134	0	1	1	3	0	2	0	0	4	0	3	0	1	0	0
9135	0	1	0	3	0	7	84000	0	3	0	7	0	1	1	1
9136	0	1	1	2	0	2	15000	0	3	0	3	0	1	1	1
9137	0	1	0	1	0	7	35000	0	3	0	7	0	1	1	0
9139	0	1	0	1	0	7	5000	0	3	0	7	0	0	1	0
9140	0	1	0	1	0	7	10000	0	3	0	7	0	1	1	0
9141	0	1	1	3	0	2	240000	0	3	0	7	0	1	1	0
9142	0	1	1	2	0	2	8400	0	2	0	3	0	1	0	0
9144	0	1	0	3	0	2	0	0	3	0	8	0	1	0	0
9145	0	1	1	2	0	2	0	0	2	0	7	0	0	1	0

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PersonID	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow
9080	1	1	1	0.5	1	1	3	1	2	2	2	2	1	1
9081	1	1	1	3.75	3	3	3	3	1	3	2	3	1	3
9082	1	0	0	0.4	1	1	3	3	2	3	2	1	1	1
9083	1	1	0	0.42	2	1	1	3	2	2	2	2	1	4
9084	1	1	0	0.42	1	1	2	2	2	2	2	2	1	4
9090	0	1	0	0.09	1	2	2	2	2	2	2	2	1	4
9091	1	1	0	0.25	1	1	2	3	2	2	2	2	3	4
9094	1	0	0	0.1925	1	3	1	3	1	2	2	2	3	4
9096	1	0	0	6.5	1	1	3	3	3	3	2	2	1	4
9097	1	0	0	2.5	2	2	3	3	2	2	2	2	1	4
9098	0	1	0	0.185	3	3	1	3	1	2	2	2	3	4
9099	1	1	0	0.75	1	2	2	1	1	2	2	2	1	1
9100	1	1	0	0.25	3	1	3	3	1	2	2	2	1	4
9102	1	0	0	0.6	1	1	3	3	2	2	2	2	1	4
9103	1	1	1	1	3	3	3	3	1	3	2	2	1	1
9104	1	1	1	0.25	1	2	2	3	1	2	2	2	1	4
9105	1	1	0	0.5	3	2	1	2	2	2	2	2	2	4
9107	1	1	0	0.23	1	1	2	1	2	3	2	2	3	4
9108	1	1	0	0.17	1	1	1	3	1	2	2	1	1	3
9109	0	0	0	0.25	1	1	3	3	2	3	2	2	3	4
9110	1	1	1	0.17	1	1	1	3	2	3	3	2	3	4
9111	1	1	1	0.5	1	3	1	1	2	3	2	2	1	4
9112	0	0	0	0.25	2	2	2	2	2	2	2	2	1	4
9113	1	1	0	0.5	1	1	1	3	2	1	1	2	1	4
9114	0	0	0	0.5	1	1	3	1	3	3	2	2	1	4
9115	1	1	1	0.25	2	2	2	2	2	3	2	2	1	4
9116	0	0	0	0.5	1	1	1	2	2	3	2	2	1	4
9117	0	0	0	0.5	1	2	3	3	2	1	2	2	1	4
9118	1	1	0	0.5	1	1	3	1	3	3	3	3	1	4
9119	0	1	0	0.5	1		1	1	1	1	2	1	1	4
9127	1	1	1	0.5	2	1	1	1	3	2	2	3	1	4
9128	0	1	0	0.75	1	1	2	3	2	2	2	2	1	4
9129	1	1	0	0.25	3	3	3	3	2	2	2	2	3	4
9130	1	1	0	0.5	1	1	3	3	2	3	2	3	1	4
9131	1	0	0	0.75	2	1	2	3	2	3	2	2	2	4
9132	1	1	0	0.25	1	3	3	3	3	3	2	2	1	4
9134	1	0	0	1	1		2	1	2	2	2	2	1	4
9135	1	1	0	0.25	1	1	1	1	1	1	2	2	2	4
9136	1	0	0	0.5	1	1	2	3	1	2	2	2	3	4
9137	1	1	0	0.55	1	1	1	2	2	2	2	2	1	1
9139	0	0	0	0.125	1	1	1	2	2	2	2	2	1	1
9140	1	1	0	0.5	1	2	2		1	1	2	2	3	4
9141	1	1	1	0.5	2	3	2	3	2	2	2	2	3	1
9142	1	0	0	0.5	2	3	2	3	2	2	2	2	2	4
9144	1	1	0	0.25	2	3	2	2	2	2	2	2	1	1
9145	0	0	0	0.5	3	3	2	3	2	1	2	2	2	4

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PersonID	MorLesLand	CloseToJob	HouseBtrWrS	LivWithPpl	LivNearNbrs	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor
9080	2	0	1	1	1	0	1	0	0	0	0	1
9081	3	0	3	1	1	1	1	1	1	1	1	1
9082	2	1	3	0	1	0	0	1	0	0	0	1
9083	1	0	1	0	0	1	0	1	0	0	0	1
9084	2	1	3	1	0	0	1	1	1	1	1	1
9090	2	0	1	0	0	1	1	1	0	1	0	1
9091	2	0	1	0	0	1	1	1	1	1	0	1
9094	2	0	2	0	0	1	1	1	1	1	0	1
9096	1	0	3	1	0	1	1	1	0	0	0	1
9097	2	0	3	0	0	1	1	1	1	0	0	1
9098	2	0	2	0	0	1	1	1	1	1	0	1
9099	2	0	1	1	0	0	0	1	0	1	0	1
9100	2	0	1	0	1	0	1	1	1	0	0	1
9102	2	0	2	0	0	0	1	1	0	1	0	1
9103	2	0	1	0	1	1	1	1	1	1	0	1
9104	2	0	3	1	1	1	1	1	1	1	0	1
9105	2	0	1	1	1	1	1	1	1	0	1	1
9107	2	1	3	1	1	0	1	1	0	0	0	1
9108	3	0	1	1	1	0	0	0	0	0	0	1
9109	2	0	2	0	1	0	0	0	0	0	0	1
9110	2	0	1	1	1	0	0	0	0	0	0	1
9111	1	1	1	2	0	0	0	0	0	0	0	1
9112	2	0	1	1	0	0	1	0	0	0	0	1
9113	2	0	1	0	0	1	1	1	0	0	0	1
9114	2	0	3	1	1	0	0	0	0	0	0	1
9115	2	0	3	1	1	1	0	0	0	0	0	1
9116	1	0	1	1	1	0	1	0	0	0	0	1
9117	2	0	3	1	0	1	1	1	1	0	0	1
9118	2	0	1	0	1	1	1	1	1	1	0	1
9119	1	0	2	1	1	1	1	1	0	0	0	1
9127	2	1	2	0	1	0	1	1	0	0	0	1
9128	2	0	2	1	1	1	0	0	1	0	0	1
9129	1	0	1	1	1	0	0	0	0	0	0	1
9130	3	1	1	1	1	1	0	0	0	0	0	1
9131	2	0	1	1	1	1	0	0	0	0	0	1
9132	2	0	3	1	1	1	0	0	0	0	0	1
9134	1	0	3	1	1	0	1	0	0	0	0	1
9135	3	0	3	1	1	1	1	1	1	1	1	1
9136	2	2	1	1	0	0	0	1	0	0	0	1
9137	1	0	1	1	1	0	1	1	1	1	0	1
9139	1	0	1	1	1	0	1	1	1	0	0	1
9140	1	0	1	1	1	1	1	1	0	0	0	1
9141	2	0	1	1	0	0	0	1	0	0	0	1
9142	2	0	3	0	0	0	0	0	0	0	0	1
9144	2	0	1	0	1	1	0	1	0	0	0	1
9145	2	0	2	1	1	0	1	0	0	0	1	1

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PersonID	Construction	CommGroups	VisitTemple	ComTempleAct	CelebrateHldys	CommAct	Socialize	GovtFinSupprt	GovtTkConcrns	Happier	PreferStay
9080	1	1	5	6	2	5	3	1	1	1	2
9081	3	1	2	3	1	0	3	0	0	1	0
9082	0	1	5	2	0	4	3	0	1	0	1
9083	1	1	5	10	3	1	3	0	0	0	1
9084	1	1	5	5	0	10	3	0	1	0	1
9090	1	1	5	3	1	3	2	0	1	0	1
9091	1	1	5	10	1	0	3	0	0	0	1
9094	1	1	5	10	3	5	3	0	0	0	1
9096	1	1	5	3	2	3	3	1	1	1	0
9097	3	1	5	10	3	3	3	1	1	0	1
9098	1	1	5	8	3	6	3	0	0	0	1
9099	1	1	5	10	2	0	3	0	1	0	1
9100	1	1	2	7	1	3	3	0	0	0	1
9102	3	1	1	10	3	2	1	1	1	0	1
9103	3	1	5	15	3	0	3	0	0	0	1
9104	1	1	5	6	1	5	2	0	0	0	0
9105	3	1	5	2	0	2	3	0	0	0	0
9107	1	1	5	10	1	10	3	0	0	1	1
9108	1	1	4	15	2	4	3	0	1	1	0
9109	1	0	4	10	1	10	3	0	0	0	1
9110	1	0	2	3	1	2	3	0	0	0	1
9111	3	1	2	20	3	10	2	0	0	1	1
9112	1	1	5	6	1	5	3	0	0	0	1
9113	1	1	3	3	3	3	3	0	0	1	0
9114	3	1	2	20	3	20	3	0	0	0	1
9115	3	1	5	10	3	10	3	0	0	0	1
9116	3	1	2	10	0	5	3	0	0	1	1
9117	1	1	2	2	1	2	2	1	0	1	1
9118	3	1	2	3	3	10	2	0	1	1	1
9119	0	1	4	2	0	1	2	0	1	0	1
9127	1	1	0	1	1	2	2	0	1	1	0
9128	2	1	5	6	1	3	2	0	0	0	1
9129	0	0	5	5	3	0	1	1	0	0	1
9130	1	1	5	6	2	0	1	0	0	2	1
9131	0	0	2	5	1	6	3	1	1	2	1
9132	3	0	2	3	3	5	2	1	0	0	1
9134	0	1	5	5	1	5	2	0	0	0	1
9135	1	1	5	7	0	10	3	0	0	0	1
9136	1	1	5	15	3	0	3	0	1	0	1
9137	1	1	5	3	1	1	2	0	0	1	0
9139	1	1	5	5	1	3	2	0	0	1	0
9140	1	1	3	3	0	3	1	0	0	0	1
9141	2	1	5	5	1	3	2	0	0	1	0
9142	0	1	3	2	0	4	3	0	0	1	1
9144	3	1	4	5	1	3	3	0	0	0	1
9145	0	1	5	5	2	0	3	0	0	2	1

PersonID	EGATSupport	EGATConcerns	EGATParticip	EGATOpinion
9080	0	0	1	2
9081	0	0	0	2
9082	0	0	1	0
9083	0	0	0	0
9084	0	0	1	2
9090	0	0	1	2
9091	0	0	1	0
9094	0	0	0	0
9096	0	0	1	1
9097	1	0	1	1
9098	0	0	0	0
9099	0	1	1	2
9100	0	0	1	1
9102	0	0	0	0
9103	0	0	1	0
9104	0	1	0	2
9105	0	0	0	0
9107	0	0	0	0
9108	1	1	1	1
9109	0	0	0	0
9110	1	1	1	1
9111	0	0	1	1
9112	0	0	0	0
9113	0	0	0	0
9114	0	0	0	0
9115	0	0	0	0
9116	0	0	0	0
9117	1	0	1	1
9118	1	1	0	0
9119	0	1	0	2
9127	0	0	1	2
9128	0	0	0	2
9129	0	0	1	2
9130	0	0	1	2
9131	0	0	1	2
9132	0	0	0	2
9134	0	0	0	0
9135	0	1	0	2
9136	0	0	0	2
9137	0	0	1	0
9139	0	0	1	0
9140	0	0	0	2
9141	0	0	0	2
9142	0	0	0	0
9144	0	0	0	0
9145	0	0	0	0

MohSeri

PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	Smoke1	Smoke2	Smoke3	Smoke4	Smoke5	Aphlm5	Aphlm6	Aphlm7
9146	2/9/2543	Moh Seri	Ray	5	4/10/2490	1	9		1	18	0		2	0		
9147	2/9/2543	Moh Seri	Ray	4	1/1/2471	1	8		0	0	0	0	0	0	0	0
9149	2/9/2543	Moh Seri	C	5	1/1/2483	2	7		1	50	1	1	1	0		
9150	2/9/2543	Moh Seri	C	4	4/2/2506	2	9		0					1	4	1
9151	2/9/2543	Moh Seri	Lamai	3	9/21/2516	2	7		0				0	0	0	0
9152	2/9/2543	Moh Seri	Pingmai	2	1/1/2487	1	10		1	17	1	2	1	1	1	1
9153	2/9/2543	Moh Seri	Lemai	7	9/20/2488	1	7		1	18	1	1	2	0		
9154	2/9/2543	Moh Seri	Lemai	4	1/20/2489	2	10		2	12	1	2	1	1	1	0
9155	2/8/2543	Moh Seri	Theep	4	8/13/2497	1	9		0					0		
9156	2/8/2543	Moh Seri	Pui	2	1/1/2476	2	8		1	11		0	1	0		
9158	2/8/2543	Moh Seri	Ray	5	8/23/2492	1	8		1	10	0		1	0		
9160	2/8/2543	Moh Seri	Nok	2	1/1/2471	2	9		1	15	0		1	0		
9161	2/8/2543	Moh Seri	Nok	3	11/1/2517	2	9		0					0		
9163	2/10/2543	Moh Seri	Nok	5	6/11/2496	1	9		1	12	0	0	1	0	0	0
9165	2/8/2543	Moh Seri	Re	4	10/21/2505	1	9		1	17	1	12	1	0		
9168	2/8/2543	Moh Seri	Ning	5	7/30/2514	2	8		0					0		
9170	2/8/2543	Moh Seri	Rung	4	5/27/2508	2	9		0					0		
9171	2/8/2543	Moh Seri	Clay	4	1/1/2472	2	8		1	25	0		1	0		
9172	2/8/2543	Moh Seri	Cle	4	7/23/2513	2	8		0					0		
9173	2/8/2543	Moh Seri	Rung	4	1/2/2508	2	8		0					0		
9174	2/8/2543	Moh Seri	Cle	5	6/4/2493	2	8		1	30		0	1	0		
9175	2/8/2543	Moh Seri	Mai	4	3/29/2498	2	9		0					0		
9176	2/8/2543	Moh Seri	C	4	12/27/2501	1	10		1	17	0		2	0		
9177	2/8/2543	Moh Seri	C	4	4/12/2509	1	10		1	15	0		1	0		
9181	2/7/2543	Moh Seri	Ray	5	1/1/2472	2	10		2	12	1	15	2	0		
9182	2/7/2543	Moh Seri	Ray	3	4/28/2502	2	10		2	12	1	84	3	0		
9183	2/7/2543	Moh Seri	Ray	3	9/10/2483	1	9		2	12	1	108	2	0		
9184	2/7/2543	Moh Seri	Clay	1	1/1/2476	1	8		1	30	0		1	0		
9185	2/7/2543	Moh Seri	Cle	4	4/30/2497	2	7		0					1	10	1
9187	2/7/2543	Moh Seri	Tip	3	10/12/2484	2	9		1	32	0		1	0		
9188	2/7/2543	Moh Seri	Tip	3	9/21/2501	1	9		0					0		
9189	2/7/2543	Moh Seri	Ning	4	2/5/2508	2	8		1	35	0		1	0		
9190	2/7/2543	Moh Seri	Ning	2	1/1/2478	2	8		0					0		
9191	2/7/2543	Moh Seri	Rumy	2	4/27/2496	2	8		0					0		
9192	2/7/2543	Moh Seri	Rumy	3	10/8/2492	1	8		1	17	1	3	1	0		
9193	2/7/2543	Moh Seri	Rumy	4	1/28/2519	2	9		0					0		
9194	2/7/2543	Moh Seri	Mai	3	10/27/2497	2	9		1	14	0		1	1	1	1
9195	2/7/2543	Moh Seri	Rumy	2	1/1/2471	1	8		0					0		
9196	2/7/2543	Moh Seri	Nok	5	9/10/2480	1	9		0					0		
9197	2/7/2543	Moh Seri	Nok	5	5/20/2496	2	9		0					0		
9198	2/7/2543	Moh Seri	Nok	2	1/6/2502	2	9		0					0		
9199	2/7/2543	Moh Seri	C	4	7/16/2510	2	10		0					0		
9200	2/9/2543	Moh Seri	Ray	5	3/3/2511	1	6		0					0		
9201	2/9/2543	Moh Seri	Nok	4	1/10/2510	2	9		0	0	0	0	0	0	0	0
9202	2/7/2543	Moh Seri	Mai	3	1/1/2496	1	9		1	16	0		3	0		
9203	2/9/2543	Moh Seri	Nok	7	1/1/2476	1	8		2	12	1	17	2	0		

MohSeri

PersonID	Acphlm2	Acphlm3	Acphlm4	Achest1	Achest3	Achest4	Achest5	Abreath1	Abreath2	Year2	Abreath3	Year3	Abreath4	Year4	Abreath5	Year5	Aasth1
9146	0			0				0									0
9147	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0
9149	0			0				0									0
9150	1 4		1	0				0									0
9151	0 0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9152	1 1		1	0				0									0
9153	0			0				0									0
9154	1 1		0	0				0									0
9155	0			0				0									0
9156	0			0				0									0
9158	0			0				0									0
9160	0			0				0									0
9161	0			0				0									0
9163	0 0		0	0	0	0	0	1	0	0	1	1	0	0	0	0	0
9165	0			0				0									0
9168	0			0				0									0
9170	0			0				0									0
9171	0			0				0									0
9172	0			0				0						0			0
9173	0			0				0									0
9174	0			0				0									0
9175	0			0				0									0
9176	0			0				1	1	0	0		0		0		0
9177	1 1		0	0				0									0
9181	0			1	0			0									0
9182	0			0				1	1	1	1	1	0		0		0
9183	1 3		0	0				0									0
9184	0			0				0									0
9185	1 10		1	1	1	1	1	1	1	1	0		0		0		0
9187	0			0				0									0
9188	0			0				0									0
9189	0			0				0									0
9190	0			0				0									1
9191	0			0				0									0
9192	0			0				1	1	1	1	1	1	1	0		0
9193	0			0				0									0
9194	1 10		1	0				0									1
9195	0			0				0									0
9196	0			0				0									0
9197	0			0				0									0
9198	0			0				0									0
9199	1 12		1	0				1	1	1	1	1	0		0		0
9200	0			0				0									0
9201	0 0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9202	0			0				1	1	1	1	1	1	1	0		0
9203	0			0				0									0

MohSeri

PersonID	Aasth2	Aasth3	Aasth4	Aasth5	Asymp1	Asymp2	Asymp3	Asymp4	Asymp5	Asymp6	Asymp7	Asymp8	Asymp9	Asymp10	Asymp11	Asymp12	Asymp13
9146					0	1	1	1	0	1	0	0	0	0	0	0	0
9147	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0
9149					1	0	1	1	0	1	1	1	1	0	0	0	0
9150					0	1	1	0	0	0	0	0	0	0	0	0	0
9151	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0
9152					1	1	1	1	1	1	1	1	1	0	1	0	1
9153					0	0	0	0	0	0	0	0	0	0	0	0	0
9154					1	1	1	1	1	1	1	1	1	0	0	0	1
9155					1	0	1	1	0	0	0	0	1	0	0	0	0
9156					1	0	0	0	0	1	1	1	1	0	1	0	0
9158					1	1	0	1	0	0	0	1	1	0	1	0	0
9160					0	0	0	1	0	1	0	0	0	0	1	0	0
9161					0	0	0	0	0	0	0	0	0	0	0	0	0
9163	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	0	0
9165					0	0	0	0	0	0	0	0	1	0	0	0	0
9168					1	1	1	1	1	1	1	0	0	0	0	0	0
9170					1	0	0	1	1	1	0	0	1	0	1	0	0
9171					1	1	0	0	0	0	0	1	0	0	0	0	0
9172					1	0	0	1	0	0	0	0	1	0	1	0	0
9173					1	0	1	1	0	1	1	1	0	0	1	0	0
9174					1	1	1	1	1	1	1	1	0	1	1	0	0
9175					1	1	0	0	0	1	0	0	0	1	1	0	0
9176					0	0	0	0	0	0	0	0	0	0	1	0	0
9177					1	1	1	1	1	1	1	1	0	0	1	0	1
9181					1	1	1	1	0	0	0	0	0	0	0	0	0
9182					1	1	0	1	1	1	0	0	0	0	1	0	0
9183					1	1	1	1	1	1	0	0	0	0	0	0	0
9184					0	0	0	0	0	0	0	0	0	0	0	0	0
9185					1	1	1	0	1	0	1	1	1	0	1	0	1
9187					0	0	1	0	0	0	0	0	0	0	0	0	0
9188					1	1	1	1	1	1	1	1	1	1	1	0	0
9189					0	0	0	0	0	0	1	0	1	0	0	0	0
9190	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0	0
9191					1	1	0	0	1	1	1	1	1	1	1	0	0
9192					1	1	1	1	1	1	0	0	0	0	1	0	0
9193					0	0	0	0	0	0	0	0	0	0	0	0	0
9194	1	1	2	0	1	1	1	1	1	1	0	0	0	0	0	1	0
9195					0	1	0	0	0	0	0	0	0	0	0	0	0
9196					0	0	1	1	0	0	0	0	0	0	0	0	0
9197					1	1	0	1	1	1	0	0	1	1	1	0	0
9198					1	1	1	1	0	1	1	1	0	0	0	0	0
9199					1	0	0	1	1	1	1	0	0	0	0	0	0
9200					0	1	1	0	0	0	0	0	0	0	1	0	0
9201	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0
9202					1	0	1	1	1	1	1	1	1	0	0	0	0
9203					1	1	1	1	0	1	0	0	0	0	0	0	0

MohSeri

PersonID	Asymp14	AccsToHealthC	HithCareClos	QualityHealthC	EGATFair	Aoccup	Asalary	Asalary1	Aedu	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo
9146	0	1	0	3	0	3	10000	0	3	0	3	0	1	0	0
9147	0	1	0	3	0	2	1000	0	3	0	3	0	1	0	1
9149	0	1	1	2	0	2	36000		2	0	6	0	1	0	0
9150	0	1	0	2	0	7	144000	1000	4	1	3	500	1	1	0
9151	0	1	0	2	1	6	60000	0	4	0	7	0	1	1	0
9152	0	1	0	2	0	7	2000	0	2	0	3	0	0	0	0
9153	0	1	1	1	0	7	5000		2	0	3	0	0	0	1
9154	0	1	1	1	0	3	1500	0	2	0	3	0	1	0	0
9155	0	1	1	2	0	7	1000	0	2	0	3	0	1	0	0
9156	0	1	0	2	1	5	0	300	2	0	7	50	1	1	0
9158	0	1	0	1	0	7	10000	0	2	0	3	0	1	1	0
9160	0	1	0	1	0	2	0		2	0	3	0	1	1	1
9161	0	1	0	3	0	7	49000		7	1	1	200	1	1	1
9163	0	1	0	3	0	7	10000	0	3	0	4	0	1	0	0
9165	0	1	0	1	1	8	36000	0	4	1	8	0	1	0	0
9168	0	1	0	2	1	2	12600		4	0	3		1	1	1
9170	0	1	1	3	1	2	420000	0	3	0	3	0	1	0	1
9171	0	1	0	2	0	2	36000	0	2	0	6	0	1	0	1
9172	0	1	0	2	0	7	72000	0	3	1	3	0	1	0	1
9173	0	1	0	2	0	7	15000	0	3	1	3	0	1	0	0
9174	0	1	1	0	3	3	1500	0	2	0	3	0	1	1	1
9175	0	1	1	2	0	3	4000		2	0	3	0	1	0	1
9176	0	1	0	1	0	3	12000	36000	3	0	3	0	1	0	0
9177	0	1	1	3	0	3	3000	300	3	1	3	0	1	0	1
9181	0	1	0	3	0	2	8400	0	3	0	3	0	1	1	0
9182	0	1	0	3	0	3	48000	0	3	0	3	0	1	1	1
9183	0	1	0	2	0	2	0	0	3	0	3	0	1	0	0
9184	0	1	0	3	0	2	6000		3	0	3	0	1	1	0
9185	1	1	1	3	0	2	48000		2	0	3	0	1	0	1
9187	0	1	0	3	0	2	50000	0	3	0	3	0	1	1	1
9188	0	1	0	1	0	7	12000	0	2	1	7	0	0	1	0
9189	0	1	0	2	0	7	78000		3	1	3		1	0	1
9190	0	1	1	1	0	2	3000		2	0	3	0	1	0	0
9191	0	1	1	2	0	2	12000		2	0	3	0	1	1	0
9192	1	1	0	2	0	7	5000	0	2	0	4	0	1	1	0
9193	0	1	0	2	0	7	30000	0	4	0	3	0	1	0	0
9194	0	1	1	2	0	2	5000		2	0	3	0	1	0	0
9195	0	1	1	2	0	2	0	0	2	0	3	0	0	0	0
9196	0	0	1	2	0	6	15000		3	0	3	0	1	1	1
9197	0	1	1	2	1	6	5000		3	0	3	0	1	1	1
9198	0	1	0	2	0	6	24000	60000	3	1	7	0	1	1	1
9199	0	1	0	2	1	7	50000	500	3	1	7	0	1	1	1
9200	0	1	0	2	0	8	46000	0	3	0	7	0	1	0	1
9201	0	1	0	3	1	2	100000	0	3	1	2	0	1	1	1
9202	0	1	1	2	0	8	42000	0	3	0	7	0	1	0	1
9203	0	1	0	3	0	6	48000		3	1	3	0	1	1	0

MohSeri

PersonID	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow
9146	0	1	0	0.25	2	2	2	2	2	2	2	2	2	4
9147	1	1	0	0.5	1	2	1	1	1	2	2	1	3	4
9149	1	0	0	1.5	3	1	2	3	2	2	2	2	1	4
9150	1	1	0	0.5	1	2	2	1	1	1	2	3	1	4
9151	1	1	0	0	3	1	2	3	1	2	2	2	2	4
9152	0	0	0	0.25	1	2	3	3	3	2	3	2	1	3
9153	1	1	0	0.35	3	3	3	3	3	1	2	2	1	4
9154	1	1	0	0.37	1	3	3	2	2	2	2	2	1	4
9155	1	0	0	0.37	1	3	1	1	2	3	2	2	3	4
9156	0	0	0	1	3	2	2	1	2	2	2	2	2	3
9158	1	1	0	0.5	3	2	2	3	3	2	2	2	1	4
9160	1	1	0	0.5	1	1	1	3	1	1	2	2	1	4
9161	1	1	1	1	1	1	1	1	1	2	2	2	1	4
9163	1	0	1	0.5	1	1	1	1	3	1	2	2	1	4
9165	1	1	1	0.12	1	2	3	2	3	1	2	1	2	3
9168	1	1	0	0.5	1	1	2	1	2	3	2	2	1	4
9170	1	1	0	0.24	1	3	1	1	1	2	2	2	1	4
9171	1	1	0	0.25	3	3	3	2	3	2	2	2	1	4
9172	1	1	1	0.5	1	3	1	1	1	2	2	2	1	4
9173	1	1	0	0.25	1	3	2	1	1	2	2	2	1	4
9174	1	1	0	3.56	1	3	2	3	3	2	2	2	1	4
9175	1	0	0	0.54	3	2	3	3	3	1	2	2	3	3
9176	1	1	1	4.5	1	1	1	3	1	1	2	3	1	1
9177	1	1	0	0.47	1	1	3	1	1	1	2	1	1	4
9181	1	1	0	0.4	3	3	2	3	2	2	2	2	2	4
9182	1	1	0	0.75	3	3	2	3	2	2	2	2	3	3
9183	0	0	0	0.4	3	3	2	3	2	2	2	2	3	1
9184	1	1	0	0.5	3	2	2	3	2	3	2	2	3	4
9185	1	1	1	0.25	3	3	3	2	1	1	2	2	1	4
9187	1	1	0	0.5	1	1	3	2	2	2	2	2	1	1
9188	1	1	0	0.5	3	3	1	1	2	2	2	2	1	4
9189	1	1	0	0.5	1	3	1	3	2	3	1	2	1	4
9190	1	0	0	0.5	3	1	2	3	3	3	2	2	3	4
9191	1	1	0	0.5	3	1	1	1	2	2	2	2	1	4
9192	1	1	0	0.25	2	2	2	1	2	2	2	2	1	4
9193	1	1	0	0	3	1	2	1	2	2	2	2	1	4
9194	1	0	0	0.1	1	3	2	3	2	3	2	2	1	4
9195	0	0	0	0.5	1	2	2	3	2	2	2	2	1	4
9196	1	1	0	6.5	1	1	2	3	2	1	1	2	1	4
9197	1	1	1	6.05	1	2	2	3	2	2	2	2	1	4
9198	1	1	1	0.5	3	3	2	1	2	1	1	2	1	4
9199	1	1	1	0.5	1	2	2	2	3	2	2	2	1	3
9200	1	1	1	2	3	3	2	2	2	2	2	2	1	3
9201	1	1	1	0.45	3	1	1	1	1	2	2	2	1	1
9202	1	1	0	0.125	1	3	3	3	2	2	2	1	1	4
9203	1	1	1	0.5	1	3	1	3	1	3	2	2	1	2

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PersonID	MorLesLand	CloseToJob	HouseBtrWrs	LivWithPpl	LivNearNbrs	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor
9146	2	0	2	1	0	0	0	0	0	1	0	1
9147	2	0	1	1	0	0	0	1	0	0	0	1
9149	2	0	2	0	0	1	1	1	1	1	1	1
9150	2	1	1	1	1	1	1	1	1	1	0	1
9151	2	0	1	1	0	1	1	1	1	1	1	1
9152	2	0	2	1	0	1	1	1	1	1	1	1
9153	2	0	1	1	0	0	1	1	1	1	1	1
9154	2	0	3	1	0	1	1	1	0	1	1	1
9155	2	0	3	1	1	0	1	0	0	0	0	1
9156	2	0	1	0	0	0	0	1	1	1	1	1
9158	2	0	1	1	1	1	0	1	0	0	0	1
9160	2	0	3	1	1	0	1	1	1	1	0	1
9161	2	0	1	1	1	1	1	1	1	1	1	1
9163	1	1	1	1	1	1	1	1	1	1	1	1
9165	2	0	2	1	1	0	0	1	0	0	0	1
9168	2	0	2	1	1	0	0	0	0	0	0	1
9170	1	1	1	1	0	1	1	1	1	1	0	1
9171	2	0	1	1	0	1	1	1	0	0	0	1
9172	1	1	1	1	1	1	1	1	1	0	0	1
9173	2	1	1	1	1	1	1	1	1	1	0	1
9174	2	1	3	1	1	1	1	1	1	1	0	1
9175	2	0	1	1	1	1	1	1	1	1	1	1
9176	2	0	1	1	0	1	1	0	1	1	0	1
9177	2	0	1	1	0	1	1	0	1	1	0	1
9181	2	0	3	1	1	0	0	0	0	0	0	1
9182	2	0	2	1	0	1	1	1	0	0	0	1
9183	2	0	2	1	0	0	0	1	1	0	0	1
9184	2	0	3	0	0	0	1	1	0	0	0	1
9185	2	0	1	1	0	0	1	1	1	0	0	1
9187	2	0	1	1	1	0	1	1	0	0	0	1
9188	2	1	2	1	1	0	0	1	0	0	0	1
9189	2	1	1	1	1	0	0	0	0	0	0	1
9190	2	0	2	1	1	0	0	0	0	0	0	1
9191	2	0	1	1	1	1	1	1	1	0	1	1
9192	2	0	1	0	0	1	1	1	1	0	0	1
9193	2	0	1	1	0	0	0	1	0	0	0	1
9194	2	0	2	1	1	0	0	1	1	1	1	1
9195	2	0	3	0	1	1	1	0	0	0	0	1
9196	2	1	1	1	1	1	1	1	1	1	0	1
9197	2	0	1	1	0	0	1	1	0	0	0	1
9198	1	1	3	1	1	0	1	1	0	1	0	1
9199	2	0	1	1	1	1	1	0	1	1	0	1
9200	2	0	2	1	1	0	0	1	0	0	0	1
9201	1	1	1	1	1	0	1	1	0	0	1	1
9202	2	0	3	0	0	0	1	1	1	1	1	1
9203	2	1	1	1	1	0	1	1	0	0	0	1

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PersonID	Construction	CommGroups	VisitTemple	ComTempleAct	CelebrateHldys	CommAct	Socialize	GovtFinSupprt	GovtTkConcrns	Happier	PreferStay
9146	3	1	5	5	2	2	3	0	0	0	1
9147	3	1	5	0	0	4	3	0	0	1	1
9149	3	1	2	5	0	3	3	0	0	0	1
9150	3	1	5	6	2	3	2	0	1	0	1
9151	1	1	5	5	1	2	2	0	0	0	0
9152	3	1	3	6	3	10	3	0	1	1	0
9153	3	1	4	10	0	0	3	0	1	0	0
9154	1	1	5	3	1	0	2	0	0	0	0
9155	1	1	5	10	1	10	3	0	0	0	1
9156	3	1	2	2	3	2	2	1	0	1	1
9158	3	1	5	3	1	0	3	1	1	1	1
9160	1	1	1	10	1	5	3	0	1	1	1
9161	2	1	1	2	3	5	3	0	1	1	1
9163	1	1	5	10	2	3	3	1	0	0	1
9165	3	1	5	5	0	3	3	1	0	1	1
9168	0	0	2	10	1		2	0	1	0	1
9170	1	1	5	20	3	20	2	0	1	1	0
9171	1	1	5	10	3	10	3	0	0	0	1
9172	3	1	5	20	3	10	3	0	0	0	1
9173	1	1	5	4	3	4	2	0	0	0	0
9174	1	1	5	2	3	10	2	1	1	0	1
9175	3	1	4	10	0	2	3	0	0	0	0
9176	3	1	5	5	3	5	3	0	0	0	1
9177	3	1	5	3	0	2	2	0	1	1	1
9181	0	1	5	0	0	0	2	0	0	0	1
9182	0	1	5	2	0	5	2	0	0	0	1
9183	3	1	5	0	0	5	3	0	0	0	1
9184	2	1	5	8	2	6	1	0	1	0	1
9185	1	1	5		2		3	0	0	0	1
9187	1	1	2	10	2	10	3	0	0	0	1
9188	2	1	5	25	1	25	3	0	0	0	1
9189	1	1	5	10	3	2	3	0	1	1	0
9190	3	1	1	12	3	5	2	0	1	0	1
9191	1	1	5	10	1	5	3	0	1	0	1
9192	1	1	5	2	1	2	2	1	1	0	1
9193	1	1	5	10	1	10	3	0	1	0	1
9194	3	1	5	4	0	0	3	0	0	0	1
9195	0	1	5	10	0	0	3	0	1	0	1
9196	1	1	5	5	1	3	3	0	0	0	1
9197	0	1	5	10	0	2	3	1	1	1	1
9198	1	1	5	4	1	5	3	0	0	1	0
9199	3	1	2	10	3	4	3	0	0	0	1
9200	1	1	0	0	0	0	2	0	0	0	1
9201	1	1	5	10	0	1	2	1	1	1	0
9202	2	1	5	5	0	3	3	0	1	0	1
9203	1	1	5	10	3	0	2	0	1	0	1

PersonID	EGATSupport	EGATConcerns	EGATParticip	EGATOpinion
9146	0	0	0	0
9147	0	0	0	2
9149	0	1	1	1
9150	0	1	1	0
9151	0	0	0	2
9152	0	0	0	0
9153	0	0	0	0
9154	0	0	0	2
9155	0	0	0	0
9156	1	1	1	1
9158	0	0	0	2
9160	0	1	1	2
9161	0	1	1	0
9163	0	0	1	2
9165	0	0	1	1
9168	0	0	1	2
9170	0	1	0	2
9171	0	0	1	0
9172	0	1	1	1
9173	0	0	0	2
9174	0	1	1	1
9175	0	0	1	2
9176	0	0	1	0
9177	0	0	1	0
9181	0	0	0	0
9182	0	0	1	2
9183	0	0	0	0
9184	0	1	0	0
9185	0	0	0	0
9187	0	0	0	0
9188	0	0	1	1
9189	0	0	1	2
9190	0	1	1	2
9191	0	1	1	2
9192	0	0	0	2
9193	0	0	0	0
9194	0	0	0	2
9195	0	0	0	2
9196	0	0	1	0
9197	0	0	0	0
9198	0	1	0	0
9199	0	0	1	0
9200	0	0	0	0
9201	0	1	0	2
9202	0	0	0	2
9203	0	0	1	0

MohSeri

PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	Smoke1	Smoke2	Smoke3	Smoke4	Smoke5	Aphlm5	Aphlm6	Aphlm7
9205	2/7/2543	Moh Seri	O	3	1/1/2481	2	9		1	16	0		1	0		
9206	2/7/2543	Moh Seri	O	5	9/24/2517	2	11		0					0		
9786	2/7/2543	Moh Seri	Tip	6	11/13/2510	2	11		0					0		
10001	2/5/2543	Moh Seri	Ole	4	12/7/2501	2	8		0					0		
10002	2/5/2543	Moh Seri	Rung	3	4/23/2511	2	8		0					0		
10003	2/11/2543	Moh Seri	Nok	3	7/19/2501	1	9		2	17	1	15	3	0		
10007	2/9/2543	Moh Seri	Tip	1	1/1/2479	2	4		2	8	1	10	1	0	0	0
10008	2/9/2543	Moh Seri	Tip	1	12/28/2491	1	8		1	20	0	0	1	0	0	0
10009	2/9/2543	Moh Seri	Ning	4	2/16/2505	1	8		1	20	0	2	0	0	0	0
10010	2/9/2543	Moh Seri	Ning	4	2/16/2505	1	8		1	20	0		2	0		
10011	2/9/2543	Moh Seri	Tip	1	1/1/2469	1	8		1	0	1		1	0		
10012	2/9/2543	Moh Seri	Ning	3	9/25/2478	1	9		1	20	1	3	1	0		

MohSeri

PersonID	Acphlm2	Acphlm3	Acphlm4	Achest1	Achest3	Achest4	Achest5	Abreath1	Abreath2	Year2	Abreath3	Year3	Abreath4	Year4	Abreath5	Year5	Aasth1
9205	0			0													0
9206	1	12	0	0				1	0		0		0		0		0
9786	0			0				0									0
10001	0			0				0									0
10002	0			0				0									0
10003	0			0				0									1
10007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10009	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0
10010	0			0				1	1	0	1	2	0		0		0
10011	0			0				0									0
10012	0			0				0									0

MohSeri

PersonID	Aasth2	Aasth3	Aasth4	Aasth5	Asymp1	Asymp2	Asymp3	Asymp4	Asymp5	Asymp6	Asymp7	Asymp8	Asymp9	Asymp10	Asymp11	Asymp12	Asymp13
9205					1	1	0	1	1	1	1	1	1	0	1	0	0
9206					1	0	0	0	1	0	0	1	0	0	1	0	0
9786					0	0	0	0	0	0	0	0	0	0	0	0	0
10001					1	0	1	1	1	0	0	0	0	0	0	0	0
10002					0	0	0	0	0	0	0	1	0	0	0	0	0
10003	1	3	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0
10007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10008	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
10009	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0
10010					0	0	1	0	0	0	1	0	1	0	0	0	0
10011					0	0	0	0	0	0	0	0	0	0	1	0	0
10012					0	0	0	1	1	1	0	0	0	0	0	0	0

MohSeri

PersonID	Asymp14	AccsToHealthC	HlthCareClos	QualityHealthC	EGATFair	Aoccup	Asalary	Asalary1	Aedu	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo
9205	0	1	0	2	0	3	15000	0	2	0	3	0	1	0	0
9206	0	1	1	3	0	6	120000	0	5	1	1	3000	1	1	1
9786	0	1	1	1	1	7	36000		3	2	3	0	1	0	0
10001	0	1	1	2	0	6	204000	0	3	0	6	0	1	1	0
10002	0	1	0	2	0	7	5700	0	3	1	7	0	1	1	0
10003	0	1	2	3	0	8	48000		3	1	8	0	1	1	0
10007	0	1	1	2	1	7	500	0	3	0	3	0	0	1	0
10008	0	1	1	1	1	7	8000	0	2	0	3	0	1	1	0
10009	0	1	1	3	0	8	37080	0	3	0	3	0	1	1	0
10010	0	1	1	3	0	8	37080		3	0	3	0	1	1	0
10011	0	1	1	2	1	2	5000	0	3	0	2	0	0	0	0
10012	0	1	0	1	1	7	42720	2100	3	0	3	0	1	1	0

MohSeri

PersonID	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow
9205	1	1	0	5.5	1	2	2	2	1	3	2	2	1	4
9206	1	1	1	0.5	2	2	2	2	2	2	2	2	1	4
9786	1	1	0	0.17	1	1	1	1	2	2	2	2	1	4
10001	1	1	1	0.34	1	1	2	1	2	1	2	2	1	3
10002	1	1	0	0.075	2	2	2	2	2	2	2	2	1	3
10003	1	1	1	0.25	1	1	2	1	1	2	2	2	1	2
10007	0	0	0	0.25	2	2	2	3	2	2	2	2	3	4
10008	0	1	0	0.5	1	1	2	3	2	3	2	2	1	4
10009	1	1	0	0.5	2	2	2	3	3	0	3	2	1	4
10010	1	1	0	0.5	2	2	2	3	3	3	2	2	1	4
10011	1	0	0	1.75	1	1	1	1	2	2	2	2	1	4
10012	1	1	0	0.5	3	3	3	3	3	3	3	3	3	3

MohSeri

PersonID	MorLesLand	CloseToJob	HouseBtrWrs	LivWithPpl	LivNearNbrs	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor
9205	2	0	3	1	1	1	1	1	1	1	1	1
9206	2	0	2	1	0	0	1	0	1	1	0	1
9786	1	2	3	1	0	0	0	0	0	0	0	1
10001	2	0	1	0	0	0	1	1	0	1	0	1
10002	2	1	2	1	0	0	1	0	0	0	1	1
10003	1	0	1	1	1	0	1	1	1	0	0	1
10007	2	0	2	0	0	0	0	1	0	1	0	1
10008	2	0	3	0	1	0	0	0	0	0	0	1
10009	2	0	2	1	1	1	0	0	1	0	0	1
10010	2	0	2	1	1	1	0	0	1	0	0	1
10011	2	0	3	1	1	0	0	0	0	0	0	1
10012	3	0	3	1	0	1	0	0	1	0	0	1

Appendix N
Analysis Tables of Moh Seri Data

EGAT Questions

Table 1: Percent responses to whether or not relocation agreement with EGAT was fair?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	76.2	77.6	75.9	80.9	73.2	67.7	80.3	66.6	80.2
yes	23.2	22.4	24.1	19.1	26.8	32.3	19.7	33.3	19.8

Table 2: Percent responses to whether or not EGAT provided enough support?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	88.1	91.0	88.0	85.3	91.4	83.9	89.7	88.0	88.6
Yes	10.6	9.0	12.0	14.7	7.3	12.9	10.3	11.9	10.3

Table 3: Percent responses to whether or not EGAT took the concerns of the village seriously?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	76.8	80.6	74.5	79.4	75.6	61.3	81.2	75.6	79.0
Yes	21.2	16.4	25.3	19.1	23.1	35.5	17.9	24.2	21.0

Table 4: Percent Responses for villagers general opinion about EGAT

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Neg	46.4	50.7	43.3	55.9	39.0	35.53	49.6	31.7	32.8
Pos	17.9	17.9	18.1	16.2	19.5	32.3	4.5	26.8	15.1
Nc	34.4	29.9	38.6	26.5	41.5	32.3	35.0	41.4	32.1

Government Questions

Table 5: Percent responses to whether or not the government provided adequate financial support?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	82.8	85.1	81.9	80.9	85.4	80.6	83.8	92.7	80.2
Yes	15.9	14.9	16.9	19.1	13.4	19.4	15.4	7	19.8

Table 6: Percent responses to whether or not the government took the concerns of the village seriously?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	62.3	65.7	60.2	64.7	61.0	54.8	65.0	53.7	67
Yes	36.4	34.3	38.6	35.3	37.8	45.2	34.1	46.3	33

Attitudes towards Relocation Questions

Table 7: Percent responses to whether or not the villagers are happier in Moh Seri?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	64.2	65.7	63.9	63.2	65.9	48.4	69.2	59.5	67.3
Yes	29.8	19.9	30.1	30.9	29.2	45.2	26.5	33.3	29.2

Table 8: Percent responses to whether or not the villagers would have preferred to stay in the old village (had they been given the option)?

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
No	21.1	17.9	24.1	19.1	23.2	35.5	17.1	26.2	19.8
Yes	77.5	80.6	75.9	79.4	76.8	64.5	82.1	71.4	80.2

Infrastructure Questions

Table 9: Percent response rankings of quality of roads relative to conditions in old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Better	53.6	62.3	47.0	50	57.3	56.3	50.8	57.1	52.8
Worse	19.9	16.4	19.2	20.6	15.9	21.9	16.7	21.4	17.0
Same	27.8	20.9	33.7	29.4	26.8	18.8	30.0	21.5	30.2

Table 10: Percent response rankings of quality of schools relative to conditions in old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Better	27.8	34.3	23.0	20.6	34.1	18.8	25.0	31.0	27.4
Worse	47	40.3	53.0	48.5	46.3	43.8	47.5	40.5	49.1
Same	24.5	25.4	24.1	30.9	19.5	34.4	25.0	28.6	23.6

Table 11: Percent response rankings of quality of electricity relative to conditions in old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Better	31.3	28.4	33.7	22.1	39.0	34.4	26.7	35.7	29.2
Worse	16.6	16.4	16.9	16.2	17.1	21.9	15.0	14.3	17.9
Same	51.0	53.7	49.4	61.8	42.7	40.6	55.0	50.0	51.9

Table 12: Percent response rankings of access to market relative to conditions in old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Better	24.5	26.9	22.9	19.1	29.3	12.5	20.0	35.7	20.7
Worse	58.3	52.2	63.9	63.2	54.9	43.8	60.0	54.8	59.4
Same	16.6	20.9	13.3	17.6	15.9	40.6	17.5	9.5	19.8

Table 13: Percent response rankings of quality of recreation facilities relative to conditions in old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Better	23.8	25.4	22.9	19.1	28.0	15.6	23.3	14.3	28.3
Worse	48.3	47.7	49.4	44.1	52.4	56.3	45.0	59.5	43.4
Same	26.5	25.4	27.7	36.8	18.3	25.0	28.3	26.2	27.4

Table 14: Percent response rankings of quality of the temple relative to conditions in old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Bttr	7.3	6.0	8.4	7.4	7.3	15.6	5.8	4.8	8.5
Wrse	88.1	86.6	96.3	88.2	89.0	56.3	86.7	90.5	87.7
Same	3.3	6.0	1.0	4.4	36.6	25.0	5.0	4.8	3.8

Table 15: Percent responses that specified infrastructure was better than in the old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Roads	53.6	62.3	47	50	57.3	56.3	50.8	57.1	52.8
Schls	27.8	34.3	23	20.6	34.1	18.8	25	31	27.4
Electr	31.3	28.4	33.7	22.1	39	34.4	26.7	35.7	29.2
Markt	24.5	26.9	22.9	19.1	29.3	12.5	20	35.7	20.7
Recr	23.8	25.4	22.9	19.1	28	15.6	23.3	14.3	28.3
Tmpl	7.3	6	8.4	7.4	7.3	15.6	5.8	4.8	8.5

Table 16: Percent responses that specified infrastructure was worse than in the old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Roads	19.9	16.4	19.2	20.6	15.9	21.9	16.7	21.4	17
Schls	47	40.3	53	48.5	46.3	43.8	47.5	40.5	49.1
Electr	16.6	16.4	16.9	16.2	17.1	21.9	15	14.3	17.9
Markt	58.3	52.2	63.9	63.2	54.9	43.8	60	54.8	59.4
Recr	48.8	47.4	49.4	44.1	52.4	56.3	45	59.5	43.4
Tmpl	88.1	86.6	96.3	88.2	89	56.3	86.7	90.5	87.7

Table 17: Percent responses that specified infrastructure was the same as in the old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Roads	27.8	20.9	33.7	29.4	26.8	18.8	30	21.5	30.2
Schls	24.5	25.4	24.1	30.9	19.5	34.4	25	28.6	23.6
Electr	51	53.7	49.4	61.8	42.7	40.6	55	50	51.9
Markt	16.6	20.9	13.3	17.6	15.9	40.6	17.5	9.5	19.8
Recr	26.5	25.4	27.7	36.8	18.3	25	28.3	26.2	27.4
Tmpl	3.3	6	1	4.4	3.6	25	5	4.8	3.8

Environmental Questions

Table 18: Percent responses to whether water was cleaner, dirtier, or about the same compared to the old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Clean	9.3	6.0	13.4	8.8	9.8	8.5	12.9	9.5	9.4
Dirt	83.4	86.7	80.6	86.8	81.7	85.5	77.4	73.8	87.7
Same	6.6	7.2	6.0	4.4	8.5	6.0	9.7	16.7	2.8

Table 19: Percent responses to whether the air was cleaner, dirtier, or about the same compared to the old village

	All	Old	Young
Cleanier	71.4	63.2	81.7
Dirtier	8.0	13.2	3.7
Same	18.6	23.6	14.6

Table 20: Percent responses to whether the house, in general, was of better, worse, or similar quality to the house in the old village

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
Better	53	49.3	56.6	44.1	61.0	64.3	49.1	64.5	50.4
Worse	23.8	26.9	14.5	17.6	22.0	16.7	21.7	25.8	18.8
Same	44.4	23.9	28.9	38.2	17.1	19	29.2	9.7	30.7

Social Questions

Table 21: Percent responses to the number of times per week villagers visit or socialize with friends and neighbors

	All	Male	Female	>50yr	<50yr	More\$	Less\$	>40K	<40K
<1/wk	9.9	6.0	13.3	7.4	12.2	6.5	11.1	4.8	11.1
1-3/w	30.5	26.9	33.7	29.4	31.7	32.3	29.9	40.5	25.9
3/wk	58.9	67.3	53.0	63.2	56.1	61.3	60.0	54.8	62.9

Appendix O
Complete Survey Results
For Moh Luang/Na Kam

NaKam

HouseHoldID	PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	AccsToHealthC	HlthCareClos
3	1101001015	2/5/43	Na Kam / Moh Luang	tin	4	1/1/2506	2	8		1	0
9	1101002015	2/5/43	Na Kam / Moh Luang	tik	5	7/22/2509	2	8		1	0
12	1101044015	2/5/43	Na Kam / Moh Luang	tik	4	6/15/2503	1	8		1	0
16	1106068015	2/5/43	Na Kam / Moh Luang	jeab	3	11/17/2514	2	15		1	0
18	1101045015	2/5/43	Na Kam / Moh Luang	rai	5	4/27/2503	2	7		1	0
23	1101046015	2/5/43	Na Kam / Moh Luang	tin	4	10/27/2506	2	7		0	0
27	110147015	2/5/43	Na Kam / Moh Luang	tik	3	5/5/2506	2	8		1	0
32	1101048015	2/5/43	Na Kam / Moh Luang	tin	9	3/25/2518	1	9		1	0
37	1101050015	2/5/43	Na Kam / Moh Luang	rai	3	4/23/2492	2	9		1	0
40	1101051015	2/5/43	Na Kam / Moh Luang	jeab	2	6/10/2493	2	8		1	0
47	1101052015	2/5/43	Na Kam / Moh Luang	jeab	3	2/6/2509	2	8		1	0
50	1101053015	2/5/43	Na Kam / Moh Luang	jeab	4	1/1/2486	1	13		1	0
55	11010540	2/5/43	Na Kam / Moh Luang	rai	2	8/30/2494	2	9		1	0
57	1101055015	2/5/43	Na Kam / Moh Luang	tin	5	4/3/2511	2	9		1	0
64	1102003015	2/6/43	Na Kam / Moh Luang	tik	6	12/23/2500	1	10		1	0
71	1102005015	2/6/43	Na Kam / Moh Luang	tin	7	9/3/2500	1	11		1	0
75	1102006015	2/6/43	Na Kam / Moh Luang	tin	4	10/5/2496	2	10		1	0
77	1102007015	2/6/43	Na Kam / Moh Luang	tin	4	5/7/2492	1	9		1	0
81	1102008015	2/5/43	Na Kam / Moh Luang	rai	5	1/1/2497	1	7		1	2
94	1102011015	2/6/43	Na Kam / Moh Luang	tik	3	10/1702497	1	9		1	0
98	1102012015	2/6/43	Na Kam / Moh Luang	jeab	3	1/20/2478	2	9		1	0
99	1102010015	2/6/43	Na Kam / Moh Luang	jeab	4	9/25/2506	2	9		1	0
101	1108013015	2/6/43	Na Kam / Moh Luang	rai	4	12/21/2495	2	9		0	0
105	1102014015	2/5/43	Na Kam / Moh Luang	jeab	5	12/25/2489	2	11		1	1
112	1102015015	2/1/43	Na Kam / Moh Luang	tik	1	2/4/2499	1	1		1	0
115	1102016015	2/6/43	Na Kam / Moh Luang	jeab	5	1/1/2489	2	8		1	0
120	1102017015	2/6/43	Na Kam / Moh Luang	Rai	4	7/26/2503	1	9		1	0
124	1102018015	2/6/43	Na Kam / Moh Luang	rai	4	9/16/2501	1	10		1	0
128	1102019015	2/6/43	Na Kam / Moh Luang	jeab	5	1/1/2471	2	9		1	1
135	1102052015	2/6/43	Na Kam / Moh Luang	tik	4	12/23/2505	2	9		1	0
138	1102053015	2/6/43	Na Kam / Moh Luang	rai	2	5/18/2506	2	12		1	1
143	1102054015	2/6/43	Na Kam / Moh Luang	tik	4	6/3/2523	1	8		1	0
147	1102055015	2/5/43	Na Kam / Moh Luang	tik	4	8/1/2515	2	10		1	0
150	1103020015	2/6/43	Na Kam / Moh Luang	tik	4	4/10/2501	2	9		1	0
152	1106070015	2/6/43	Na Kam / Moh Luang	tik	2	10/10/2503	2	9		1	0
159	1103022015	2/6/43	Na Kam / Moh Luang	tin	5	1/11/2498	1	7		1	0
167	1103024015	2/6/43	Na Kam / Moh Luang	jeab	3	6/29/2467	2	9		1	1
171	1103025015	2/7/43	Na Kam / Moh Luang	jeab	5	10/1/2519	2	6		1	0
176	1103026015	2/6/43	Na Kam / Moh Luang	tin	2	1/1/2496	2	9		1	0
178	1103027015	2/6/43	Na Kam / Moh Luang	tin	4	9/13/2501	2	7		1	0
187	1103029015	2/6/43	Na Kam / Moh Luang	tik	3	11/28/2499	1	9		1	0
196	000000000000	2/7/43	Na Kam / Moh Luang	tin	1	1/1/2486	1	9		1	0
197	1103032015	2/6/43	Na Kam / Moh Luang	rai	5	1/1/2471	2	9		1	0
198	1103031015	2/7/43	Na Kam / Moh Luang	tin	3	1/1/2490	2	10		1	0
203	1103055015	2/6/43	Na Kam / Moh Luang	rai	4	10/4/2510	2	10		1	0
206	1103056015	2/6/43	Na Kam / Moh Luang	tik	5	11/10/2493	1	9		1	0

NaKam

HouseHoldID	QualityHealthC	EGATFair	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools
3	3	1	1	7	0	1	0	0	1	1	0	0.25	1	1	2
9	1	1	0	7	0	1	0	0	1	1	0	1.75	1	3	1
12	3	0	0	7	0	1	0	1	1	1	0	1.75	1	3	1
16	3	1	0	2	5000	1	0	1	1	1	0	1.75	1	1	1
18	1	1	0	7	0	1	0	0	1	1	0	1.75	1	2	3
23	3	1	1	7	0	0	1	0	0	0	0	0.25	1	1	1
27	3	1	0	7	0	0	0	0	1	0	0	0.25	1	1	1
32	3	1	0	7	0	0	0	0	1	0	0	1.75	0	0	0
37	2	1	0	3	0	1	0	0	1	1	0	1.75	1	1	1
40	3	1	0	2	0	1	1	0	1	0	1	1	1	1	1
47	3	1	1	7	0	0	1	0	1	0	0	0.25	0	0	0
50	1	0	0	3	0	1	0	0	1	1	0	1.75	1	3	1
55	3	0	0	3	0	1	0	0	1	1	0	1.75	1	3	1
57	3	0	0	2	0	1	1	1	1	1	1	1.75	1	1	1
64	3	0	1	7	0	1	0	1	1	1	0	1.75	1	1	1
71	3	1	0	7	0	1	0	0	1	1	0	1.75	1	1	2
75	1	1	0	3	0	1	0	1	1	1	0	1.75	1	1	2
77	1	1	0	7	0	1	1	1	1	1	0	1.75	1	1	3
81	1	1	0	3	1000	1	1	0	1	1	0	1.75	1	3	3
94	3	1	1	9	0	1	1	1	1	1	1	0.375	1	1	1
98	1	0	0	2	0	1	1	1	1	1	1	1.75	1	3	1
99	3	0	0	3	0	1	1	0	1	1	0	1.75	1	3	1
101	3	0	0	3	0	1	1	0	1	1	0	1.75	1	3	1
105	3	0	0	3	0	0	1	0	1	1	0	1.75	1	1	1
112	1	1	2	7	0	1	1	1	1	0	0	1.75	1	3	1
115	3	0	1	3	0	0	0	0	0	0	0	1.75	1	3	1
120	3	0	1	9	500	1	1	1	1	1	0	1.75	1	1	1
124	3	0	0	7	3000	1	0	0	1	1	0	1.75	1	1	1
128	2	1	0	3	0	1	1	0	1	1	0	1.75	1	3	3
135	3	0	1	8	0	1	0	1	1	1	0	1.75	1	1	1
138	1	1	0	3	300	1	1	0	1	1	0	1.75	1	2	1
143	3	1	1	7	0	1	0	1	0	0	0	1.75	1	1	1
147	3	1	1	9	4000	1	1	1	1	1	1	2.75	1	1	1
150	1	0	0	3	0	1	1	1	0	11	0	1.75	1	1	1
152	1	0	0	2	0	1	1	1	1	1	0	1.75	1	1	1
159	3	1	1	7	0	1	0	0	0	1	0	1.75	1	1	1
167	1	0	0	3	0	1	0	0	1	1	1	1.75	1	3	1
171	3	0	1	1	10000	1	1	1	1	1	0	1.75	2	3	1
176	3	1	0	3	1000	1	0	0	1	1	0	1.75	1	1	2
178	3	1	0	3	0	1	1	1	1	1	0	1.75	1	1	1
187	3	0	0	7	0	1	0	1	1	1	0	1.75	3	3	1
196	3	0	0	3	0	0	1	0	0	1	0	1.75	1	1	1
197	1	0	0	0	1	1	1	1	1	1	0	1.75	1	3	3
198	3	1	0	3	0	1	0	0	1	1	0	1.75	1	1	2
203	2	1	1	2	0	1	0	1	1	1	0	1.75	1	3	1
206	1	0	0	9	0	1	0	1	1	1	0	1.75	1	3	1

NaKam

HouseHoldID	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow	MorLesLand	CloseToJob	HouseBtrWrs	LivWithPpl	LivNearNbrs	HlpCrops
3	3	2	1	1	1	3	4	2	1	3	0	1	0
9	3	2	2	3	3	3	1	2	0	3	1	1	1
12	3	2	1	1	1	1	1	1	0	1	1	0	0
16	1	2	3	3	1	3	4	2	0	2	0	0	0
18	3	3	3	3	1	1	3	1	0	3	0	0	0
23	1	2	1	3	2	1	1	1	1	1	1	1	0
27	1	2	1	1	1	1	1	1	0	1	1	0	1
32	0	2	1	1	2	2	4	1	0	1	1	1	0
37	1	2	2	2	2	1	4	2	0	2	1	0	0
40	1	2	1	1	2	1	1	1	1	1	1	0	0
47	0	0	0	0	2	2	2	2	1	2	1	1	0
50	1	2	2	2	2	2	4	2	0	1	1	1	0
55	1	2	1	2	1	1	1	2	0	2	1	1	0
57	1	3	1	1	2	3	4	1	0	1	1	1	0
64	1	1	1	1	1	1	4	2	1	1	1	0	1
71	3	2	3	3	1	3	3	1	0	3	1	1	0
75	3	2	3	1	1	3	4	1	0	1	0	0	0
77	3	2	3	2	2	1	4	1	1	1	1	0	0
81	1	2	1	3	3	2	3	2	0	2	1	1	0
94	1	3	3	2	1	1	1	1	1	1	1	0	0
98	3	2	3	1	1	3	1	1	0	3	1	1	0
99	2	2	3	1	3	3	4	2	0	1	1	1	0
101	3	3	1	3	1	1	4	2	0	3	1	1	0
105	2	2	2	1	2	2	4	2	0	2	1	0	1
112	1	1	1	1	1	1	1	1	1	1	1	0	0
115	3	2	3	2	1	3	1	2	1	2	1	1	0
120	1	2	2	1	3	1	3	2	0	1	1	0	0
124	1	1	1	3	1	2	4	2	1	2	1	1	1
128	1	1	3	2	1	1	3	1	0	1	1	1	1
135	1	1	1	1	1	3	4	2	1	1	1	0	0
138	1	2	1	2	3	2	4	2	1	1	0	1	0
143	1	1	1	1	1	1	4	1	0	2	1	0	1
147	1	1	1	1	1	1	4	1	1	3	1	0	0
150	3	2	3	2	1	3	3	2	0	1	1	0	0
152	3	2	3	2	1	3	3	2	0	1	1	0	0
159	3	3	3	2	2	2	4	2	0	3	0	0	0
167	1	2	2	2	1	3	4	2	0	2	1	1	0
171	1	1	3	1	2	3	4	2	1	1	1	0	0
176	3	2	3	2	2	3	3	2	0	2	0	0	0
178	1	2	3	1	2	2	4	2	0	1	1	0	0
187	1	3	3	2	1	3	4	2	1	1	1	1	1
189	1	3	3	2	1	3	4	2	0	3	0	0	0
196	2	1	3	1	1	3	4	2	0	1	1	1	1
197	3	2	3	2	2	3	4	2	0	1	1	1	1
198	1	2	3	2	1	1	4	1	0	1	0	0	0
203	1	2	1	2	1	1	1	1	1	1	1	1	0
206	1	3	3	1	1	3	3	2	1	2	1	0	0

NaKam

HouseHoldID	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor	Construction	CommGroups	VisitTemple	ComTempleAct	CommAct	Socialize
3	0	0	0	0	0	7	1	0	0	5	7	3
9	1	1	1	1	0	0	1	1	5	4	1	3
12	0	0	0	0	0	1	3	1	5	3	1	1
16	0	0	0	0	0	1	0	1	5	2	10	1
18	1	0	0	0	0	1	0	0	5	4	0	3
23	0	0	0	0	0	1	1	1	2	3	2	2
27	1	1	0	1	1	1	1	1	5	4	1	3
32	1	0	1	0	0	1	0	1	5	3	3	1
37	1	1	0	0	0	1	1	0	4	2	2	3
40	1	0	1	0	0	1	0	0	5	5	7	1
47	1	0	1	1	0	1	0	0	5	5	5	3
50	0	0	0	0	0	1	0	1	5	3	5	1
55	1	1	0	0	0	1	0	1	5	4	2	3
57	0	0	0	0	0	1	3	1	5	5	6	2
64	1	0	0	1	1	1	1	1	5	1	3	1
71	0	0	0	0	0	1	0	1	2	4	4	3
75	0	0	0	0	0	1	0	1	5	4	1	1
77	0	0	0	0	0	1	0	1	3	4	2	3
81	1	0	0	0	0	1	1	0	5	10	10	3
94	1	0	0	1	1	1	1	1	4	4	4	3
98	0	0	0	0	0	1	0	1	0	0	0	3
99	1	1	1	1	1	1	0	1	5	0	5	3
101	1	0	0	1	0	1	3	0	5	5	3	3
105	1	0	0	1	0	1	0	0	2	4	5	3
112	0	0	1	0	0	1	1	1	2	3	0	3
115	1	0	0	1	0	0	0	0	0	0	0	2
120	1	1	1	1	1	1	1	0	3	2	2	1
124	0	0	1	0	0	1	3	0	2	2	1	2
128	1	0	1	0	0	1	0	0	5	2	2	3
135	1	0	0	1	0	1	2	1	5	2	4	2
138	0	0	0	0	0	1	0	0	0	0	0	2
143	1	0	1	1	0	0	1	1	5	4	4	1
147	1	1	0	1	1	1	1	1	2	1	0	1
150	1	1	0	1	1	1	2	1	5	1	2	3
152	1	1	0	1	1	1	2	1	5	1	2	3
159	0	0	0	0	0	1	1	1	5	5	1	2
167	1	0	0	0	0	1	1	1	5	10	10	2
171	1	0	0	0	0	1	0	1	5	2	3	3
176	0	0	0	0	0	1	0	1	5	7	2	1
178	0	0	0	0	1	1	1	1	5	5	4	3
187	1	0	0	1	1	1	0	1	6	5	3	2
196	0	0	0	0	1	1	0	1	0	5	5	1
197	1	1	1	1	0	1	0	1	3	3	0	3
198	0	0	0	0	0	1	0	1	2	5	1	1
203	0	0	0	0	0	1	0	0	5	2	0	3
206	1	0	1	1	0	1	1	1	5	4	1	3

NaKam

HouseHoldID	GovtFinSupprt	GovtTKConcrns	Happier	PreferStay	EGATSupport	EGATConcerns	EGATParticip	EGATOpinion
3	0	0	1	1	0	1	1	2
9	0	0	0	1	0	0	0	0
12	0	1	0	0	1	1	1	1
14	0	0	0	1	1	0	1	2
18	0	0	0	1	0	1	1	1
23	1	1	1	1	1	0	1	2
27	0	0	1	1	1	0	1	2
32	0	0	0	1	1	0	1	0
37	0	1	0	1	1	1	1	1
40	0	0	1	1	0	0	1	1
47	1	0	1	0	0	0	0	0
50	0	0	0	1	1	0	1	0
55	0	0	0	1	1	0	1	2
57	0	1	1	1	1	0	1	1
64	0	0	1	1	1	1	1	1
71	1	1	0	1	1	0	1	0
75	0	0	0	1	0	0	0	0
77	1	1	0	1	0	0	1	2
81	0	0	0	1	0	1	1	1
94	0	0	1	1	1	1	1	2
98	1	1	1	1	1	1	1	2
99	0	0	0	1	0	1	1	0
101	0	0	2	0	1	1	1	2
105	0	0	0	1	0	0	1	0
112	2	2	1	0	1	1	1	2
115	0	0	0	0	0	0	1	1
120	1	1	1	0	1	1	1	1
124	0	1	0	1	0	1	1	1
128	1	0	0	1	1	1	1	1
135	0	0	0	1	0	1	1	1
138	0	0	1	1	1	1	1	1
143	0	0	1	1	1	0	1	1
147	0	0	0	1	1	1	1	2
150	1	0	1	1	1	1	1	1
152	1	0	1	1	1	1	1	1
159	0	0	0	1	1	0	0	2
167	0	0	0	1	0	0	1	2
171	0	0	0	0	0	1	1	1
176	0	0	0	1	0	0	0	0
178	0	0	0	1	1	0	0	2
187	0	1	1	1	1	1	1	2
196	0	0	0	1	0	0	1	2
197	0	0	0	0	1	0	0	1
198	0	1	0	0	1	1	1	1
203	1	0	0	0	1	0	1	1
206	0	0	0	1	1	1	1	2

NaKam

HouseHoldID	PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	AccsToHealthC	HlthCareClos
222	1104032015	2/7/43	Na Kam / Moh Luang	tik	5	5/23/2493	1	9	.	1	0
233	1104034015	2/7/43	Na Kam / Moh Luang	rai	6	8/9/2501	2	10	.	1	0
238		2/7/43	Na Kam / Moh Luang	tik	4	4/22/2506	1	9	.	1	0
254	1104037015	2/7/43	Na Kam / Moh Luang	tin	6	1/7/2520	2	10	.	1	0
256	1104038015	2/7/43	Na Kam / Moh Luang	tin	4	1/1/2479	2	12	.	1	0
259	1104039015	2/7/43	Na Kam / Moh Luang	jeab	4	11/26/2492	1	7	.	1	0
263	1104040015	2/7/43	Na Kam / Moh Luang	rai	5	1/5/2504	2	9	.	1	0
270	1104041015	2/7/43	Na Kam / Moh Luang	jeab	3	8/13/2514	2	4	.	1	0
273	1104042015	2/7/43	Na Kam / Moh Luang	rai	5	11/18/2506	2	9	.	1	0
277	1104043015	2/7/43	Na Kam / Moh Luang	tik	3	6/29/2506	2	9	.	1	0
279	1104058015	2/7/43	Na Kam / Moh Luang	tin	4	1/29/2508	2	9	.	1	0
284	1104056015	2/7/43	Na Kam / Moh Luang	jeab	4	8/31/2505	2	9	.	1	1
289	1104060015	2/7/43	Na Kam / Moh Luang	tik	4	8/31/2507	2	9	.	1	0
292	1104061015	2/7/43	Na Kam / Moh Luang	tik	6	1/1/2482	2	9	.	1	0
293	1104062015	2/7/43	Na Kam / Moh Luang	rai	6	11/15/2481	1	9	.	1	0
1082	1701001015	2/8/43	Na Kam / Moh Luang	rai	4	11/28/2498	2	17	.	1	1
1112	1701008015	2/8/43	Na Kam / Moh Luang	tin	4	3/24/2500	1	15	.	1	0
1121	1701010015	2/8/43	Na Kam / Moh Luang	jeab	6	8/18/2495	2	17	.	1	0
1126	1701011015	2/8/43	Na Kam / Moh Luang	jeab	5	5/29/2512	2	17	.	1	0
1135	1701012015	2/8/43	Na Kam / Moh Luang	tin	6	5/8/2504	1	16	.	1	0
1136	1701013015	2/8/43	Na Kam / Moh Luang	tin	4	12/22/2507	2	16	.	1	0
1141	1701014015	2/8/43	Na Kam / Moh Luang	rai	5	7/10/2510	2	17	.	1	0
1144	17010115015	2/9/43	Na Kam / Moh Luang	tik	5	4/4/2485	1	17	.	1	0
1152	1701016015	2/7/43	Na Kam / Moh Luang	tik	6	3/10/2505	1	17	.	1	0
1156	170107015	2/8/43	Na Kam / Moh Luang	tin	6	7/10/2510	2	12	.	1	0
1163	1701018015	2/8/43	Na Kam / Moh Luang	tik	5	3/6/2506	1	17	.	1	0
1168	1701019015	2/8/43	Na Kam / Moh Luang	tik	4	4/28/2507	2	17	.	1	0
1173	1701020015	2/9/43	Na Kam / Moh Luang	rai	3	3/15/2499	2	17	.	1	0
1182	1701022015	2/8/2543	Na Kam / Moh Luang	rai	5	11/27/2501	2	16	.	1	1
1185	1701023015	2/9/43	Na Kam / Moh Luang	tin	3	8/5/2512	1	17	.	1	0
1189	1701024015	2/8/43	Na Kam / Moh Luang	tin	4	1/1/2488	2	15	.	1	0
1194	1701025015	2/8/43	Na Kam / Moh Luang	tik	4	12/16/2505	2	16	.	1	0
1197	1701026015	2/8/43	Na Kam / Moh Luang	rai	6	1/1/2477	1	10	.	1	0
1201	1701027015	2/8/43	Na Kam / Moh Luang	jeab	5	6/19/2503	1	16	.	1	0
1209	1701028015	2/8/43	Na Kam / Moh Luang	rai	5	5/7/2506	2	12	.	1	0
1214	1701029015	2/8/43	Na Kam / Moh Luang	rai	4	1/3/2511	2	17	.	1	0
1223	1701031015	2/8/43	Na Kam / Moh Luang	tik	8	5/15/2516	2	17	.	1	0
1234	1704085015	2/8/2543	Na Kam / Moh Luang	jeab	5	1/17/2517	1	15	.	1	0
1247	1701036015	2/8/43	Na Kam / Moh Luang	rai	7	9/20/2511	2	16	.	1	0
1253	1701037015	2/8/43	Na Kam / Moh Luang	tin	5	1/27/2509	2	16	.	1	0
1264	1701081015	2/8/43	Na Kam / Moh Luang	tik	3	1/1/2472	2	17	.	1	1
1267	1701082015	2/8/2543	Na Kam / Moh Luang	tik	3	4/20/2504	1	10	.	1	0
1271	1702038015	2/10/43	Na Kam / Moh Luang	rai	1	9/17/2474	2	9	.	1	2
1286	1702041015	2/10/2543	Na Kam / Moh Luang	rai	4	2/7/2511	2	11	.	1	0
1292	1702043015	2/10/43	Na Kam / Moh Luang	opal	3	3/5/2499	2	5	.	1	0
1295	1702044015	2/10/43	Na Kam / Moh Luang	opal	1	1/1/2480	2	8	.	1	0

NaKam

HouseHoldID	QualityHealthC	EGATFair	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools
222	2	1	0	3	0	1	1	1	1	1	0	1.75	1	3	1
233	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
238	3	0	2	9	0	0	0	1	1	1	0	1.75	1	1	1
254	3	1	1	1	500	1	0	0	1	1	0	1.75	1	1	3
256	3	1	1	3	500	1	1	1	1	1	0	1.75	1	1	2
259	3	1	1	3	0	0	1	0	0	1	0	1.75	1	1	1
263	2	0	1	3	0	0	1	0	1	1	1	1.75	1	3	1
270	2	1	0	3	0	1	1	0	1	1	0	1.75	1	3	1
273	3	0	1	2	3000	1	1	1	1	1	1	1.75	1	1	1
277	1	0	0	7	0	1	1	0	1	1	0	1.75	1	3	1
279	3	1	0	3	0	1	1	0	1	1	0	1.75	1	1	1
284	2	0	0	3	0	1	1	0	1	1	0	1.75	1	1	1
289	1	0	0	7	0	1	0	0	1	1	0	1.75	1	3	1
292	1	1	0	7	0	0	1	0	1	1	1	1.75	1	3	1
293	3	0	0	3	0	1	0	0	1	1	0	1.75	1	3	3
1082	3	1	1	7	0	1	1	0	1	1	1	2.3	1	3	1
1112	3	1	1	7	0	1	1	0	1	1	0	7	1	1	1
1121	3	1	1	7	2000	1	1	1	1	1	0	1	1	3	3
1126	3	0	0	3	0	1	1	1	1	0	0	1	1	3	1
1135	1	1	1	7	0	1	1	0	1	1	0	0.2	1	1	1
1136	3	1	1	7	0	1	0	1	1	1	0	1	1	1	1
1141	3	1	1	3	0	1	0	1	1	1	1	2.11	1	1	1
1144	3	1	1	7	0	1	0	0	1	1	0	1	1	1	1
1152	1	0	0	7	0	1	1	0	1	1	0	1	1	2	1
1156	3	0	1	2	0	1	1	1	1	1	1	10	1	1	1
1163	1	0	2	7	0	1	0	1	1	1	0	1	1	1	3
1168	2	1	0	2	0	1	0	1	1	1	1	1	1	1	3
1173	3	1	0	3	0	1	1	1	1	1	1	1.25	1	1	1
1182	3	1	1	3	0	1	1	0	1	1	1	1.1	1	3	1
1185	3	1	1	1	0	1	0	1	1	1	0	0.2	1	1	1
1189	3	1	2	3	0	1	0	0	1	1	0	0.3	1	1	1
1194	1	1	0	7	0	1	1	0	1	1	0	1	1	1	1
1197	3	1	2	0	1	0	1	1	1	0	0	1	1	1	1
1203	3	0	0	7	0	1	1	1	1	1	0	1	1	3	1
1209	3	0	1	1	0	1	1	1	1	1	0	1.5	1	3	1
1214	3	1	0	3	0	1	1	0	1	1	0	4.1	1	3	2
1223	1	0	1	10	0	1	0	1	1	1	0	0.1	1	1	1
1234	3	0	0	3	0	1	0	0	0	1	0	0.2	1	3	1
1247	3	0	2	3	0	1	1	0	1	1	0	1	1	3	1
1253	3	0	0	3	0	1	1	0	1	1	0	0.1	1	1	1
1264	1	0	0	3	0	1	1	0	1	1	0	1	1	1	1
1267	3	0	0	7	0	1	0	1	1	1	0	0.1	1	1	1
1271	3	0	2	2	0	0	0	0	0	0	0	1.75	1	3	1
1286	3	1	0	7	0	1	1	1	1	1	1	0.25	1	3	1
1292	3	0	0	7	0	1	1	0	1	1	1	1.75	1	1	1
1295	3	1	0	2	2000	1	0	0	1	0	0	1.75	1	1	1

NaKam

HouseHoldID	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow	MorLesLand	CloseToJob	HouseBtrWrs	LivWithPpl	LivNearNbrs	HlpCrops
222	1	1	3	1	1	3	4	2	1	3	1	0	1
233	0	0	0	0	0	0	0	0	0	0	0	0	0
238	1	3	3	1	1	1	1	1	1	1	1	0	1
254	3	1	3	1	2	1	4	2	1	1	0	1	0
256	3	2	3	2	2	3	4	2	1	2	0	0	0
259	1	2	2	1	1	2	1	1	1	1	1	1	0
263	1	3	1	2	3	3	4	2	1	1	1	1	1
270	1	2	3	1	1	3	4	1	0	1	1	0	0
273	1	1	1	1	1	3	1	2	1	2	1	1	0
277	3	1	3	1	2	3	4	2	0	2	1	0	0
279	1	2	3	3	1	2	4	2	2	1	0	1	0
284	1	2	1	1	1	1	4	2	0	3	1	1	0
289	1	2	3	1	1	3	4	1	1	1	1	1	1
292	1	2	3	1	1	1	4	1	1	1	1	0	0
293	1	3	1	1	1	1	4	2	0	2	1	1	0
1002	3	1	1	1	1	1	1	2	1	1	1	1	1
1111	1	1	1	2	1	1	1	2	1	1	0	1	0
1121	3	1	3	1	2	2	3	1	1	1	1	1	0
1126	1	1	3	1	3	3	4	1	1	1	1	0	0
1135	1	1	1	1	2	1	3	2	0	1	1	0	0
1136	1	1	1	1	1	1	1	3	1	1	0	1	0
1141	1	1	1	1	1	1	4	2	1	1	0	1	1
1144	1	1	1	1	1	2	3	2	1	1	1	1	1
1152	1	1	1	2	3	3	1	2	0	1	0	0	0
1156	1	1	1	1	1	2	3	3	1	3	1	1	0
1163	1	1	1	1	1	1	4	2	1	3	1	0	0
1168	1	1	1	1	3	3	1	2	1	3	0	1	0
1173	1	1	1	1	1	3	3	1	2	1	1	1	1
1182	1	1	1	3	1	1	3	1	0	1	1	1	1
1185	1	1	1	1	3	1	1	3	1	1	0	0	0
1189	1	1	1	1	2	1	4	2	0	1	0	0	0
1194	1	1	1	1	1	3	4	1	0	3	1	0	0
1197	1	1	1	3	1	1	3	2	1	1	1	1	0
1203	1	1	3	1	1	1	4	2	0	3	1	0	0
1209	1	1	1	1	1	1	4	2	1	2	1	1	0
1214	2	1	1	2	1	3	4	2	1	2	0	0	1
1223	1	1	1	1	1	1	3	2	1	1	0	0	0
1234	1	1	1	2	2	2	4	2	0	2	1	0	0
1247	1	1	1	1	1	1	4	2	1	3	1	1	1
1253	1	1	1	3	2	1	3	1	1	3	0	0	0
1264	1	1	1	1	3	3	4	2	0	3	1	0	0
1267	1	1	1	1	1	3	3	2	0	3	1	0	0
1271	1	1	1	1	1	2	4	1	0	2	0	1	1
1286	1	1	1	1	2	1	4	2	0	1	1	0	0
1292	3	1	1	2	2	1	1	1	1	1	1	0	1
1295	1	1	1	1	3	2	4	1	0	1	1	1	1

NaKam

HouseHoldID	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor	Construction	CommGroups	VisitTemple	ComTempleAct	CommAct	Socialize
222	0	0	0	0	0	1	3	1	3	2	3	3
233	0	0	0	0	0	0	0	0	0	0	0	0
238	1	1	1	0	0	1	2	1	5	0	0	1
254	1	0	1	0	0	1	0	1	5	5	2	3
256	0	0	1	0	0	1	0	1	5	10	2	3
259	0	0	0	0	0	1	0	0	4	2	2	3
263	0	0	0	1	0	1	3	1	5	1	2	3
270	1	0	0	0	0	1	0	1	5	4	4	2
273	1	0	0	1	0	1	1	1	3	4	1	3
277	1	0	1	1	0	1	3	1	4	2	0	2
279	0	0	1	0	0	1	3	1	2	5	5	1
284	1	0	1	0	0	1	1	1	5	1	2	3
289	1	0	1	1	0	1	2	1	5	1	1	3
292	0	0	0	0	0	1	0	1	3	4	1	3
293	1	1	0	0	0	1	0	0	3	12	0	2
1082	1	0	0	0	0	1	0	1	4	4	2	3
1112	1	0	1	0	0	1	3	1	5	5	3	3
1121	1	0	0	0	0	1	0	1	4	5	6	3
1126	1	0	1	1	0	1	1	1	5	4	6	3
1135	1	0	0	10	0	1	3	1	0	5	3	3
1136	1	0	1	0	0	1	3	1	5	10	3	3
1141	1	0	0	0	0	1	0	1	1	5	2	3
1144	1	0	1	1	0	1	3	1	5	1	1	2
1152	1	1	1	1	1	1	3	1	0	1	0	1
1156	1	1	0	0	0	1	0	1	2	6	2	3
1163	1	0	1	1	0	1	3	1	4	1	1	3
1168	1	0	1	0	0	1	2	1	5	1	1	3
1173	0	0	0	0	0	1	3	1	4	3	3	3
1182	1	0	0	0	1	1	0	1	4	2	3	3
1185	0	0	0	0	0	1	3	1	5	4	2	1
1189	0	0	0	0	0	1	3	1	3	5	2	3
1194	1	0	1	0	0	1	3	1	5	1	0	3
1197	0	1	1	0	0	1	1	0	3	3	5	1
1203	0	0	0	0	0	1	0	0	0	3	4	3
1209	0	0	0	0	0	1	0	1	4	3	1	3
1214	1	1	0	0	0	1	1	0	5	5	3	3
1223	1	1	0	1	1	1	1	1	4	5	4	3
1234	0	0	0	0	0	1	1	1	5	0	1	3
1247	1	0	0	1	0	1	0	1	2	3	2	3
1253	0	0	0	0	0	1	3	1	2	5	3	3
1264	1	0	0	1	0	1	3	1	4	4	1	1
1267	1	0	1	1	0	1	2	1	4	5	5	3
1271	0	0	0	1	0	1	0	0	5	6	0	2
1286	0	0	0	0	0	1	1	1	4	3	3	3
1292	1	1	1	1	1	1	2	1	2	1	2	3
1295	1	1	1	1	1	1	1	1	5	0	5	1

NaKam

HouseHoldID	GovtFinSupprt	GovtTkConcrns	Happier	PreferStay	EGATSupport	EGATConcerns	EGATParticip	EGATOpinion
222	0	0	0	1	0	1	1	1
233	0	0	0	0	0	0	0	0
238	0	0	0	1	0	1	1	1
254	1	1	1	1	1	1	1	1
256	1	1	1	1	0	0	1	0
259	0	0	1	1	0	0	1	0
263	0	0	0	1	1	0	1	1
270	0	0	1	0	0	0	1	2
273	0	0	0	1	1	1	1	1
277	0	0	0	1	1	1	1	2
279	0	0	1	1	1	1	1	2
284	0	0	0	1	0	0	1	0
289	0	0	2	0	0	1	1	2
292	0	0	0	1	1	1	1	2
293	0	0	0	1	1	0	1	1
1082	0	0	1	0	1	1	1	1
1112	0	1	1	0	1	1	1	1
1121	2	2	0	0	1	0	1	2
1126	0	0	0	0	1	0	1	1
1135	0	1	1	1	1	1	1	1
1136	0	1	1	0	1	1	1	1
1141	1	0	1	1	1	1	1	1
1144	0	0	1	0	1	1	1	1
1152	0	0	1	1	0	0	1	1
1156	1	1	1	1	1	1	1	1
1163	0	0	2	1	0	1	1	0
1168	0	1	1	1	1	1	1	2
1173	1	1	1	0	1	1	1	1
1182	1	1	1	1	1	1	1	1
1185	0	1	1	0	1	0	1	2
1189	0	1	1	1	1	1	1	1
1194	2	1	2	0	1	1	1	1
1197	1	0	1	1	0	1	0	1
1203	2	2	0	1	0	0	1	0
1209	0	0	0	1	0	0	1	0
1214	1	0	0	1	1	1	1	2
1223	0	2	1	1	0	1	1	1
1234	2	2	0	1	1	1	1	2
1247	1	1	1	1	1	1	1	1
1253	1	1	1	0	1	0	1	1
1264	0	0	0	1	1	1	1	0
1267	0	0	2	1	1	0	1	0
1271	0	1	0	1	1	1	1	1
1286	0	0	2	0	0	1	0	1
1292	1	1	0	1	1	1	1	0
1295	1	1	1	0	1	1	1	2

NaKam

HouseHoldID	PersonID	Date	Village	Interviewer	PplInFamily	BDate	Gender	YrsInVlg	OldVlg	AccsToHealthC	HlthCareClos
1300	1704092015	2/10/43	Na Kam / Moh Luang	tik	3	3/2/2500	2	5		1	0
1302	1704091015	2/10/43	Na Kam / Moh Luang	opal	4	5/17/2511	2	8		1	0
1318	1702047015	2/10/43	Na Kam / Moh Luang	jeab	4	7/13/2510	2	8		1	0
1322	1702048015	2/11/2543	Na Kam / Moh Luang	Ray	8	4/1/2490	2	9		1	0
1327	1702049015	2/10/43	Na Kam / Moh Luang	tik	4	1/24/2508	2	8		1	0
1329	1702076015	2/11/43	Na Kam / Moh Luang	tin	5	4/9/2500	1	9		1	0
1341	172084015	2/10/43	Na Kam / Moh Luang	Rai	5	1/5/2508	2	9		1	0
1355	1702086015	2/10/43	Na Kam / Moh Luang	tin	5	9/22/2503	1	7		1	0
1363	1702088015	2/10/43	Na Kam / Moh Luang	opal	4	10/10/2512	2	8		1	0
1366	1702089015	2/10/2543	Na Kam / Moh Luang	tin	4	5/18/2500	1	9		1	0
1380	1702092015	2/11/43	Na Kam / Moh Luang	o'pal	4	11/16/2511	2	11		1	0
1394	1702095015	2/10/43	Na Kam / Moh Luang	jeab	5	11/1/2501	2	9		1	0
1398	1702096015	2/10/43	Na Kam / Moh Luang	tik	6	1/1/2487	2	8		1	0
1401	1702097015	2/10/43	Na Kam / Moh Luang	tik	7	7/9/2500	1	8		1	0
1407	1704093015	2/11/43	Na Kam / Moh Luang	jeab	4	1/25/2500	2	8		1	0
1410	1702098015	2/11/43	Na Kam / Moh Luang	jeab	4	12/5/2502	2	10		1	0
1491	1704059015	2/10/43	Na Kam / Moh Luang	opal	4	12/22/2522	2	17		1	0
1492	1704050015	2/9/43	Na Kam / Moh Luang	jeab	4	6/28/2503	1	16		1	0
1503	1704062015	2/10/43	Na Kam / Moh Luang	jeab	3	12/18/2493	1	17		1	0
1508	1704063015	2/10/43	Na Kam / Moh Luang	jeab	3	5/10/2472	2	17		1	0
1515	1704065015	2/10/43	Na Kam / Moh Luang	tin	4	5/10/2501	2	17		1	0
1520	1704066015	2/11/43	Na Kam / Moh Luang	tik	4	10/4/2505	2	17		1	0
1523	1704067015	2/11/43	Na Kam / Moh Luang	t52	4	10/25/2498	1	17		1	0
1527	1704068015	2/10/43	Na Kam / Moh Luang	tin	5	3/20/2498	1	15		1	0
1532	1704069015	2/10/43	Na Kam / Moh Luang	tik	2	7/20/2504	1	17		1	0
1565	1704075015	2/10/43	Na Kam / Moh Luang	rai	5	4/28/2505	2	18		1	0
1576	1702091015	2/10/43	Na Kam / Moh Luang	jeab	5	12/29/2507	2	9		1	0
1581	1704080015	2/9/43	Na Kam / Moh Luang	tik	5	7/17/2499	2	17		1	0
11001	1701030015	2/11/43	Na Kam / Moh Luang	rai	4	1/4/2503	2	10		1	0

NaKam

HouseHoldID	QualityHealthC	EGATFair	MreMoney	ChngOccu	MnySaved	TV	Radio	Stereo	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Drainage	Schools
1300	1	1	0	2	0	1	1	0	1	1	0	0.25	1	3	3
1302	3	1	0	7	0	1	1	1	1	1	0	1.75	1	3	1
1318	3	0	1	2	1700	1	1	1	1	1	1	1.75	1	1	1
1322	3	0	0	2	0	1	1	1	1	1	0	1.75	1	1	1
1327	1	1	0	7	0	1	0	1	1	1	1	0.5	1	3	1
1329	3	1	1	9	0	1	1	0	1	1	1	1.75	1	1	1
1341	3	0	2	6	0	1	0	1	1	1	0	0	1	1	2
1355	3	0	1	7	0	1	0	1	1	1	0	0.25	1	1	1
1363	3	1	1	2	0	1	0	1	1	1	0	1.75	1	3	1
1366	3	1	0	8	0	1	1	1	1	1	0	1.3	1	1	1
1380	3	0	1	2	0	1	1	0	1	1	1	0	1	1	1
1394	2	1	0	3	0	1	1	0	1	1	0	1.75	1	1	1
1398	1	1	0	7	0	1	1	0	0	0	0	1.75	1	3	3
1401	2	1	7	0	1	1	1	1	1	1	1	1.75	1	3	1
1407	3	1	0	7	0	1	1	1	1	1	0	1.75	1	1	1
1410	3	1	1	7	0	1	1	0	1	1	1	1.75	1	1	1
1491	3	1	1	6	0	1	1	0	1	1	1	0.5	1	3	1
1492	3	0	0	7	0	1	1	1	1	1	0	3.1	1	3	1
1503	1	0	7	0	0	0	0	0	1	0	0	0	1	1	1
1508	3	0	0	2	0	1	0	0	1	1	0	4	1	1	1
1515	3	0	0	3	0	1	0	1	0	1	0	3.3	1	1	1
1520	2	0	0	2	0	1	0	1	1	1	0	0.25	1	3	1
1523	3	0	2	10	5000	1	1	0	1	1	0	0.5	1	1	1
1527	3	0	1	3	1000	1	0	1	1	1	0	0.2	1	1	1
1532	1	1	1	7	0	0	1	0	1	1	0	0.25	1	1	1
1565	3	0	0	6	0	1	0	0	1	1	0	25.5	1	3	1
1576	3	1	1	2	2000	1	0	0	1	1	0	1.75	1	1	2
1581	2	0	2	7	0	1	0	1	1	1	0	0.75	1	2	2
11001	3	0	1	7	0	1	0	1	1	1	0	0.5	1	1	1

NaKam

HouseHoldID	Electricity	Market	Recreation	Temple	WaterQuality	AirQuality	CropsGrow	MorLesLand	CloseToJob	HouseBtrWrs	LivWithPpl	LivNearNbrs	HlpCrops
1300	3	1	1	1	3	3	3	1	1	1	1	0	0
1302	1	1	1	2	2	1	3	1	0	1	1	1	1
1318	3	1	1	1	1	1	4	1	0	1	1	0	0
1322	1	1	1	1	1	3	3	1	1	2	1	1	0
1327	1	1	1	2	1	1	4	2	0	1	1	0	1
1329	1	1	1	1	1	1	4	2	1	1	1	0	0
1341	3	1	1	2	1	3	4	1	0	1	1	1	1
1355	1	2	1	1	1	1	4	1	1	3	1	0	0
1363	3	1	1	3	2	3	3	1	1	3	1	1	1
1366	1	1	1	1	1	1	1	1	0	1	1	1	0
1380	1	1	1	1	1	1	2	1	1	2	1	1	0
1394	1	1	3	2	1	1	1	2	0	1	1	0	0
1398	3	1	1	1	1	1	4	1	0	1	1	0	0
1401	1	1	1	3	1	2	1	1	1	1	1	0	0
1407	1	1	1	1	1	3	4	2	1	1	1	1	0
1410	1	1	1	1	2	1	1	2	1	1	1	0	1
1491	1	1	1	1	2	1	3	3	1	2	0	0	1
1492	1	1	3	1	2	2	4	2	0	1	1	1	0
1503	1	1	1	1	1	1	1	2	0	1	0	1	0
1508	1	1	3	1	2	2	4	3	0	3	1	1	0
1515	1	1	1	3	2	1	4	1	0	1	0	1	0
1520	1	1	1	1	1	2	4	2	2	1	1	0	1
1523	1	1	1	1	3	1	4	1	0	1	1	1	1
1527	1	1	1	1	2	3	3	1	1	1	1	0	0
1532	1	1	1	1	1	1	1	2	0	1	1	0	0
1565	3	1	1	1	1	1	4	2	0	1	1	0	0
1576	1	1	1	1	1	1	1	3	0	3	1	1	0
1581	1	1	1	1	1	1	1	3	2	1	1	0	0
11001	1	1	1	1	1	1	1	2	1	1	0	0	1

NaKam

HouseHoldID	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor	Construction	CommGroups	VisitTemple	ComTempleAct	CommAct	Socialize
1300	1	0	1	1	0	1	1	1	5	0	1	3
1302	1	1	1	1	1	1	2	1	4	30	3	1
1318	1	0	1	0	0	1	0	1	5	3	5	3
1322	0	0	0	0	0	1	0	0	5	0	2	1
1327	1	0	1	1	0	1	1	1	5	1	1	1
1329	0	0	0	0	0	1	0	1	3	5	2	1
1341	0	0	0	0	0	1	0	0	5	3	0	3
1355	1	0	1	0	0	1	0	1	5	4	2	3
1363	1	1	1	1	1	1	2	1	5	2	4	3
1366	1	1	0	0	0	1	3	1	5	5	2	3
1380	0	0	0	0	0	1	0	1	4	5	5	3
1394	0	0	0	0	0	1	0	1	5	5	8	3
1398	1	0	0	0	0	1	3	1	5	2	2	3
1401	1	0	0	0	0	1	1	1	2	1	1	1
1407	0	0	0	0	0	1	1	1	5	0	3	3
1410	1	1	1	0	1	1	1	1	3	1	3	3
1491	1	0	1	0	1	1	1	1	0	2	5	3
1492	0	0	0	0	0	1	0	1	0	1	1	3
1503	1	0	0	0	0	1	3	0	0	0	1	3
1508	1	0	1	1	0	1	1	1	5	3	4	3
1515	0	0	0	0	0	1	3	1	2	10	5	3
1520	1	0	0	1	0	1	3	1	5	5	1	3
1523	1	0	1	1	0	1	1	1	5	4	1	3
1527	0	0	0	0	0	1	3	1	2	10	3	2
1532	1	0	1	0	0	1	3	1	5	1	2	2
1565	1	0	1	0	0	1	0	1	3	14	4	1
1576	0	0	0	0	0	1	1	1	2	4	10	3
1581	1	0	0	1	1	1	3	1	5	1	1	1
11001	1	1	0	0	0	1	3	1	2	5	3	2

NaKam

HouseHoldID	GovtFinSupprt	GovtTkConcrns	Happier	PreferStay	EGATSupport	EGATConcerns	EGATParticip	EGATOpinion
1300	0	0	0	0	1	1	1	1
1302	1	1	1	1	1	1	1	1
1318	0	1	1	0	0	1	1	0
1322	0	0	1	0	1	1	1	1
1327	1	0	2	1	0	1	1	1
1329	1	1	1	1	1	1	1	0
1341	0	0	2	0	0	0	1	2
1355	0	0	1	1	1	0	1	1
1363	1	1	1	1	1	1	1	1
1366	1	1	1	0	1	1	1	0
1380	0	0	2	1	0	1	1	1
1394	0	0	0	0	1	1	1	1
1398	1	0	1	0	1	0	1	0
1401	2	1	1	1	0	0	1	1
1407	0	2	1	0	1	1	1	1
1410	1	0	0	0	0	1	1	1
1491	1	1	1	1	1	1	1	1
1492	0	2	1	1	0	1	1	1
1503	1	1	0	0	0	0	1	2
1508	0	0	1	0	0	0	1	0
1515	1	1	1	0	1	1	1	0
1520	0	0	1	1	1	1	1	2
1523	0	0	2	1	1	1	1	1
1527	0	1	1	0	1	1	1	0
1532	0	0	1	1	1	1	1	1
1565	1	1	2	0	1	1	1	1
1576	0	1	1	0	1	1	1	1
1581	2	1	1	0	0	1	1	1
11001	1	1	1	0	1	1	1	2

NaKam

PersonID	HouseID	FairComments	CommGroupsComments
3	1101001015	EGAT gave enough money to build the house	
9	1101002015		funeral
12	1101044015	not own land no water for agriculture	funeral
16	1106068015	it's fair to receive money from EGAT	funeral
18	1101045015		
23	1101046015	EGAT gave enough money to move	housewife funeral
27	110147015		funeral
32	1101048015	EGAT gave enough money to move and buy the new land to build a house	funeral
37	1101050015		
40	1101051015	it's enough to have farmland	
47	1101052015	good facilities near the hospital	
50	1101053015	not own land	funeral
55	11010540	the old land was more than the new land EGAT gave money, but it's not enough to build houses	housewife
57	1101055015	too little money to build house	funeral
64	1102003015	Land is not his/her own land	funeral housewife volunteer
71	1102005015	EGAT gave enough money for the move and the land to build the house	housewife funeral
75	1102006015	EGAT gave enough money for move Now have more land for house than before	funeral
77	1102007015	EGAT gave enough money to move and land to build house	housewife funeral
81	1102008015		
94	1102011015		funeral
98	1102012015	did not receive enough money from EGAT and now land is expensive	agriculture bank
99	1102010015	Land is not his/her own land, cannot buy or sell	agriculture bank funeral housewife
101	1108013015	Land is not his/her own land	
105	1102014015	not enough money for house	
112	1102015015	receive the land to build the house	funeral
115	1102016015	received a little money; not enough for move, or for expenses	
120	1102017015	too little land for house none for farmland	

PersonID	EGATOpComments	AdditionalComments
3		
9		
12		
16		
18		
23		
27		
32		MnySaved: no response
37		
40		
47		
50		
55		
57		her husband works at EGAT
64		
71		
75		
77		
81		
94		
98		
99		
101		Happier: 2=same
105		
112		
115		
120		

NaKam

PersonID	HouseID	FairComments	CommGroupsComments
124	1102018015	received land to build house none for farmland	
128	1102019015	have same amount of land as past	
135	1102052015	Land is not his/her own land	funeral volunteer
138	1102053015		
143	1102054015		funeral
147	1102055015		funeral
150	1103020015	not own land	funeral
152	1106070015	Land is not his/her own land	housewife funeral
159	1103022015	EGAT gave enough money to buy land to build house	volunteer funeral
167	1103024015	not own land	funeral
171	1103025015	land is not her own	funeral youth
176	1103026015	received the money and the land to build the house	funeral
178	1103027015	EGAT gave them career training but didn't give them jobs.	volunteer funeral
187	1103029015	Land is not his/her own land	funeral
196	00000000000000 0000	none for farmland	funeral
197	1103032015	receives the land and too little money. Land is not her own	elders
198	1103031015	received the money and land to build house; light, and water	funeral
203	1103055015		
206	1103056015	land is not his own	funeral
222	1104032015		funeral volunteer
233	1104034015	and is not his/her own land	
238		Land is not his/her own land	funeral
254	1104037015	it's fair to receive money, land from EGAT	volunteer funeral housewife
256	1104038015	it's fair to receive money, land from EGAT	volunteer funeral
259	1104039015	it's fair to receive money from EGAT	
263	1104040015	Land is not his/her own land	volunteer
270	1104041015	it's fair to receive the money from EGAT	funeral housewife
273	1104042015	Land is not his/her own land	housewife

PersonID	EGATOpComments	AdditionalComments
124		
128		
135		
138		
143		
147		
150		
152		
159		
167		
171		
176		
178		
187		
196		
197		
198		
203		
206		
222		
233		
238		MreMoney: 2=same
254		
256		
259		
263		
270		
273		

NaKam

PersonID	HouseID	FairComments	CommGroupsComments
277	1104043015	none for farmland	funeral <input type="checkbox"/> housewife
279	1104058015		funeral
284	1104056015	received too little land, and land is not her own (can't sell or buy)	Housewife <input type="checkbox"/> funeral
289	1104060015	Land is not his/her own land	housewife <input type="checkbox"/> funeral
292	1104061015		funeral
293	1104062015	Land is not his/her own land	
1082	1701001015	comfortable	housewife
1112	1701008015	it's fair to receive money from EGAT	funeral <input type="checkbox"/> volunteer
1121	1701010015	no problem	funeral <input type="checkbox"/> housewife
1126	1701011015	none for farmland	funeral <input type="checkbox"/> housewife
1135	1701012015	it's fair to receive money from EGAT	funeral
1136	1701013015	its' fair to receive money from EGAT	housewife <input type="checkbox"/> volunteer <input type="checkbox"/> funeral
1141	1701014015	it's fair to receive money from EGAT	housewife
1144	17010115015	comfortable	funeral
1152	1701016015	land is not his own land	funeral
1156	170107015	none for farmland	funeral
1163	1701018015	none for farmland	funeral
1168	1701019015	it's fair to receive money from trees	funeral <input type="checkbox"/> housewife
1173	1701020015	it's fair to receive money from EGAT	housewife
1182	1701022015	a lot of pollution in the old village because near EGAT	housewife
1185	1701023015	it's fair to receive money from EGAT	housewife <input type="checkbox"/> volunteer <input type="checkbox"/> funeral
1189	1701024015	it's fair to receive money from EGAT	housewife <input type="checkbox"/> funeral
1194	1701025015		funeral
1197	1701026015	comfortable	
1203	1701027015	none for farmland. Too little money for house	
1209	1701028015	none for farmland	housewife
1214	1701029015	it's fair to receive money from EGAT	

PersonID	EGATOpComments	AdditionalComments
277		
279		CloseToJob: 2=same
284		
289		
292		
293		
1082		
1112		MnySaved: no response
1121		GovFinSupport: no comment GovTkConcrns: no comment
1126		
1135		MnySaved: no response
1136		MnySaved: no response
1141		
1144		
1152		
1156		MnySaved: no response
1163		
1168		
1173		
1182		
1185		MnySaved: no response
1189		MreMoney: 2=same
1194		GovFinSupport: no comment Happier: 2=same
1197		
1203		
1209		
1214		

NaKam

PersonID	HouseID	FairComments	CommGroupsComments
1223	1701031015	land is not her own none for farmland	member of the village housewife
1234	1704085015	None for farmland. Too little money for house	funeral
1247	1701036015	none for farmland	housewife
1253	1701037015		housewife funeral
1264	1701081015	none for farmland. Land is not her own	elders funeral
1267	1701082015	land is not his own land none for farmland	funeral
1271	1702038015	Land is not his/her own land	
1286	1702041015	received more land than previously owned	housewife funeral
1292	1702043015	Water is dirty, necessary to buy water. Lights are expensive. Received more land than before	funeral
1295	1702044015		funeral
1300	1704092015		funeral
1302	1704091015		volunteer funeral
1318	1702047015	none for farmland	funeral housewife agriculture bank
1322	1702048015	too little money for house land is not her own	
1327	1702049015	Enough money from EGAT	funeral
1329	1702076015	it's fair to receive money from EGAT	housewives, funeral
1341	172084015	Land is not his/her own land	
1355	1702086015	EGAT didn't follow the contract regarding the land	funeral
1363	1702088015		funeral
1366	1702089015	EGAT gave enough money for move and the have the land on which to build houses	housewife funeral agriculture bank
1380	1702092015	has to pay everything, and more expensive than old village	housewife
1394	1702095015	OK	funeral housewife agriculture bank
1398	1702096015		funeral

NaKam

PersonID	EGATOpComments	AdditionalComments
1223		
1234		
1247		MreMoney: 2=same? Not translated.
1253		MnySave: no response
1264		
1267		
1271		MreMoney: 2=same
1286		Happier: 2=same
1292		No money
1295		
1300		
1302		
1318		
1322	EGAT give scholarship to children	
1327		Happier: 2=same
1329		
1341		MreMoney: 2=same AmountLand: no answer Happier: 2=same
1355		
1363		
1366		MnySaved: no response
1380		AmtLand: stays with her mother Happier: 2=same
1394		
1398		

NaKam

PersonID	HouseID	FairComments	CommGroupsComments
1401	1702097015		funeral agriculture bank
1407	1704093015	it's fair to receive money, land from EGAT	funeral
1410	1702098015	good facilities	housewives funeral agriculture bank
1491	1704059015		funeral
1492	1704060015	none for farmland	funeral
1503	1704062015	not enough money for house	
1508	1704063015	too little money to build house not enough money for house	funeral
1515	1704065015	her husband was forced to retire by EGAT	housewife funeral
1520	1704066015	doesn't have chanod document	funeral housewife
1523	1704067015	because he doesn't have chanod document	funeral housewives
1527	1704068015	not own land	agriculture bank funeral
1532	1704069015	It's fair to receive money from EGAT	funeral
1565	1704075015	none for farmland	housewife funeral
1576	1702091015	comfortable	funeral
1581	1704080015	not enough money for house	housewife funeral
11001	1701030015	Land is not his/her own land	housewife funeral

NaKam

PersonID	EGATOpComments	AdditionalComments
1401		GovtFinSupport: 2=no comment
1407		
1410		
1491		
1492		GovTkConcrns: 2=no comment
1503		
1508		
1515		MnySaved: no response
1520		CloseToJob: 2=middle
1523		
1527		
1532		
1565		Happier: 2=same
1576		
1581		MreMoney: 2=same CloseToJob: 2=same GovFinSupport: 2=no comment
11001		

Appendix P
Analysis Tables of Moh Luang/Nakam Data

Unless otherwise noted, all tables are given in question, response choice, number of responses, and percentage of respondents

HEALTH & HEALTHCARE

AccsToHealthC	0	2	2%
AccsToHealthC	1	119	98%
HlthCareClos	0	111	92%
HlthCareClos	1	8	7%
HlthCareClos	2	2	2%
QualityHealthC	1	29	24%
QualityHealthC	2	12	10%
QualityHealthC	3	80	66%

Source: Present Study

asymp1	0	81	72%
asymp1	1	31	28%
asymp2	0	70	63%
asymp2	1	42	38%
asymp3	0	74	66%
asymp3	1	38	34%
asymp4	0	83	74%
asymp4	1	29	26%
asymp5	0	87	78%
asymp5	1	25	22%
asymp6	0	80	71%
asymp6	1	32	29%
asymp7	0	90	80%
asymp7	1	22	20%
asymp8	0	92	82%
asymp8	1	20	18%
asymp9	0	80	71%
asymp9	1	32	29%
asymp10	0	106	95%
asymp10	1	6	5%
asymp11	0	55	49%
asymp11	1	57	51%
asymp12	0	112	100%
asymp13	0	97	87%
asymp13	1	15	13%
asymp14	0	112	100%

Source: Dr. Nunatavarn's Study from 1997

ECONOMICS

asalary	0	38	34%
asalary	3600	1	1%
asalary	4800	1	1%
asalary	5280	1	1%
asalary	12000	2	2%
asalary	12600	1	1%
asalary	14400	1	1%
asalary	16080	1	1%
asalary	18000	5	4%
asalary	19200	1	1%
asalary	21600	1	1%
asalary	22000	1	1%
asalary	24000	6	5%
asalary	28800	2	2%
asalary	30000	2	2%
asalary	36000	17	15%
asalary	42000	2	2%
asalary	43200	2	2%
asalary	45600	1	1%
asalary	48000	4	4%
asalary	52600	1	1%
asalary	54000	3	3%
asalary	57600	1	1%
asalary	60000	2	2%
asalary	64800	1	1%
asalary	66000	1	1%
asalary	72000	2	2%
asalary	84000	2	2%
asalary	85200	1	1%
asalary	108000	1	1%
asalary	114000	1	1%
asalary	144000	1	1%
asalary	156000	1	1%
asalary	173640	1	1%
asalary	176000	1	1%
asalary	293400	1	1%
asalary	516000	1	1%

Sources: Dr. Nuntavarn's Study from 1997

aoccup	0	2	2%
aoccup	1	36	32%
aoccup	2	1	1%
aoccup	8	4	4%
aoccup	16	14	13%
aoccup	22	1	1%
aoccup	28	1	1%
aoccup	32	33	29%
aoccup	64	5	4%
aoccup	128	5	4%
aoccup	256	9	8%
aoccup	333	1	1%

aedu	0	2	2%
aedu	1	21	19%
aedu	2	76	68%
aedu	3	11	10%
aedu	4	1	1%
aedu	5	1	1%

Source: Dr. Nuntavarn's Study from 1997

MreMoney	0	68	56%
MreMoney	1	41	34%
MreMoney	2	10	8%
MreMoney	7	2	2%

Source: Present Study

ChngOccu	0	5	4%
ChngOccu	1	4	3%
ChngOccu	2	19	16%
ChngOccu	3	38	31%
ChngOccu	6	3	2%
ChngOccu	7	42	35%
ChngOccu	8	2	2%
ChngOccu	9	6	5%
ChngOccu	10	2	2%

Source: Present Study

Tv	0	16	13%
Tv	1	105	87%
Stereo	0	65	54%
Stereo	1	56	46%
Radio	0	54	45%
Radio	1	67	55%
Refrigerator	0	12	10%
Refrigerator	1	109	90%
Motorcycle	0	15	12%
Motorcycle	1	105	87%
Motorcycle	11	1	1%
Auto	0	97	80%
Auto	1	24	20%

Source: Present Study

INFRASTRUCTURE

Roads	0	3	2%
Roads	1	116	96%
Roads	2	1	1%
Roads	3	1	1%
Drainage	0	3	2%
Drainage	1	68	56%
Drainage	2	4	3%
Drainage	3	46	38%
Schools	0	3	2%
Schools	1	97	80%
Schools	2	10	8%
Schools	3	11	9%
Electricity	0	3	2%
Electricity	1	87	72%
Electricity	2	4	3%
Electricity	3	27	22%
Market	0	2	2%
Market	1	72	60%
Market	2	37	31%
Market	3	10	8%
Recreation	0	2	2%
Recreation	1	76	63%
Recreation	2	7	6%
Recreation	3	36	30%
Temple	0	2	2%
Temple	1	76	63%
Temple	2	28	23%
Temple	3	15	12%

Source: Present Study

WaterQuality	0	1	1%
WaterQuality	1	73	60%
WaterQuality	2	32	26%
WaterQuality	3	15	12%
AirQuality	0	1	1%
AirQuality	1	58	48%
AirQuality	2	22	18%
AirQuality	3	40	33%
CropsGrow	0	1	1%
CropsGrow	1	32	26%
CropsGrow	2	1	1%
CropsGrow	3	24	20%
CropsGrow	4	63	52%
MorLesLand	0	1	1%
MorLesLand	1	45	37%
MorLesLand	2	67	55%
MorLesLand	3	8	7%
CloseToJob	0	61	50%
CloseToJob	1	56	46%
CloseToJob	2	4	3%

HouseBtrWrs	0	1	1%
HouseBtrWrs	1	73	60%
HouseBtrWrs	2	23	19%
HouseBtrWrs	3	24	20%

Source: Present Study

SOCIAL CULTURE

LivWithPpl	0	28	23%
LivWithPpl	1	93	77%
LivNearNbrs	0	63	52%
LivNearNbrs	1	58	48%

Source: Present Study

HlpCrops	0	89	74%
HlpCrops	1	32	26%
HlpCook	0	46	38%
HlpCook	1	75	62%
HlpClean	0	97	80%
HlpClean	1	24	20%
HlpRepair	0	78	64%
HlpRepair	1	43	36%
HlpChildCare	0	79	65%
HlpChildCare	1	42	35%
HlpLivestock	0	100	83%
HlpLivestock	1	21	17%

Source: Present Study

Construction	0	48	40%
Construction	1	34	28%
Construction	2	10	8%
Construction	3	29	24%
CommGroups	0	24	20%
CommGroups	1	97	80%

Source: Present Study

VisitTemple	0	12	10%
VisitTemple	1	1	1%
VisitTemple	2	17	14%
VisitTemple	3	12	10%
VisitTemple	4	16	13%
VisitTemple	5	62	51%
VisitTemple	6	1	1%

Source: Present Study

Appendix Q
Complete Survey Results
For Na Sak and Mae Luang

NaSak

PersonID	HouseID	Date	Village	Interviewer	NbrPplInFamily	BDate	Gender	YrsInVlg	OldVlg	AccsToHealthC	HlthCareClose
2471	???	2/9/2543	Na Sak / Mae Luang	Boy	5	2/3/2470	2	73		1	1
3850	3401001015	2/7/2543	Na Sak / Mae Luang	Toe	5	2/27/2511	2	32		1	0
3853	3401002015	2/7/2543	Na Sak / Mae Luang	Boy	4	1/1/2495	1	17		1	0
3857	3401003015	2/7/2543	Na Sak / Mae Luang	Jim	3	3/3/2494	2	47		1	0
3860	3401004015	2/7/2543	Na Sak / Mae Luang	Aod	4	7/29/2502	1	41		1	1
3865	3401005015	2/7/2543	Na Sak / Mae Luang	Toe	4	6/12/2509	2	33		1	0
3868	341006015	2/7/2543	Na Sak / Mae Luang	Toe	3	5/7/2502	1	41		1	0
3873	3402007015	2/6/2543	Na Sak / Mae Luang	Tony	3	9/7/2515	2	30		1	0
3877	3402008015	2/6/2543	Na Sak / Mae Luang	Toe	4	8/5/2511	2	13		1	0
3881	3402003015	2/6/2543	Na Sak / Mae Luang	Jim	6	1/28/2508	2	35		1	0
3886	3402010015	2/6/2543	Na Sak / Mae Luang	Boy	4	10/1/2491	2	51		1	1
3892	3402011015	2/6/2543	Na Sak / Mae Luang	Aod	4	7/14/2509	2	33		1	1
3897	3402012015	2/6/2543	Na Sak / Mae Luang	Toe	4	10/26/2517	2	25		1	0
3901	3402013015	2/6/2543	Na Sak / Mae Luang	Jim	4	12/28/2513	2	30		1	0
3906	3402014015	2/6/2543	Na Sak / Mae Luang	Boy	6	11/21/2501	2	41		1	0
3915	3402077015	2/6/2543	Na Sak / Mae Luang	Tong	6	1/1/2473	2	70		1	1
3922	342017015	2/6/2543	Na Sak / Mae Luang	Boy	4	1/15/2503	2	40		1	1
3930	3402079015	2/6/2543	Na Sak / Mae Luang	Jim	2	5/8/2505	2	38		1	0
3934	3402020075	2/6/2543	Na Sak / Mae Luang	Jim	5	3/7/2504	2	39		1	1
3939	3403021015	2/5/2543	Na Sak / Mae Luang	Toe	6	4/8/2494	1	45		1	1
3945	3403022015	2/5/2543	Na Sak / Mae Luang	Toe	4	1/1/2485	1	54		1	1
3948	3403023015	2/5/2543	Na Sak / Mae Luang	Tong	5	6/4/2503	2	40		1	1
3954	3403024015	2/5/2543	Na Sak / Mae Luang	Jim	6	6/29/2503	2	40		1	1
3958	3403025015	2/5/2543	Na Sak / Mae Luang	Aod	6	5/27/2500	1	42		1	1
3962	3402018015	2/6/2543	Na Sak / Mae Luang	Aod	4	5/1/2504	2	16		1	0
3963	3403026015	2/5/43	Na Sak / Mae Luang	Boy	4	4/1/2503	1	11		1	1
3968	3404027075	2/5/2543	Na Sak / Mae Luang	Tong	3	4/1/2501	2	41		1	1
3972	344058015	2/5/2543	Na Sak / Mae Luang	Aod	4	6/13/2507	2	1		1	1
3975	3404029015	2/5/2543	Na Sak / Mae Luang	Toe	4	1/1/2510	1	33		1	0
3987	3404032015	2/5/2543	Na Sak / Mae Luang	Boy	3	1/1/2491	2	51		1	1
3997	3405034015	2/5/2543	Na Sak / Mae Luang	Tony	4	3/14/2510	2	33		1	0
4001	3405035015	2/5/2543	Na Sak / Mae Luang	Jim	5	3/15/2506	2	37		1	1
4006	345036015	2/5/2543	Na Sak / Mae Luang	Toe	4	5/22/2507	2	11		1	1
4010	3405037015	2/7/2543	Na Sak / Mae Luang	Aod	4	2/25/2507	2	36		1	0
4014	3405038015	2/7/2543	Na Sak / Mae Luang	Toe	4	4/27/2505	2	15		1	0
4017	345039015	2/7/2543	Na Sak / Mae Luang	Boy	2	3/30/2500	2	42		1	1
4019	345040015	2/6/2543	Na Sak / Mae Luang	Jim	4	8/4/2510	2	33		1	1
4029	3406042015	2/7/2543	Na Sak / Mae Luang	Tong	4	5/9/2513	2	29		1	0
4033	3406043015	2/6/2543	Na Sak / Mae Luang	Jim	5	1/1/2496	2	47		1	0
4049	3406045015	2/6/2543	Na Sak / Mae Luang	Aod	5	9/5/2504	2	39		1	0
4054	3406046015	2/6/2543	Na Sak / Mae Luang	Jim	7	5/4/2508	2	35		1	0
4058	3406047075	2/6/2543	Na Sak / Mae Luang	Jim	4	12/17/2543	2	38		1	0
4062	3406048015	2/6/2543	Na Sak / Mae Luang	Jim	4	6/1/2499	2	44		1	1
4064	3406045015	2/6/2543	Na Sak / Mae Luang	Toe	6	4/1/2477	2	50		1	0
4069	3406049075	2/6/2543	Na Sak / Mae Luang	Boy	6	9/18/2510	2	33		1	1
4072	3406050015	2/6/2543	Na Sak / Mae Luang	Toe	5	1/1/2463	1	61		1	1

NaSak

PersonID	QualHealthC	MnySaved	TV	Radio	Stereo	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Water	Drainage	Schools	Electricity	Market	Recreation
2471	1	0	0	0	0	0	0	0	1	1	0		0	0	1	1
3850	2	300	0	0	0	1	0	0	3	1	2	0	2	2	2	2
3853	2	0	1	0	0	1	1	0	3.5	2	2	0	1	1	2	1
3857	1	0	1	1	0	1	1	0	6	1	0	0	1	1	0	1
3860	1	0	1	1	1	1	1	0	13.25	1	2	0	1	1	0	2
3865	1	0	1	1	0	1	1	0	4	2	0		2	2	0	2
3868	2	0	1	0	0	1	1	0	8.5	1	2	0	2	2	0	2
3873	1	0	1	0	0	1	1	0	0	1	2	0	1	1	0	0
3877	2	1000	1	1	0	1	0	0	3.5	2	2	0	2	2	0	2
3881	1	0	1	1	0	1	0	0	2.5	1	2	0	1	1	2	2
3886	2	0	1	0	0	1	0	0	8	1	2	0	2	2	1	1
3892	2	0	1	0	0	1	1	0	2.25	1	2		2	2	2	2
3897	2	500	1	1	0	1	0	0	5.5	2	2	0	1	2	0	1
3901	2	0	1	0	0	1	1	0	0.097	2	2	0	2	2	2	3
3906	2	0	1	1	0	1	1	0	5	2	0	0	2	2	0	2
3915	1	0	1	0	0	1	1	0	9.25	2	2	0	1	1	0	1
3922	2	0	0	1	0	0	0	0	0	1	2	0	2	2	2	1
3930	1	0	1	0	0	0	0	0	1	1	2		1	1	1	2
3934	2	0	1	0	0	0	0	0	3	2	2		2	2	1	0
3939	3	0	0	1	0	0	1	0	1.5	2	2	0	2	2	2	2
3945	3		1	0	0	0	0	0	1	2	2		2	2	2	1
3948	2	0	1	0	0	1	1	0	8.5	0	0		1	0	0	1
3954	1	0	1	0	0	1	1	0	0	1	0	0	1	2	1	0
3958	1	0	1	0	0	0	1	0	2.75	0	2	0	2	2	2	2
3962	1	0	1	0	1	1	1	1	1.5	2	0		2	2	1	2
3963	2	0	0	0	0	0	0	0	2	2	1	0	1	1	0	1
3968	1	0	1	0	1	1	1	0		0	1		1	2	2	0
3972	2	0	1	0	0	1	1	0	3	1	0	0	2	2	2	2
3975	3		1	1	0	1	1	0	3	2	2		2	2	1	1
3987	2	0	1	1	1	1	0	0	8.5	2	2	0	2	2	1	2
3997	2	0	1	0	1	1	1	0	11	2	1	0	1	1	2	1
4001	1	0	1	0	0	1	0	0	7.77	1	0	0	1	2	1	1
4006	2	900	1	0	0	0	0	0	2	1	1	0	1	2	1	2
4010	1	0	1	0	1	1	1	1	5.25	2	1	0	1	2	2	1
4014	2	0	1	1	0	1	0	0	3	2	2	0	2	2	2	2
4017	2	0	1	1	0	1	0	0	1.48	1	1	0	1	1	1	1
4019	1	0	1	1	0	1	1	0	5	2	1	0	1	2	1	1
4029	0	1200	1	1	0	1	1	0	4.375	1	1		1	1	2	2
4033	1	3000	1	1	1	1	1	1	12	0	2		1	2	1	2
4049	1	0	1	0	1	1	1	0	1.5	1	0	0	1	2	0	2
4054	1	0	1	1	1	1	1	1	16.25	2	2		1	1	1	1
4058	1	0	1	1	0	0	0	0	4.25	2	2		1	2	1	1
4062	1	0	1	1	0	1	0	1	16.25	2	2		2	2	1	1
4064	1	0	1	1	0	1	1	0	12.75	1	2	0	2	2	1	1
4069	0	0	1	1	1	0	0	0	2	1	1	0	2	1	2	1
4072	1	200	1	0	0	1	1	0	9.75	1	2		2	1	1	1

NaSak

PersonID	Temple	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor	Construction	CommGroups	VisitTemple	ComTempleAct
2471	2	1	1	0	1	0	0	1	2	1	5	2
3850	2	1	1	1	1	1	0	1	0	1	5	8
3853	1	0	1	0	0	0	0	1	3	1	5	2
3857	1	1	1	1	1	1	0	1	3	1	5	4
3860	2	1	1	1	1	1	1	1	3	1	5	3
3865	2	1	1	1	1	0	0	1	0	1	5	8
3868	3	1	1	1	1	0	0	1	1	0	3	7
3873	2	1	1	0	1	1	1	1	1	1	5	3
3877	2	1	1	1	1	0	0	1	0	1	5	8
3881	2	1	1	0	0	1	1	1	3	1	5	1
3886	2	1	1	0	1	1	1	1	3	1	5	2
3892	2	1	0	1	1	1	0	1	3	1	5	3
3897	2	1	1	1	0	1	0	1	0	1	5	4
3901	2	1	1	1	1	1	1	1	3	1	5	2
3906	1	1	1	0	1	1	1	1	3	1	2	6
3915	2	1	1	0	1	1	1	1	2	1	5	6
3922	2	1	1	0	0	0	0	1	1	1	3	2
3930	2	1	1	1	0	0	1	1	1	1	5	2
3934	2	0	1	1	1	0	1	1	3	1	5	10
3939	2	0	1	1	1	0	1	1	0	1	5	1
3945	2	1	0	1	1	0	0	1	0	1	5	4
3948	1	1	1	0	1	1	1	1	3	1	5	6
3954	1	1	1	1	1	0	1	1	3	1	5	3
3958	0	1	1	1	1	0	0	3	0	0	5	3
3962	2	1	1	1	1	1	0	1	1	1	5	2
3963	1	1	1	1	1	1	0	1	3	1	2	5
3968	2	0	1	0	1	1	0	1	3	0	5	6
3972	2	1	0	1	1	1	0	1	1	1	5	1
3975	2	0	0	1	1	1	1	1	1	1	5	8
3987	2	0	1	1	0	0	0	1	2	1	2	15
3997	2	1	1	0	1	1	1	1	3	1	5	3
4001	1	1	1	0	1	1	1	1	3	1	5	2
4006	3	1	1	1	1	0	0	1	1	1	4	4
4010	1	1	1	1	1	1	0	1	1	1	5	1
4014	3	1	1	1	0	1	0	1	0	1	3	9
4017	2	0	1	0	0	1	0	1	3	1	5	1
4019	1	1	0	1	1	1	0	1	3	1	5	4
4029	1	1	1	0	1	1	1	1	3	1	5	10
4033	2	1	1	1	1	1	1	1	3	1	5	4
4049	2	1	1	1	1	0	0	1	1	1	5	3
4054	1	1	1	1	0	0	0	1	3	1	1	10
4058	2	1	1	0	0	1	1	1	3	1	5	3
4062	1	1	1	1	1	1	0	1	3	1	5	3
4064	2	1	1	0	0	1	0	1	0	1	3	8
4069	2	1	0	0	1	1	0	1	3	1	2	1
4072	2	0	0	1	1	1	0	1	0	1	4	8

NaSak

PersonID	CelebrateHidys	CommAct	Socialize	GovtFinSupport	GovtTkConcrns	EGATSupport	EGATConcrns	EGATParticip	EGATOpinion
2471	0	1	2	0	1	1	1	1	1
3850	3	1	2	1	1	1	1	1	1
3853	2	5	2	0	0	1	1	1	1
3857	3	1	3	0	1	0	1	1	1
3860	2	1	2	0	0	1	1	1	0
3865	1	1	2	0	0	1	1	1	1
3868	3	1	3	1	1	0	1	1	1
3873	1	16	3	1	0	1	0	1	2
3877	3	1	2	0	1	1	1	1	1
3881	1	1	1	0	1	1	1	1	1
3886	2	2	2	1	1	1	1	1	1
3892	1	1	3	1	1	1	1	1	1
3897	1	1	2	0	0	0	1	1	1
3901	3	2	3	0	1	0	1	1	1
3906	3	20	2	1	1	1	1	1	0
3915	2	15	3	1	1	1	1	1	1
3922	2	1	2	1	1	1	1	1	1
3930	1	1	2	0	1	1	0	1	1
3934	1	1	1	1	1	1	0	1	1
3939	0	1	3	0	0	1	1	1	1
3945	2	0	2	0	1	1	1	1	1
3948	3	15	1	1	1	1	1	1	1
3954	0	2	2	0	1	1	1	1	1
3958	3	1	2	0	1	1	1	1	1
3962	1	1	3	0	1	1	1	1	1
3963	3	6	2	0	1	1	1	1	2
3968	1	2	2	0	0	1	1	1	2
3972	0	1	2	0	1	1	1	1	1
3975	2	1	3	1	1	1	1	1	1
3987	0	1	1	1	1	1	1	1	1
3997	2	6	3	0	1	1	1	1	1
4001	3	1	2	0	1	1	1	1	1
4006	1	1	2	1	0	1	0	1	2
4010	1	1	3	0	1	1	0	1	2
4014	1	1	2	0	1	1	0	1	1
4017	1	1	2	1	1	1	1	1	1
4019	3	1	1	1	1	1	1	1	1
4029	3	15	3	0	1	0	1	1	2
4033	0	1	1	0	1	1	1	1	2
4049	1	0	3	0	0	1	0	1	1
4054	3	5	2	0	1	0	1	1	0
4058	0	1	1	0	1	0	1	1	1
4062	0	1	3	0	0	0	1	1	0
4064	3	0	2	0	0	0	0	1	2
4069	2	2	2	1	1	1	1	1	1
4072	1	1	2	0	0	1	0	1	1

NaSak

PersonID	HouseID	Date	Village	Interviewer	NbrPplInFamily	BDate	Gender	YrsInVlg	OldVlg	AccsToHealthC	HlthCareClose
4082	3406051015	2/6/2543	Na Sak / Mae Luang	Boy	7	9/16/2472	2	31		1	1
4088	3406052015	2/6/2543	Na Sak / Mae Luang	Tong	4	7/5/2504	2	39		1	1
4092	3406053075	2/6/2543	Na Sak / Mae Luang	Tong	3	4/2/2503	2	13		1	1
4095	3406054015	2/7/2543	Na Sak / Mae Luang	Tong	4	12/19/2506	2	32		1	0
4099	3406055015	2/6/2543	Na Sak / Mae Luang	Aod	6	9/9/2500	2	42		1	1
4104	3406056015	2/6/2543	Na Sak / Mae Luang	Tony	7	1/1/2478	2	65		1	1
4111	3402083015	2/6/2543	Na Sak / Mae Luang	Boy	6	7/22/2499	1	44		1	0
4115	3406058015	2/6/2543	Na Sak / Mae Luang	Tong	4	1/6/2511	2	32		1	0
4118	3406059015	2/6/2543	Na Sak / Mae Luang	Boy	4	3/7/2510	1	33		1	0
4125	3406060015	2/6/2543	Na Sak / Mae Luang	Toe	5	1/1/2474	1	68		1	1
4128	3406061075	2/6/2543	Na Sak / Mae Luang	Toe	6	1/22/2512	2	31		1	1
4132	3402079015	2/6/2543	Na Sak / Mae Luang	Aod	5	10/8/2519	1	23		1	0
4133	3407062015	2/5/2543	Na Sak / Mae Luang	Toe	4	11/15/2506	1	10		1	1
4141	3407064015	2/9/2543	Na Sak / Mae Luang	Toe	3	4/3/2506	1	17		1	0
4146	3407065015	2/5/2543	Na Sak / Mae Luang	Jim	4	1/1/2507	2	16		1	0
4148	3407066075	2/5/2543	Na Sak / Mae Luang	Aod	3	8/6/2505	1	16		1	0
4151	3407066015	2/5/2543	Na Sak / Mae Luang	Toe	5	10/20/2499	1	15		1	1
4157	3407068015	2/5/2543	Na Sak / Mae Luang	Boy	4	6/22/2505	2	38		1	0
4168	347070015	2/5/2543	Na Sak / Mae Luang	Boy	4	9/21/2517	1	26		1	1
4173	3407071015	2/5/2543	Na Sak / Mae Luang	Tony	4	4/4/2504	1	39		1	0
4177	3407072015	2/5/2543	Na Sak / Mae Luang	Boy	1	1/1/2477	1	76		1	1
4180	3407073015	2/5/2543	Na Sak / Mae Luang	Tong	7	6/4/2504	2	39		1	1
4185	3407074015	2/5/2543	Na Sak / Mae Luang	Aod	4	1/1/2478	2	65		1	0
4191	3407075075	2/5/2543	Na Sak / Mae Luang	Jim	4	6/4/2508	2	35		1	1
4195	3407076015	2/5/2543	Na Sak / Mae Luang	Jim	4	1/1/2498	2	15		1	0
4701	3402081015	2/6/2543	Na Sak / Mae Luang	Aod	3	12/20/2511	1	1	Sobjang	1	0
4791	3701001015	2/9/2543	Na Sak / Mae Luang	Toe	4	1/20/2505	2	20		1	0
4794	3701002015	2/9/2543	Na Sak / Mae Luang	Toe	4	4/15/2510	2	32		1	0
4798	3701003045	2/9/2543	Na Sak / Mae Luang	Toe	5	1/1/2502	2	41		1	0
4803	3101004075	2/9/2543	Na Sak / Mae Luang	Boy	4	2/13/2510	2	20		1	0
4807	3701005015	2/9/2543	Na Sak / Mae Luang	Tong	4	8/12/2514	2	18		1	0
4810	3701006015	2/9/2543	Na Sak / Mae Luang	Aod	4	6/15/2500	1	42		1	0
4814	37001007015	2/10/2543	Na Sak / Mae Luang	Boy	2	8/13/2498	1	45		1	0
4818	3701008075	2/9/2543	Na Sak / Mae Luang	Toe	4	8/25/2505	1	18		1	0
4823	3101009015	2/9/2543	Na Sak / Mae Luang	Boy	4	9/17/2510	2	10		1	1
4827	3701010015	2/9/2543	Na Sak / Mae Luang	Tong	4	11/17/2509	2	15		1	0
4834	3701012015	2/8/2543	Na Sak / Mae Luang	Aod	5	5/6/2504	2	39		1	1
4837	3701077075	2/9/2543	Na Sak / Mae Luang	Boy	2	4/17/2509	2	8		1	0
4838	3701013015	2/8/2543	Na Sak / Mae Luang	Aod	4	11/18/2490	1	52		1	0
4841	3701014015	2/8/2543	Na Sak / Mae Luang	Toe	4	11/8/2503	1	16		1	0
4845	3701015015	2/10/2543	Na Sak / Mae Luang	Toe	3	12/12/2482	1	30		1	0
4851	3701016015	2/9/2543	Na Sak / Mae Luang	Aod	4	3/8/2512	2	32		1	0
4858	3702018015	2/8/2543	Na Sak / Mae Luang	Boy	4	6/15/2498	1	10		1	0
4863	3702019015	2/8/2543	Na Sak / Mae Luang	Aod	5	6/19/2504	2	39		1	1
4868	3702020015	2/8/2543	Na Sak / Mae Luang	Toe	5	1/16/2512	2	30		1	0
4874	3702021015	2/8/2543	Na Sak / Mae Luang	Jim	4	2/13/2505	2	38		1	1

NaSak

PersonID	QualHealthC	MnySaved	TV	Radio	Stereo	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Water	Drainage	Schools	Electricity	Market	Recreation
4082	2	0	1	0	1	1	1	0	5	1	2	0	1	1	0	1
4088	1	0	1	1	0	1	1	0	2	1	2	0	1	1	2	1
4092	2	0	1	1	0	1	1	0	1	1	1	0	1	1	0	1
4095	1	0	1	1	0	1	1	0	0.25	1	2		1	1	1	1
4099	2	0	1	1	1	1	1	1	0.5	2	1		2	2	1	2
4104	1	0	1	0	0	1	1	0	15.5	2	2	0	2	1	2	1
4111	2	0	1	0	1	1	0	1	0	1	2	0	2	1	1	1
4115	1	0	1	0	1	1	1	0	2	1	2	0	1	1	2	1
4118	2	0	0	0	0	0	0	0	0	1	2	0	2	1	1	1
4125	1	0	1	0	1	1	0	0	2.017	1	2		1	2	1	1
4128	1	0	1	0	0	1	0	0	3	1	1		1	1	1	1
4132	1	0	1	1	0	1	1	0	0.75	1	2		2	2	1	1
4133	2	1500	1	1	0	1	1	0	5	0	1	0	2	2	0	0
4141	2	2000	1	1	0	1	1	0	7	1	2		2	2	2	2
4146	2	0	1	0	1	1	1	0	7	1	2		2	2	2	2
4148	1	0	0	1	0	0	0	1	5	2	2		2	1	1	2
4151	2	2000	1	0	0	1	1	1	12	2	1	0	2	1	1	1
4157	2	0	0	0	0	0	0	0	0	2	1	0	2	2	1	2
4168	1	0	1	0	1	1	1	0	10	2	2	0	2	2	1	2
4173	1	0	1	1	0	1	1	0	0	1	1	0	2	3	1	2
4177	2	0	0	0	0	0	0	0	0	2	2		2	2	1	2
4180	1	0	1	0	0	0	0	0	3.75	2	2	0	1	2	1	0
4185	3	0	1	1	1	1	0	0	22	2	1	0	2	2	1	1
4191	2	0	1	0	1	1	1	0	7.03	2	2		2	2	2	2
4195	1	500	1	1	1	1	1	0	8.5	1	2		2	2	0	2
4701	2	0	1	0	1	1	1	0	1	0	0		2	1	1	2
4791	2	50	1	1	1	1	1	0	10.75	0	0		1	2	0	2
4794	2	100	1	1	1	1	1	1	8	0	2		2	3	0	2
4798	2	0	1	1	0	1	1	1	10	1	1		2	2	0	2
4803	2	0	1	1	0	1	1	1	0	1	0		2	2	1	1
4807	2	12000	1	0	1	1	1	0	7	0	0		0	2	1	2
4810	1	0	1	1	0	1	1	1	28	1	1		0	2	0	1
4814	2	0	1	0	1	1	1	0	0	2	2		2	2	1	1
4818	1	0	1	1	1	1	1	0	12	1	0		0	2	0	0
4823	2	0	1	1	1	1	1	0	7	2	0		1	2	1	1
4827	1	30000	1	0	1	1	1	1	14	1	2		1	2	1	1
4834	2	0	1	1	0	1	1	0	2.25	0	1	0	2	1	1	1
4837	1	0	1	0	1	1	1	0	6.5	2	1		2	2	2	1
4838	1	0	1	1	0	1	1	0	5.75	0	1	0	2	2	1	2
4841	1	1000	1	1	1	1	1	0	7	1	2	0	2	3	0	2
4845	2	0	1	1	1	1	1	1	17	2	2	0	3	2	0	2
4851	2	0	1	1	1	1	1	0	7	1	1		2	2	1	1
4858	2	0	1	1	0	1	0	0	1	1	2	0	2	1	2	1
4863	2	0	1	1	1	1	1	1	3.25	0	1		2	1	1	1
4868	2	200	1	1	1	1	1	0	4.5	2	2	6	2	2	0	2
4874	2	0	1	1	0	1	1	1	6.5	0	1	0	1	2	1	1

NaSak

PersonID	Temple	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor	Construction	CommGroups	VisitTemple	ComTempleAct
4082	2	1	1	0	1	1	0	1	3	1	2	3
4088	2	1	1	1	1	1	1	1	3	1	5	6
4092	1	1	1	0	1	1	1	1	3	1	5	5
4095	2	0	1	1	1	1	0	1	3	1	5	10
4099	2	0	1	1	1	1	1	1	1	1	5	1
4104	1	1	1	0	1	1	1	1	3	1	1	4
4111	2	1	1	0	1	1	0	1	3	1	2	3
4115	2	1	1	0	1	1	1	1	3	1	5	6
4118	2	1	1	0	1	1	0	1	3	1	3	3
4125	2	0	1	1	1	1	1	0	0	1	2	8
4128	1	1	0	1	1	1	0	1	0	1	5	8
4132	1	1	1	1	1	1	1	1	1	0	5	3
4133	2	1	1	1	1	0	1	1	1	0	0	0
4141	2	1	1	1	1	1	0	1	1	0	4	6
4146	2	1	1	1	0	0	0	1	3	1	5	1
4148	1	1	1	1	1	0	1	1	1	0	0	3
4151	1	1	1	1	1	1	1	1	2	0	5	5
4157	2	1	1	0	0	1	0	1	3	1	3	12
4168	2	1	1	0	0	1	0	1	1	1	3	36
4173	2	0	0	0	1	1	1	1	0	1	5	11
4177	2	0	0	0	0	0	0	1	3	1	3	10
4180	0	0	0	0	1	1	1	1	0	1	5	1
4185	1	1	1	1	1	1	1	1	1	1	5	3
4191	2	1	1	0	0	1	1	1	3	1	5	2
4195	1	0	1	0	0	1	0	1	3	1	5	2
4701	2	1	1	1	1	0	0	1	3	0	5	4
4791	3	1	1	1	1	0	1	1	2	1	5	3
4794	2	1	1	1	0	0	0	1	1	1	3	9
4798	3	1	1	0	0	1	0	1	1	1	5	3
4803	2	1	1	0	1	1	0	1	3	1	5	2
4807	2	1	1	1	1	1	1	1	3	1	4	1
4810	2	1	1	1	1	1	1	1	1	1	5	2
4814	2	0	0	0	1	0	0	1	3	1	5	1
4818	1	1	1	1	1	0	1	1	3	1	5	3
4823	2	1	1	0	1	1	0	1	3	1	5	2
4827	0	1	0	0	1	1	1	1	3	1	5	1
4834	1	1	1	1	1	1	0	1	0	1	5	1
4837	2	1	1	0	1	1	0	1	3	1	5	2
4838	1	1	1	1	1	1	0	1	3	1	5	2
4841	2	1	0	1	0	0	1	1	3	1	1	2
4845	2	1	1	1	1	1	1	1	3	1	2	3
4851	1	1	1	1	1	1	1	1	3	1	5	1
4858	2	1	1	0	0	1	1	1	3	1	5	2
4863	1	1	1	1	1	0	0	1	0	1	5	1
4868	2	1	1	1	0	0	0	1	1	0	2	5
4874	1	1	1	0	1	1	0	1	3	1	5	2

NaSak

PersonID	CelebrateHldys	CommAct	Socialize	GovtFinSupport	GovtTkConcrns	EGATSupport	EGATConcrns	EGATParticip	EGATOpinion
4082	3	1	2	0	0	0	0	0	2
4088	3	20	2	1	1	0	0	1	2
4092	2	15	3	1	0	1	0	1	2
4095	2	3	2	1	1	1	1	1	1
4099	3	1	1	0	1	1	1	1	1
4104	2	15	3	1	1	1	1	1	1
4111	2	3	2	1	1	1	1	1	1
4115	0	15	3	1	0	1	0	1	2
4118	1	1	2	1	1	1	1	1	1
4125	3	0	2	0	0	0	0	1	2
4128	1	1	3	0	0	0	1	1	1
4132	1	3	3	0	1	1	0	1	1
4133	3	3	3	0	0	0	1	1	0
4141	2	8	2	1	1	1	1	1	1
4146	0	1	2	0	1	1	1	1	1
4148	3	1	2	0	1	1	1	1	2
4151	3	1	1	0	0	1	1	1	1
4157	2	20	3	1	1	1	1	1	1
4168	1	1	2	1	1	1	1	1	1
4173	0	15	3	0	1	1	0	1	1
4177	2	3	2	1	1	1	1	1	1
4180	0	17	3	1	1	1	1	1	0
4185	1	0	2	1	1	1	1	1	1
4191	0	1	3	1	1	1	1	1	1
4195	1	2	2	0	1	1	1	1	1
4701	1	0	3	0	1	1	1	1	1
4791	2	1	3	0	0	1	0	1	0
4794	3	1	3	1	1	0	1	1	1
4798	3	1	2	1	1	0	1	1	1
4803	2	1	2	0	0	1	1	1	1
4807	3	15	2	1	1	1	1	1	1
4810	1	1	2	0	0	1	1	1	1
4814	2	10	2	1	1	1	1	1	1
4818	2	0	2	1	1	1	1	1	1
4823	3	2	2	0	1	1	1	1	1
4827	3	15	3	0	0	0	1	1	2
4834	1	1	3	0	0	1	0	1	1
4837	3	1	2	0	1	1	1	1	1
4838	1	1	3	0	1	1	1	1	1
4841	3	1	3	0	0	0	0	1	1
4845	3	1	2	0	1	1	1	1	1
4851	1	1	2	0	0	0	0	1	2
4858	2	2	2	0	1	1	1	1	1
4863	3	1	3	0	0	1	0	1	2
4868	3	1	3	1	1	1	1	1	1
4874	1	1	3	0	1	0	1	1	1

NaSak

PersonID	HouseID	Date	Village	Interviewer	NbrPplInFamily	BDate	Gender	YrsInVlg	OldVlg	AccsToHealthC	HlthCareClose
4876	3702022015	2/8/2543	Na Sak / Mae Luang	Toe	4	3/15/2501	2	18		1	0
4880	3702023015	2/8/2543	Na Sak / Mae Luang	Toe	4	4/17/2508	2	32		1	0
4884	3702024015	2/8/2543	Na Sak / Mae Luang	Boy	3	11/16/2502	2	40		1	1
4887	3702025015	2/8/2543	Na Sak / Mae Luang	Toe	4	2/28/2497	1	12		1	0
4893	3702026015	2/8/2543	Na Sak / Mae Luang	Tong	6	10/25/2543	2	14		1	0
4896	3702027015	2/8/2543	Na Sak / Mae Luang	Aod	4	8/15/2513	2	30		1	1
4902	3702028015	2/8/2543	Na Sak / Mae Luang	Toe	5	5/5/2502	2	41		1	0
4908	3702029015	2/8/2543	Na Sak / Mae Luang	Toe	5	5/26/2505	1	10		1	1
4913	3708030015	2/8/2543	Na Sak / Mae Luang	Boy	5	6/9/2506	2	32		1	0
4918	3702031015	2/11/2543	Na Sak / Mae Luang	Tong	4	8/12/2512	2	31		1	0
4921	3702032015	2/11/2543	Na Sak / Mae Luang	Tong	2	2/18/2492	2	51		1	1
4926	3702033025	2/8/2543	Na Sak / Mae Luang	Tong	4	1/1/2500	2	43		1	0
4929	3702034015	2/8/2543	Na Sak / Mae Luang	Aod	4	4/5/2499	2	44		1	1
4939	3702035015	2/8/2543	Na Sak / Mae Luang	Jim	6	4/5/2484	2	59		1	0
4940	3702036015	2/8/2543	Na Sak / Mae Luang	Boy	3	6/12/2504	1	39		1	1
4943	3702037015	2/8/2543	Na Sak / Mae Luang	Jim	5	9/5/2505	1	38		1	1
4944	3702037015	2/8/2543	Na Sak / Mae Luang	Tong	5	1/10/2507	2	36		1	0
4948	3702038015	2/6/2543	Na Sak / Mae Luang	Jim	4	8/9/257	2	13		1	1
4953	3702039015	2/8/2543	Na Sak / Mae Luang	Aod	4	10/11/2501	2	41		1	0
4961	3702040015	2/11/2543	Na Sak / Mae Luang	Tong	4	1/1/2512	1	30		1	1
4964	3702041015	2/8/2543	Na Sak / Mae Luang	Jim	3	6/6/2508	2	35		1	1
4967	3702042015	2/8/2543	Na Sak / Mae Luang	Tong	4	5/20/2502	1	20		1	0
4978	3703044015	2/9/2543	Na Sak / Mae Luang	Boy	5	1/4/2507	2	10		1	0
4984	3703045015	2/9/2543	Na Sak / Mae Luang	Tong	3	1/1/2495	2	48		1	0
4988	3703046015	2/11/2543	Na Sak / Mae Luang	Toe	4	4/22/2499	1	22		1	0
4992	3703047015	2/11/2543	Na Sak / Mae Luang	Aod	3	9/8/2484	1	58		1	0
4996	3703069015	2/9/2543	Na Sak / Mae Luang	Toe	4	10/3/2510	2	32		1	1
4999	3703048015	2/10/2543	Na Sak / Mae Luang	Boy	5	1/1/2503	2	40		1	0
5004	3703049015	2/9/2543	Na Sak / Mae Luang	Toe	4	6/30/2506	2	7		1	1
5009	3703050015	2/10/2543	Na Sak / Mae Luang	Boy	6	3/7/2499	2	20		1	1
5014	3703051015	2/10/2543	Na Sak / Mae Luang	Boy	3	12/15/2505	2	37		1	0
5017	3703052015	2/9/2543	Na Sak / Mae Luang	Aod	4	2/19/2505	2	38		1	1
5020	3703053015	2/10/2543	Na Sak / Mae Luang	Aod	4	10/3/2501	1	41		1	0
5025	3703054075	2/10/2543	Na Sak / Mae Luang	Toa	4	4/7/2510	2	7		1	1
5029	3703055015	2/10/2543	Na Sak / Mae Luang	Aod	5	9/5/2512	2	30		1	1
5033	3703056015	2/9/2543	Na Sak / Mae Luang	Tong	4	3/11/2572	2	31		1	0
5036	3703057015	2/9/2543	Na Sak / Mae Luang	Tong	4	1/8/2504	2	16		1	0
5040	3703058015	2/9/2543	Na Sak / Mae Luang	Aod	5	9/8/2498	1	44		1	1
5049	3703059075	2/11/2543	Na Sak / Mae Luang	Toe	5	8/27/2503	1	39		1	1
5055	3703070015	2/11/2543	Na Sak / Mae Luang	Aod	2	7/10/2489	2	59		1	1
5058	3703062015	2/10/2543	Na Sak / Mae Luang	Aod	3	5/12/2507	2	35		1	1
5060	3703063015	2/9/2543	Na Sak / Mae Luang	Toe	3	10/6/2475	1	66		1	1
5067	3703064015	2/10/2543	Na Sak / Mae Luang	Tong	4	10/5/2510	2	33		1	0
5070	3703065015	2/10/2543	Na Sak / Mae Luang	Tong	3	7/1/2496	1	25		1	0
5076	3703066015	2/10/2543	Na Sak / Mae Luang	Tong	4	1/1/2499	2	42		1	1

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PersonID	QualHealthC	MnySaved	TV	Radio	Stereo	Refridgerator	Motorcycle	Auto	AmountLand	Roads	Water	Drainage	Schools	Electricity	Market	Recreation
4876	3	0	1	1	1	1	1	0	2.25	1	0	0	2	2	0	1
4880	1	0	1	1	1	1	1	0	3.25	2	2	0	2	2	0	2
4884	2	800	1	0	1	1	1	0	0.5	0	1	0	1	0	1	1
4887	2	300	0	0	0	1	1	0	7	1	1	0	2	2	0	1
4893	1	590	1	0	1	1	1	0	10.25	1	2	0	1	1	1	2
4896	1	0	1	1	0	1	1	0	2.25	1	1	0	2	2	0	2
4902	2	0	1	0	1	1	1	0	3.5	0	0	0	2	2	0	1
4908	2	0	1	0	0	0	0	0	0.5	1	2		1	1	1	2
4913	2	0	1	0	1	1	1	0	0.75	1	1	0	2	2	2	1
4918	1	0	1	1	0	0	1	0	0.25	1	1		0	2	1	1
4921	2	0	1	0	1	1	1	0	18.75	2	1		1	2	1	1
4926	1	0	1	0	0	1	1	0	30.375	0	0	0	2	2	1	2
4929	2	0	1	0	0	1	1	0	2.75	2	2		2	1	1	2
4939	2	500	1	1	0	1	1	0	4.75	2	2	2	2	2	2	2
4940	1	0	1	0	1	1	1	1	0.5	1	2		1	1	1	1
4943	1	600	1	1	0	1	1	0	4.5	1	1	0	2	2	2	2
4944	1	0	1	1	0	1	1	0	0	1	1	0	1	1	2	2
4948	1	0	1	0	1	1	1	0	9.25	1	1	0	1	1	1	1
4953	2	0	1	1	1	1	1	1	5.5	0	0	0	2	2	0	1
4961	1	0	1	1	0	0	0	0	0	1	1	0	2	1	1	2
4964	1	0	1	0	1	1	1	0	1.5	0	0	0	1	2	1	1
4967	2	0	1	0	1	1	1	0	0	0	0	0	2	1	1	2
4978	2	0	1	1	1	1	1	0	2.5	1	0	0	2	2	1	1
4984	1	500	1	0	0	1	1	0	20.5	0	0	0	1	1	0	1
4988	2	500	1	1	1	1	1	0	9	0	0	0	2	2	1	2
4992	2	0	1	0	0	1	1	0	3.75	0	2	0	2	2	0	2
4996	2	0	0	0	0	0	1	0	2.25	0	2		2	2	0	2
4999	2	1000	1	0	0	1	1	1	10.75	2	2		1	2	1	1
5004	2	0	1	1	0	0	0	0	0.25	2	1		2	2	0	2
5009	2	0	1	0	1	1	1	0	0	2	2	0	2	2	1	1
5014	1	300	1	1	0	1	1	1	0	1	2	0	1	1	1	1
5017	1	0	1	1	1	1	1	0	8.5	0	1		1	2	0	0
5020	1	3000	1	0	1	1	1	1	17.75	0	0	0	1	2	0	2
5025	1	10	1	0	1	1	1	1	1.25	0	1	0	1	3	0	1
5029	2	0	1	1	1	1	1	0	3.5	1	1	0	2	2	1	1
5033	1	0	1	0	1	1	1	0	3.25	1	1	0	1	2	1	1
5036	1	0	1	1	0	1	1	0	10.25	0	1	0	1	1	1	1
5040	2	0	1	0	1	1	1	1	9.75	2	2		2	2	0	1
5049	2	0	1	0	0	1	1	0	7	2	2	0	2	2	0	2
5055	2	0	0	0	0	0	0	0	1.5	0	1	0	2	2	2	1
5058	1	0	1	1	0	1	1	1	5.25	0	0	0	1	1	0	0
5060	1	0	1	1	0	1	1	1	11.25	1	1	0	2	2	0	3
5067	1	0	1	0	1	0	1	0	7	1	2		1	2	0	1
5070	1	0	1	1	0	1	1	0	3	0	1		1	2	0	1
5076	1	0	0	0	0	0	1	0	4	1	0		1	1	0	1

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PersonID	Temple	HlpCrops	HlpCook	HlpClean	HlpRepair	HlpChildCare	HlpLivestock	HlpComChor	Construction	CommGroups	VisitTemple	ComTempleAct
4876	2	1	1	1	1	0	0	1	0	1	3	1
4880	1	1	1	1	0	1	0	1	2	1	4	3
4884	1	1	1	0	1	1	0	1	3	1	5	2
4887	2	1	1	1	0	0	0	1	1	1	5	3
4893	2	1	1	0	1	1	1	1	3	1	5	2
4896	1	1	1	1	1	1	1	1	3	1	5	3
4902	2	1	1	1	0	0	0	1	1	1	5	1
4908	2	1	1	1	1	0	0	1	1	0	4	2
4913	2	1	1	0	1	1	0	1	3	1	5	4
4918	0	1	1	0	1	1	1	1	3	1	5	2
4921	0	1	0	0	1	1	1	1	3	1	2	3
4926	2	0	0	0	1	1	0	1	3	1	5	1
4929	2	0	0	1	0	0	1	0	1	1	5	0
4939	2	0	0	1	1	0	0	1	3	1	5	2
4940	2	1	1	0	1	0	1	1	3	1	3	3
4943	2	0	1	1	1	0	0	1	3	1	5	2
4944	0	1	1	0	1	1	1	1	3	1	5	4
4948	1	1	1	1	1	0	1	1	3	1	0	3
4953	0	1	1	0	1	1	1	1	0	1	5	2
4961	2	1	1	0	1	1	1	1	3	1	0	1
4964	1	1	0	1	1	1	1	1	3	1	5	2
4967	0	1	1	0	1	1	1	1	3	1	0	2
4978	2	1	1	0	1	1	0	1	3	1	5	1
4984	2	1	0	0	1	1	0	1	3	1	5	1
4988	0	1	1	0	1	1	1	1	1	1	4	3
4992	2	1	1	1	1	1	0	1	3	0	5	2
4996	2	1	1	1	1	1	1	1	1	0	5	2
4999	2	0	1	0	0	1	0	1	3	1	5	1
5004	2	1	0	0	1	1	0	1	1	1	5	0
5009	2	0	1	0	0	1	0	1	3	1	3	2
5014	2	1	1	0	0	1	1	1	3	1	5	2
5017	1	1	1	1	1	1	0	1	3	1	5	3
5020	0	0	1	1	1	0	0	1	3	1	5	2
5025	1	1	0	0	0	0	0	1	1	0	4	1
5029	2	1	1	1	0	1	1	1	3	1	5	5
5033	2	1	0	0	1	1	1	1	3	1	5	1
5036	2	1	0	0	1	1	1	1	3	1	5	1
5040	1	1	1	1	1	1	0	1	3	0	5	1
5049	2	1	1	0	1	0	0	1	3	1	2	3
5055	2	0	1	0	1	1	0	1	0	0	5	0
5058	0	1	1	1	1	1	0	1	0	1	5	2
5060	3	1	1	0	1	0	0	1	0	1	5	3
5067	1	1	1	0	1	1	1	1	3	1	5	1
5070	0	1	0	0	1	1	1	1	3	1	5	1
5076	1	0	0	0	1	1	1	1	3	1	5	1

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PersonID	CelebrateHldys	CommAct	Socialize	GovtFinSupport	GovtTkConcrns	EGATSupport	EGATConcrns	EGATParticip	EGATOpinion
4876	0	1	2	0	0	1	1	1	2
4880	0	1	3	1	1	0	0	1	1
4884	1	10	2	0	0	1	1	1	1
4887	1	1	1	1	1	1	1	1	1
4893	3	10	3	1	1	1	1	1	1
4896	3	1	2	0	0	1	0	1	1
4902	0	1	2	0	0	0	1	1	1
4908	0	0	3	0	0	1	1	1	1
4913	2	2	2	0	1	1	1	1	1
4918	3	15	3	0	1	1	1	1	2
4921	3	20	2	0	1	0	1	1	1
4926	2	10	3	1	1	1	0	1	1
4929	0	1	1	0	0	0	0		1
4939	0	1	1	0	1	0	1	0	1
4940	2	2	2	1	1	1	1	1	1
4943	0	1	2	0	1	0	1	1	1
4944	3	20	3	0	0	1	1	1	1
4948	3	2	3	0	1	1	1	1	1
4953	1	1	2	0	1	1	0	1	2
4961	3	15	3	1	1	1	1	1	2
4964	3	1	3	0	1	1	1	1	1
4967	3	20	2	0	0	0	1	1	2
4978	2	1	2	0	1	1	1	1	1
4984	0	6	2	0	0	1	1	1	1
4988	3	0	3	1	1	1	1	1	1
4992	0	0	1	0	0	0	0	1	1
4996	3	0	3	1	0	1	0	1	0
4999	2	10	2	1	1	1	1	1	1
5004	2	0	3	0	1	1	0	1	0
5009	2	10	2	0	1	1	1	1	1
5014	2	13	2	0	1	1	0	1	1
5017	1	1	1	0	0	0	0	1	2
5020	1	1	2	0	1	1	1	1	1
5025	1	0	2	1	1	1	1	1	1
5029	3	1	2	0	0	0	0	1	2
5033	1	10	2	1	0	1	1	1	1
5036	1	10	2	1	0	1	1	1	2
5040	3		3	1	0	1	1	1	1
5049	2	0	3	0	1	1	1	1	1
5055	0	0	2	1	0	1	0	1	2
5058	2	1	2	0	0	0	1	0	2
5060	2	1	2	0	0	1	1	1	1
5067	2	10	3	0	1	1	1	1	1
5070	2	15	3	0	0	1	1	1	2
5076	3	15	3	1	0	1	1	1	1

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ID	HouseID	GroupsComments	HolidaysComments	AddComments
2471	0	Housewives group and funeral group.		
3850	3401001015	Housewives' group	With neighbor, relatives	
3853	3401002015	Housewives' group, funeral group, saving housewife group, agriculture group	With neighbor at home	
3857	3401003015	Funeral group	With friend at home, and at friend's house	Negative because of sulfur dioxide
3860	3401004015	Funeral group Agriculture group	With friend and family at home and friend's house	She wants EGAT to change about sulfur dioxide
3865	3401005015	Housewife's group.	With neighbors and child and husband.	
3868	341006015		With neighbor, wife and child	
3873	3402007015	Housewives' group Saving housewife bank group Funeral group	At neighbor's house	Use family land.
3877	3402008015	Saving housewife bank group Housewives' group	With neighbor, child, husband and relatives	
3881	3402003015	Housewives' group Funeral group	With neighbor, relatives at home or at neighbor's house	
3886	3402010015	Housewives group	At neighbor's house.	
3892	3402011015	Housewives and funeral group	With family and neighbors at home or a friend's home.	
3897	3402012015	Saving housewife bank group Volunteer group	With father, mother, younger sister	
3901	3402013015	Housewives Savings Bank, Volunteer group, funeral group and housewife's group.	With neighbors and family at home or a friend's house.	
3906	3402014015	Housewives' group Saving housewife bank group Funeral group	With neighbor at home	
3915	3402077015	Housewives' group Saving group Fneral group	At friend's house	CommAct: New year, wedding, paba
3922	342017015	Funeral group	With friend at home	No land for agriculture
3930	3402079015	Funeral Group	With neighbors at their home.	
3934	3402020075	Housewives and funeral groups.	With neighbors at home or a friend's house.	
3939	3403021015	Funeral group		
3945	3403022015	Funeral Group	With Friends	
3948	3403023015	Housewives and Housewife's Savings Bank groups.	With neighbors at home.	Community activities 15 times per year: New Years, Weddings, Funerals, Sport's Day...
3954	3403024015	Funeral group		Most people in Mae Moh don't have jobs and they want jobs from EGAT
3958	3403025015		With friends at friend's house	
3962	3402018015	Housewife's group.	With family and neighbors at home or at a friend's house.	

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3963	3403026015	Housewives' group Funeral group Saving housewife bank groups		
3968	3404027075		At friend's house	Participate in community activities: Sports Day and Papa (2 times per year).
3972	344058015	Housewives' group Funeral group		
3975	3404029015	Hierarchy group (maybe aubotol???)	With friends.	Egat sometimes participates.
3987	3404032015	Funeral group		
3997	3405034015	Housewives' group Funeral group Saving housewife bank group	With neighbor at home	
4001	3405035015	Housewives' group Saving housewife bank group Funeral group	With friend, family at friend's house and at home	
4006	345036015	Housewives' group Funeral group	With relatives, husband, friends.	CommAct: Sport's day (only wives), EGAT does not take care enough such as health.
4010	3405037015	Funeral group Agriculture group	With friend and family at home and at friend's house	
4014	3405038015	Housewives' group	With friend, neighbor, relatives	
4017	345039015	Funeral group Housewives' group	With neighbor at friend's house	
4019	345040015	Housewives' group Funeral group	With family at home	Both positive and negative; positive because EGAT can help and support everything. Negative because of sulfur dioxide
4029	3406042015	Housewife's Savings Bank, Housewife's group, funeral group.	With neighbors at home. 15 times per year (new years, funerals, papa, weddings...)	
4033	3406043015	Housewife's and funeral groups.		I have a negative opinion of EGAT because they release the sulphur dioxide. However, they do give a comfortable environment.
4049	3406045015	Housewife's and Funeral groups.	With neighbors and relatives at home.	
4054	3406046015	Housewife's group and funeral group.	With relatives at home	
4058	3406047075	Housewife's group, funeral group.		
4062	3406048015	Housewife's group		
4064	3406045015	Funeral group Elders group	With niece or nephew and friend	
4069	3406049075	Funeral group.	With neighbor at home	
4072	3406050015	Funeral Group and Elder's group.	With friends and relatives.	
4082	3406051015	Housewife's savings bank, funeral group.	With neighbor's at home	

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4088	3406052015	Housewife's savings bank, housewife's group, funeral group.	with neighbor's at home	
4092	3406053075	Housewife's group, funeral group.	With neighbor at home.	
4095	3406054015	Housewife's group, funeral group.	At neighbor's house.	
4099	3406055015	Housewife's group	With family and neighbors at home.	
4104	3406056015	Funeral group Saving housewife bank group	With neighbor at home	CommAct: wedding, funeral, paba
4111	3402083015	Funeral group.	With neighbors at home.	
4115	3406058015	Housewife's and funeral groups.		
4118	3406059015	Funeral group	With neighbors at home	They use land owned by the entire family;
4125	3406060015	Elder's and funeral groups.	With relatives, neighbors and niece or nephew.	EGAT SOMETIMES participates.
4128	3406061075	Community Groups	With children, husband and mother.	
4132	3402079015		With friends and family at home.	
4133	3407062015		With friend and wife	Does not participate in ComTemActs
4141	3407064015		With friends and wife.	
4146	3407065015	Housewife's group, Agriculture Bank Group, Housewife's Savings Bank group		
4148	3407066075		With a friend at the temple or friend's house.	Respondant works for EGAT.
4151	3407066015		With friend and wife	
4157	3407068015	Funeral group Housewives' group	With neighbor at home	Mother's land
4168	347070015	Youth group	With friend at home	
4173	3407071015	Housewives' group Funeral group		
4177	3407072015	Funeral Group.	With friends	
4180	3407073015	Housewives' group Funeral group		CommAct: Funeral, paba, sport, housewarming
4185	3407074015	Housewives' group Elders group	With neighbor at home	Can't go to CommAct because she's too old
4191	3407075075	Housewife's group.		
4195	3407076015	Housewife's group.	With relatives and neighbors at home.	
4701	3402081015		With relatives and neighbors at home or at neighbor's house.	
4791	3701001015	Housewives group, Funeral group	With neighbors and family at our house.	A lot of SOx from EGAT.
4794	3701002015	Housewives savings ban, Agricultural Group, Funeral Group, Volunteer Group	Neighbors and relatives at our house.	
4798	3701003045	Agriculture Bank	With relatives and neighbors at our house.	
4803	3101004075	Funeral & Housewives groups.	With neighbors at our house.	Land is not her own land.
4807	3701005015	Housewives Savings Bank, Funeral, Agriculture Bank	With Neighbors at our house.	
4810	3701006015	Housewives Savings Bank	With neighbors and relatives at our house.	
4814	37001007015	Funeral group and Agriculture Bank	With neighbors and family at our house.	

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4818	3701008075	Volunteer Group, Agriculture Bank, Funeral	With neighbors & Family at our house.	
4823	3101009015	Housewives group, Housewives savings bank, Funeral.	With neighbors and relatives at our house.	
4827	3701010015	Agriculture Group, Housewives Group	With neighbors at our house.	
4834	3701012015	Housewives' group	With neighbor at home	
4837	3701077075	Housewives Group, Funeral	At neighbor's house.	
4838	3701013015	Agriculture group	With relatives and friends at home	
4841	3701014015	Village hierarchy group Agriculture bank Funeral group Housewives' group	With friends, relatives, wife and child	
4845	3701015015	Housewives group, Agriculture Bank, Funeral group, rice and teak grower's group.	With neighbors, child and wife in the village.	
4851	3701016015	Housewives, Housewives Savings Bank, Funeral	With neighbors and relatives at our house.	Egat SOMETIMES participates.
4858	3702018015	Housewives' group Funeral group	With neighbor	
4863	3702019015	Housewives' group	With neighbors at home	
4868	3702020015		With relatives, neighbor and child	
4874	3702021015	Housewives' group Funeral group	With friends at friends' house, relatives	
4876	3702022015	Housewives' group		
4880	3702023015	Housewives' group		
4884	3702024015	Saving group Agriculture group Housewives' group Funeral group	With neighbor at home	
4887	3702025015	Housewives' group	With neighbor, husband and child	
4893	3702026015	Saving group Funeral group Housewives' group	With neighbors at home	CommAct: Funeral, wedding, housewarming, paba
4896	3702027015	Housewives' group Funeral group	With friends, relatives at home and at friends' home	
4902	3702028015	Funeral group Housewives' group Volunteer group		
4908	3702029015			
4913	3708030015	Funeral group	With neighbor at home	
4918	3702031015	Funeral and Housewives groups.	With neighbors at our house.	
4921	3702032015	Housewives group and funeral group.	At our house with neighbors.	
4926	3702033025	Funeral group	At home with neighbor	CommAct: wedding, funeral, housewarming
4929	3702034015	Funeral group		

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4939	3702035015	Funeral group		
4940	3702036015	Housewives' group Funeral group	With neighbor at home	
4943	3702037015	Funeral group		
4944	3702037015	Housewives' group Funeral group	With neighbor at home	
4948	3702038015	Funeral group	With friends at friends' house	
4953	3702039015	Housewives' group Agriculture group Funeral group	With neighbor at home	
4961	3702040015	Funeral Group	At our house with neighbors.	
4964	3702041015	Housewives' group	With relatives, neighbor at relatives' house	
4967	3702042015	Funeral group Housewives' group	With friend at home	
4978	3703044015	Housewives and funeral groups.	With neighbors	
4984	3703045015	Housewives and funeral groups.		
4988	3703046015	Agriculture Bank, Volunteer Group, Housewives Savings Bank	With relatives and neighbors at our house or a neighbor's house.	
4992	3703047015			
4996	3703069015		With neighbors and relatives.	EGAT doesn't take responsibility for the SOx
4999	3703048015	Agriculture Bank and Funeral Group	With neighbors and family at our house.	
5004	3703049015	Housewife's Group	With neighbors and son and husband.	A lot of SOx from EGAT
5009	3703050015	Funeral and Housewives Group	With neighbor's and family at our house.	
5014	3703051015	Funeral	At neighbor's house.	
5017	3703052015	Housewives group, Agricultural Bank	With neighbors and relatives at our house.	
5020	3703053015	Agriculture group, funeral group.	With neighbors at our house.	
5025	3703054075		With neighbors and family at our house.	
5029	3703055015	Housewives group.	With neighbors and family at our house.	
5033	3703056015	Housewives and funeral groups.	With neighbors at our house.	
5036	3703057015	Housewives and Funeral Groups	With Neighbors at home.	
5040	3703058015			
5049	3703059075	No Comment	With neighbors and family at our house.	
5055	3703070015			
5058	3703062015	Housewives Group, Agriculture Bank, Funeral Group	With neighbors and family at our house.	
5060	3703063015	Funeral group.	With neighbors and relatives and our child	
5067	3703064015	Funeral group	At home	
5070	3703065015	Funeral group and housewives group.	With neighbors and family at our house.	
5076	3703066015	Housewives group.	With neighbors and family in our house.	

Appendix R
Analysis Tables of Nasak/Mae Luang Data

Birthdate

Mean Age = 41

Most Common (Mode) = 38

Oldest = 80

Gender

Most commonly answered by Women

95 women = 69%

42 men = 31%

Years lived in village

Average = 33

Most years = 80

Adequate Access to healthcare

Most popular answer = yes

100% said yes

Healthcare is close

Most popular answer = n

No: 75 = 55%

Yes: 62 = 45%

Quality of Healthcare:

Poor: 2 = 1.46%

Fair: 63 = 45.98%

Good: 67 = 48.9%

Excellent: 5 = 3.64%

Money Saved

Average = 478 baht (but this is skewed)

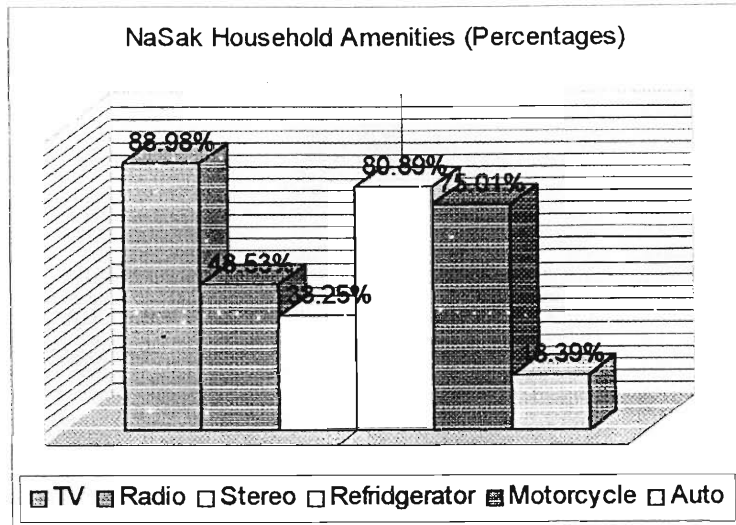
Median = 0

Mode = 0

Highest = 30,000 (outlier)

Possessions:

TV	88.98%
Radio	48.53%
Stereo	38.25%
Refridgerator	80.89%
Motorcycle	75.01%
Auto	18.39%



How much land

Average: 5.55 rai
 Highest: 30.375 rai
 Lowest: 0.0 rai

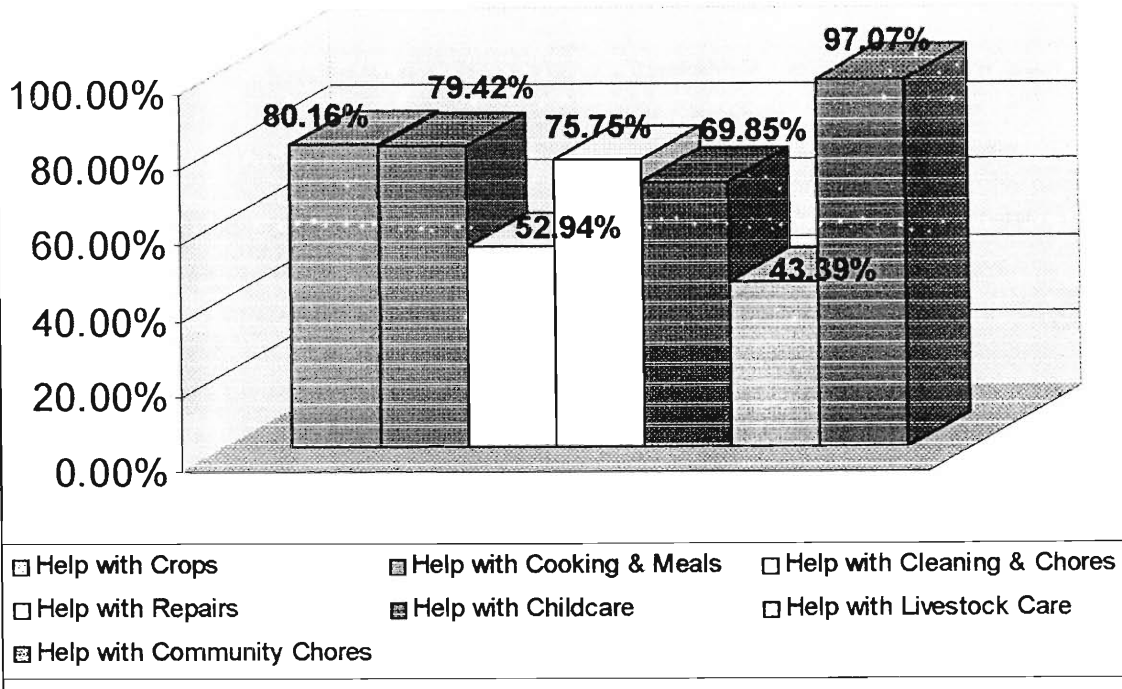
Infrastructure

	Poor	Fair	Good	Excellent
Roads	21.9%	45.26%	32.8%	0.0%
Water	20.4%	32.1%	47.4	0.0%
Drainage	59.1%	0.0%	0.73%	0.73%
Schools	3.6%	40.1%	55.4%	0.73%
Availability of Electricity	2.1%	30.6%	64.2%	2.9%
Access to the Market	32.1%	46.7%	21.2%	0%
Recreational Facilities	6.6%	51.8%	40.1%	1.5%
Temple	8.75%	26.28%	60.6%	4.4%

Help Community

Help with Crops	80.16%
Help with Cooking & Meals	79.42%
Help with Cleaning & Chores	52.94%
Help with Repairs	75.75%
Help with Childcare	69.85%
Help with Livestock Care	43.39%
Help with Community Chores	97.07%

Community Assistance



Participate in Construction

Never	15.3%
Sometimes	21.2%
Most Times	4.38%
Every Time	59.1%

Participation = 84.68%

Don't Participate = 15.3%

(**** maybe add this information to the graph)

Community Group Participation

No Participation: 11.7%

At least one Group: 88.32%

Visit The Temple

Almost Never	3.6%
Every Day	2.2%
Once per week	8.0%
2-3 times per week	8.7%
1 time per month	5.8%
Only on special days	71.5%

Participate in Community Temple Activities

Average: 4 times per year

Most Common response (mode): 2 times per year

Median: 3 times per year

Celebrate Holidays

Never	16.8%
Sometimes	25.5%
Most of the Time	24.8%
Every Time	32.8%

Community Activity Attendance

Average: 2 per year

(Median and Mode are the same)

*** Na Sak has a fixed number of big events each year.

Socialization with Neighbors

Less than once per week	10.2%
1-3 times per week	52.6%
More than 3 times per week	37.2%

Opinion of Government Financial Support

Mean, Median & Mode all = 0

No: 64.69%

Yes: 35.31%

Opinion of Government Taking Concerns Seriously

No: 34.56%

Yes: 65.44%

Opinion of EGAT Support

No: 24.25%

Yes: 75.75%

Opinion of EGAT Taking Concerns Seriously

No: 23.53%

Yes: 76.47%

Does EGAT Participate in Community Activities?

No: 4.40%

Yes: 95.60%

(Looks like they generally don't. Comments say they donate to sports teams).

Overall Opinion of EGAT

Negative Opinion: 6.6%

Positive Opinion: 72.9%

No Comment: 20.4%

Appendix S
Notes from Village Protest

Notes from Village Protest Meeting

January 13, 2000

As translated by Nuntavarn and Na

There is a monthly meeting with the village leaders and representatives from the government and EGAT, but because of the complaints being made about emission levels it is being combined with this hearing about them.

There are three items up for discussion, specifically (1) the pollution from the plant, (2) the damage to the plantations and crops that resulted from this damage, and (3) the affect that this pollution has had on the residents of the villages. Included at the meeting were representatives from NGOs, EGAT, the provincial government, and the tambons.

On August 17-18, 1998, there was an extremely high emittance of sulfur dioxide. EGAT paid about 30 million baht to the villagers for damages sustained. Since that time, sulfur dioxide ambient levels have been under control. The control has been set at 7 tons/hour in the morning (3am to 12 noon) and at 15 tons/hour later in the day (1pm to 3am). The ambient level has been set at 1300 micrograms per cubic centimeter. EGAT has not had levels higher than 780 micrograms per cubic centimeter, which is the same level that Bangkok is at. The standard has greatly improved for the Mae Moh area.

The Mae Moh power plant has 13 stacks built over the course of several years. Stacks 1-3, which have been shut down since December, were built to operated at 75 megawatts (mW). Stacks 4-7 were built for 150mW, and 8-13 for 300mW. Currently, stacks 6-13 have been fitted with FGD scrubbers at stacks 4-5 are scheduled to be fitted by the end of February 2000. Because stacks 1-3 are so old, it is not economically feasible to fit them with scrubbers, and they have since been shut down.

Residents of the tambons complained of respiratory illness from December 19-31, a period of time that was extremely cold for the region. Data from EGAT shows that emissions were well within the controls; for example, the average ambient levels for December were

474 micrograms per cubic centimeter, with emission loads ranging from 3-9 tons/hour. These measurements came from 18 monitoring stations, 13 of which are operated by EGAT and the remaining 5 by the Pollution Control Department (PCD). All of the tambons in Mae Moh district receive this data each week.

The ambient level for December 20-26, 1999 was 252 micrograms per cubic centimeter, which was when the villagers were complaining. Since the high levels in August 1998, the highest level measured was in February 1999 at 760 micrograms per cubic centimeter, and the monthly average was 474 micrograms per cubic centimeter. PCD conducts an audit of the data from all of the stations on a monthly basis. The CEM_s (continuous emission monitoring system) systems are wired to report data directly to the appropriate computers. The villagers complain that all of the sulfur in the air has to go somewhere, but this type of monitoring system would pick up accumulations as well.

One of the villagers' main complaints is that EGAT does not explain the information in a way that they can understand. Many of the people cannot understand all of the technical terms, and so a representative tried to explain it in layman's terms. Another complaint surfaced because a report was sent to the tambons that had no data for one of the monitoring stations. This ended up being the result of an inability to wire the phone lines to the hospital, but the villagers believed that it was a trick and that EGAT was hiding something from them.

Residents complain that the respiratory illnesses are caused by sulfur dioxide, but officials maintain that the illnesses were the result of unusually cold weather. Over the past three years, approximately 7% of the population in Amphoe Mae Moh was treated for respiratory-related illnesses. The number was 5% for all of Lampang Province, and rose to 10% for Tambon Mae Moh, specifically.

By this point the villagers were no longer asking for compensation for the effects of sulfur dioxide, but instead for 'kindness and ~~under~~standing' from EGAT for the losses that

they suffered to their plantations. After a summary of the crop losses that were sustained, it was suggested by a participant that money be used from a governmental provision for natural disasters. Because the people of Thailand essentially own EGAT, their paying money for something that was not their fault would be a misuse and waste of money.

In the end it was decided that compensation would come from the government this time. EGAT agreed to provide some funding to take care of the villagers, but they still blamed them even though it was determined that this incident was isolated from the existence of the power plant. The villagers tried to argue about compensation for a final time, complaining that the seeds that would be provided would not replace the full-grown crops or the labor. In the end it was determined that the government would only compensate with an amount of seed that would grow into the equal amount of lost crops.