Report of Round 5 Census (2004)

Kanchanaburi Project

Institute for Population and Social Research

Mahidol University

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Foreword

The Kanchanaburi Project, supported by The Wellcome Trust of the United Kingdom since 2000, is a research project of the Institute for Population and Social Research, Mahidol University. The objectives are to study population change in the field site area in conjunction with changes in the economic, social and physical environment. This includes the effects of government and non-government community development projects. A database on population, economic and social information for Kanchanaburi province has been established. Operations research is also being implemented to increase the quality of life of the residents of the area.

The report of Round 5 Census (2004) is one of the outputs of the Kanchanaburi project. This is the last volume of the reports on the Kanchanaburi Project Phase I (2000-2004). The report analyses data on the demographic, economic, social and health status of the population living in the field site communities. This includes an analysis of changes that occurred over the last four rounds of data collection.

The Institute for Population and Social Research expects that the results will be utilised for future operations research that lead to the formulation of policy and community development plans in Kanchanaburi province. This contributes to sustainable development that improves the quality of life of the area. It is expected that this report will serve as a catalyst for other research concerning community and social development undertaken by government and non-government organizations at the provincial and national levels.

Associate Professor Dr. Churnrurtai Kanchanachitra
Director of Institute for Population and Social Research

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The Round 5 census (2004), as well as this report, would not be possible without the assistance of many people and the research team expresses our deep appreciation and sincere gratitude to those who assisted us.

We would like to express our appreciation to the organisations and individuals who provided support to this project. First and foremost, the population in our study area, including village headmen, community leaders, local government officers and community members, for their help and cooperation with the research team during data collection.

Our thanks also go to the Kanchanaburi Provincial Office for providing the research team with the opportunity to explain the objectives of the census to local government organisations in Kanchanaburi before the data collection took place. We express our gratitude to all district heads and staff of provincial organizations in the study area who facilitated coordination and helped in accommodating field workers.

The research team can only work within the time limitations to obtain high quality data because of the efficiency of field workers both in the household interviewing teams and the GIS teams. We thank all supervisors who carefully and tirelessly devoted their energy in supervising interviewing and checking completed questionnaires. We especially thank Wannee Huthaphet, Yaowalak Jeranai, Anupong Pochanapun, Jirawan Hongthong, Pairat Laddakul, Panya Thongkui and Vipaporn Jaruroengpaisal, plus the Kanchanaburi field station staff, for their expertise and hard work.

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Lastly, we express deep gratitude to The Wellcome Trust of the United Kingdom who support this project.

Research Team
February, 2007

ABSTRACT

Report of Baseline Survey (2004)
Institute for Population and Social Research, Mahidol University

The Kanchanaburi Project is a demographic surveillance system, which records population changes (demographic, social, economic and health) in a study area of 100 villages/census blocks. This fifth round census was conducted between 1st July to 28th August 2004.

The enumeration listed 12,439 households with a population of 42,923 (20,396 males and 22,542 females). Compared to the fourth round, the number of households increased almost one percent, but the population slightly increased. The majority of the population was working in the agriculture sector. There was a significantly higher proportion of females than males who have no education. Regarding language in daily use, the majority of the study population speak Thai, although in the highland stratum almost half speak non-Thai.

About 25 percent of the population are migrants. Ten percent are in-migrants, while 15 percent are out-migrants. The majority of migrants were between 15-29 years old. Most of them migrated within Kanchanaburi province. This pattern portrays continuity rather than changes from previous rounds.

Fertility was at replacement level and continues to decrease. A woman has two children on average. Women in the highland stratum still had the highest fertility, while women in the urban/semi-urban stratum had the lowest. About 80 percent of women used contraceptives, a small decrease compared to the previous round. Female sterilization was still the most popular contraceptive method, followed by pills and injection.

The mortality rate was 7 persons per thousand. Mortality rates were higher among men compared to women, though there were no gender differences regarding mortality patterns and no changes between survey rounds. Non-communicable disease was the highest reported cause of death. About 93 percent of deaths were registered.

Consumption of unhealthy food was the highest in the uplands. Bottled drinking water was the most popular in urban/semi urban compared with other strata.

About 30 percent of persons at least 15 years of age had chronic diseases, particularly problems related to blood pressure, followed by gastroenteropathy muscle/back pain, allergy and diabetes. There was an increasing trend among the elderly and females.

Approximately 62 percent of population aged 50-64 years old expect to economically-depend on their children, while 49 percent expect to support themselves. In the old age, 62 percent of them plan to stay with their children, 24 percent with spouses and 7 percent plan to stay by him/herself. And 82 percent owned the “30 Baht Health Care Card Scheme” or “Gold Card”, but only about 43 percent of them used the card. This is because they were not ill, inconvenient/ received low quality of medicine, or used some other health care cards.

Contents

List of tables

List of figures

1. Introduction

Sureeporn Punpuing

With support from The Wellcome Trust of the United Kingdom, the Kanchanaburi Project commenced in January 2000. The primary objective of the project is to monitor population change within a field site in Kanchanaburi province. Changes in population are linked to changes in social, economic and environmental conditions in the province. The effects of government as well as non-government projects on the persons living in the field site are also analysed. Databases at both the macro and micro levels have been developed to meet the objectives of the project.

Kanchanaburi is a province located in the western part of Thailand. The province shares a long border with Myanmar and contains a variety of ethnic groups and migrants, both documented and undocumented, from Myanmar. The province is the location of many types of industry. In addition, the province is an important producer of plantation crops and is one of the major tourist destinations in Thailand. The selection of the 100 field site communities was structured to reflect this diversity in social, economic and ecological conditions found in the province.

The demographic surveillance survey (DSS) is an important activity of the Kanchanaburi project. This report provides results of the 5th round of the DSS, which is the last round of the "Kanchanaburi Project, Phase I (2000 -2004)".

The annual enumeration of households is conducted during the middle of each year. The data are collected at three levels: village, household and individual. The enumeration consists of two main components. In the first component, data on fertility, mortality, and migration is collected. The changes in demographic characteristics of individuals and households are updated every round of census. The second component includes questions related to social, economic, health and environmental issues. Not all information is updated annually, with selection of topics to be investigated depending on the type of information required. For example, the environment does not change much over a year, therefore, data on these variables is not collected annually. In order to reduce the burden on the respondents, the questionnaires were adjusted to contain the minimum number of questions possible.

This report describes the study areas, data collection process, methodology, and basic results. The research methodology is discussed in chapter two, which includes definitions, selection of study areas, data collection instruments, fieldwork and data quality. Chapter three deals with the changes in population, and social and economic conditions at the village level. Chapters 4-12 present the analysis of data at the household and individual levels. Chapter four describes general characteristics of the population. Chapter five presents economic activities, chapter six analyzes migration, chapter seven examines fertility and family planning, mortality is discussed in chapter eight, chapter nine explores the health status of the population, chapter ten describes health behaviour, chapter eleven discusses old age security, and conclusions are reported in the final chapter.

2. Design and Methodology

Supanee Pleumcharoen

2.1 Concepts and definitions

A major objective of this project is to identify how socio-economic and environmental changes affect population dynamics. The study units are 100 villages/census blocks distributed throughout Kanchanaburi province.

The Institute for Population and Social Research (IPSR) annually collects data using a population census for every household and for every individual aged 15 years and over in each village/block in the study area. The data collected includes population, economic, social and health related information. For data collection purposes each household from which data are collected is given a unique code.

For the Round 5 (2004) census, interviewers matched households and each individual to households in Round 4 (2003) by using the household listing from Round 4 (2003). Each household in the household listing has their own code called the "Household Code" and each individual in this household listing has their own code called the "Individual Code".

Interviewers first recorded all members of the household from the Round 4 (2003) listing and then added to the Round 5 (2004) listing the new members who had moved into the household after July 1st 2003. All household members are named in the household listing, including any member who migrated or who had died since the Round 1 (2000) to Round 4 (2001) censuses.

2.1.1 Definition of household

The Round 5 (2005) census employed the same definition of "new" and "old" households and individuals as in the Round 1 (2000) to Round 4 (2004) censuses. The definitions of households are as follows:

An old household refers to a household that:

1. Was recorded in Round 1 (2000) to Round 4 (2003) and remains the same household in Round 5 (2004);

2. Was recorded in Round 1 (2000) to Round 4 (2003) but subsequently separated into two or more households. In this census, the household that has the same household head as in the first round is the "Old household".

A New household is a household that has not been interviewed since Round 1 (2000) because of the following reasons:

1. A household which is newly established (after July 2003) ;

2. A household that was separated from the old household for any reason e.g. marriage;

A household where all members had moved out is a household that was interviewed in Round 1 (2000) to Round 4 (2003) but in Round 5 (2004) all members had moved to live outside the village or had migrated to work outside the village during the period of the survey. This type of household was recorded in the form as "Moved out all household".

An individual household refers to a household in which one or more persons make mutual arrangements for the common provisioning of food and other essentials of living. These persons may either be related or unrelated by blood, marriage or adoption.

A *group household* refers to a household comprised of a group of unrelated persons who live together and share lodging and regulations. This group of persons may share or may not share food or living arrangements in the form of an institutional group household. In this census, group households include temples, prisons or welfare homes.

2.1.2 Household membership

Household membership refers to anyone who resides in a particular household (sharing food, living arrangements, etc. in the same household) for at least one month continuously (from July 2003 to July 2004).

2.2 Study area and village selection

The study area is divided into five strata, which are: 1) urban/semi-urban (industrialised), 2) rice producing, 3) plantations, 4) uplands areas, and 5) mixed economy. The characteristics of each of these strata include the following.

The Urban/Semi-urban (industrialized) strata covers the population living in municipal areas. The latter have been categorized into census blocks by the National Statistical Office (NSO). This strata also covers villages that have a significant proportion of their labour force employed in industries.

The Rice strata villages are those located in lowland areas where the main occupation is rice cultivation.

The Plantation strata comprises villages that are also located in lowland areas, and where the major occupation of the local people is cultivating cassava or sugar cane.

The Uplands strata contains villages located in the three uplands districts, which are Saiyoke, Thongpaphum and Sangklhaburi districts.

The Mixed Economy strata contains villages that could not be classified into the other four strata.

2.3 Method of data collection

The method used for data collection was structured interviews and entailed the use of three sets of questionnaires: village, household and individual.

The Village questionnaire consisted of seven sections: general village data, agriculture, occupation, infrastructure and transportation, health, environment and community development.

The Household questionnaire consisted of five sections: basic data on the household occupants, mortality, household characteristics, environment, and government policy. The interviewers observed household characteristics and recorded them in an observation form.

The Individual questionnaire was used for respondents aged 15 and over. It consisted of seven sections: personal data, migration, fertility, health, community development, aging and condom use.

(Questionnaires are shown in Appendix 2)

2.4 Questionnaire pre-testing

All three questionnaires were pre-tested in Kanchanaburi villages that were located outside of the study area. Three pre-tests were undertaken as follows:

- 1st Pretest : 13nd – 15th February, 2004 in one village,
- 2nd Pretest : 14th – 15th March, 2004 in one village, and
- 3rd Pretest : 19th – 20th May, 2004 in one village.

Before and after each pre-test, a meeting was held among the research working group members in order to obtain suggestions and recommendations for questionnaire revision. At the same time, a manual for collecting data for all of the questionnaires was prepared.

2.5 Data collection period

Data collection started on July 1st, 2004 and ended on August 28th, 2004 (59 days in total).

2.6 Data collection team

For Round 5 (2004), there were 70 people in the data collection team, including 60 interviewers and 10 field supervisors.

The process of recruiting field supervisors and interviewers was divided into two steps. The first step entailed screening 10 supervisors. These field supervisors were trained during 17th – 27th May, 2004. After training, the field supervisors went to sample villages for mapping sample villages and listing households over a two-week period from 20th – 26th May, 2004.

In the second step from 18th – 28th June, 2004, the interviewers were selected and trained. Concepts and definitions of each question in the questionnaires were explained. The interviewers learned about interviewing techniques and practiced interviewing.

Ten teams were responsible for collecting the data. On average, each team consisted of one field supervisor and six to ten interviewers, with the number depending upon the number of villages and area to be covered. Each team arrived in the first village on June 30th, 2004 and began data collection on July 1st, 2004.

2.7 Data collection

2.7.1 Updated village mapping

Village mapping in Round 5 (2004) was updated from village maps from Round 4 (2003) and data from the GIS survey as follows;

1. The village headman and other community leaders were asked to determine if there had been any changes in village boundaries over the previous year. The village boundaries were then identified and a map was drawn covering details of roads in and out of the village, railways and waterways (rivers, canals, reservoirs) and these details were added to the map that was used in the first round.

2. Also noted were the positions of key village centers (e.g., temple, school, health centre, shops, headman's house). If there were any changes in households (new or moved out) these were added to the map that was used in the first round.

3. On the map, each household or group of households was allocated a number and the name of the household head was noted.

4. On the map, notations were also made concerning what households might be difficult to interview.

2.7.2 Updated listing

An updated listing from the listing used since Round 1 (2000) and the data from the GIS survey was obtained with the assistance of the village headman as follows;

1. This list was updated through interviews with the household heads,

2. The household listing was also updated, with any household without a household number being added into the updated listing. Households that had the same household registration number recorded in the household listing of

the first and second round censuses, but where nobody had resided, were checked again to see is there was any person now resident. If it was found that a household was considered as derelict by the neighbours, the interviewer recorded this as a derelict household and completed all details on the form

3. For derelict households recorded in Round 2 (2001) and the new households found during the Round 3 (2002) census, household registration numbers were obtained and recorded and were then visited.

2.7.3 Data collection process

2.7.3.1 Field work plan

The following actions were undertaken for field work:

1) In the first week of the data collection period, all team collected data in five villages in Saiyoke

2) Teams were distributed among villages to finish the schedule of data collection in all study areas.

2.7.3.2 Data collection

The method of face to face interviews that were used in each previous census round were also used in this round. There were three types of questionnaires used as follows:

Village questionnaire

Field supervisors obtained village data through group interviews with village headmen, village committee members, members of Tambol (subdistrict) Administrative Organisations, monks, teachers and women's group members. A minimum of three members from the community were interviewed. They began by introducing the background of the Kanchanaburi project and asking for their consent for the interview.

Household questionnaire and Individual questionnaire

Interviewers obtained household data by interviewing household heads, and individual data by interviewing individuals aged 15 and over. Interviewers began by providing respondents with background information about the Kanchanaburi project, why their information was important, and asked them for their consent.

If interviews could not be obtained at the first or second visit, a household was visited a third time. After three visits if consent could not be obtained for the interviews the household was recorded as a non-response.

If an interviewer faced difficulties in interviewing, field supervisors assisted interviewers in explaining the objectives of the Kanchanaburi project. This helped decrease the number of non-responses.

2.8 Data quality control

During the first week of data collection, the ten data collection teams not only went to gather the data in Saiyoke but also participated in discussions and

comments in group meetings every day. This activity contributed to a shared understanding of questionnaires.

The process of data quality control was as follows;

- Interviewers checked the quality of data after interviewing by exchanging the completed questionnaires before handing them to supervisors. Sometimes interviewers went back to re-interview after questionnaire checking.

- Researchers completed the field edit by spot checks when they visited and monitored the teams. Team meetings were arranged when researchers found any problems.

- For supporting the team during data collection period researchers, field supervisors and project officers visited and monitored the team 2-3 times a week.

The field edited questionnaires were sent to the field station to be re-edited by researchers.

After completion of the fieldwork, 10 persons from the data collection teams were recruited for data processing. The process of data processing took three months (1st September – 30th November 2004).

2.9 Collected Data

2.9.1 Response rate and time for interviews

A community census approach was employed in collecting data from both the households and individuals (persons aged 15 years and over). The first step was for the supervisor to obtain the number of eligible households from the headman. This was used as the target number of households to be interviewed. Once a household was interviewed, the number of eligible respondents was identified. These respondents were then interviewed.

There were 13,052 eligible households in the sampled communities, and of these 12,439 were interviewed. This results in a response rate of 95 percent. From the individuals interviewed, there were 30,215 eligible individuals, of whom 28,251 cases were interviewed. Therefore, the response rate for individuals is 94 percent. The time spent for household interviews ranged from 3 minutes to 1 hour and 24 minutes. The average time spent on a household interview was 16 minutes. Individual interviews ranged from 3 to 60 minutes. The average time spent on individual interviews was 14 minutes. (see Table A2.1 in the Appendix 1)

The number of non-response for household and individual questionnaires were 613 and 1,964 respectively. Reasons most frequently cited for non-response among individuals were busy working (61 percent) and sick/old/handicapped (24 percent) and refusal to be interviewed (13 percent). For non-response households, 30 percent was due to busy working, and 20 percent refused to be interviewed. (see Table A2.2 in the Appendix1).

2.9.2 Data quality

In order to evaluate the quality of data, the opinions of interviewers were recorded at the end of each household and individual interview. These opinions included the interview setting, presence of a third person or persons, interview involvement of a third person, co-operation and reaction of interviewee, and interviewer's view of the overall quality of data. (see Table A2.3 in the Appendix 1)

Overall, opinions were similar for both questionnaires. Most interviewers thought that the quality of data ranged from good to excellent. Only eight percent of interviewers thought the data were of average quality.

The interview setting for the household interview was judged to be private and quiet by 49 percent of interviews, and noisy but private for 46 percent of interviews. For individual interviews, 55 percent of interviewers thought that the interview setting was noisy but private and 40 percent reported that the setting was private and quiet. Only in 5 percent of interviews with households as well as five percent of interviews with individuals did the interviewers report that the setting was not private and that this affected the interview. However, less than one percent reported that they had to stop the interview due to the setting.

Having a third party present during the interview was common. During the household and individual interviews, about one-half of interviews were completed in the presence of a third party. However, that person(s) were mainly other household members. Most of third parties present at interviews caused no interruption.

Almost all of respondents provided good to excellent co-operation. In less than one percent of interviews was it reported that co-operation was poor, while in two percent of interviews the interviewer reported moderate co-operation.

More than 90 percent of respondents were reported to have enjoyed the interview. Less than one percent was reported to be unhappy about the interview on some questions.

In conclusion, it can be said that the quality of data is good to very good. This is due, in part, to three pre-tests of the questionnaire. The lengthy recruitment process, as well as detailed training sessions for supervisors and interviewers, were other reasons contributing to good data quality.

3. Village Data

Chanya Sethaput

Village data under the Kanchanaburi Project have been collected for five years (2000-2004) with the aim of examining change at the village level over time. Village data in the fifth round were collected by interviewing at least 3 village leaders in each study village in 89 villages, an increase from 86 villages in the first round census (2000)

3.1 General information

Information on numbers of households and population were obtained from group interviews of village leaders, not from civil registration.

In this round, the average number of households per village in the Semi-urban stratum remained the highest, followed by the Uplands, Mixed economy, Plantation and Rice strata respectively. This pattern has been observed in every round. The number of households has been increasing in every strata during the five years of data collection.

Villages in the Semi-urban stratum also had more population on average than other strata. The second most populous villages were found in the Uplands and Mixed-economy strata. The mean population per village has increased from the first round (table 3.1).

Table 3.1 Mean number of households and population per village by strata (2004 round)

	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Mean households	204	104	113	170	143	138
Mean population	806	488	497	684	628	595
Mean male population	390	243	249	357	304	297
Mean female population	416	260	248	326	334	302

3.2 Source of water for agriculture

It has been found in every annual census round that rainwater is the main source of water for agriculture in Kanchanaburi. This pattern was also observed for Round 5 (table 3.2). The one exception is the for the Semi-urban stratum, where people used water from irrigated canals and underground more than other sources. In the Uplands villages, people mostly used water from rivers and natural canals. In the Mixed economy stratum, source of waters were more varied than other strata, e.g. irrigated canals, underground water, rivers, canals and small dams including rain water.

Table 3.2 Number of villages by sources of water for agriculture by strata (2004 round)

Source of water	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Irrigated canal	5	9	1	0	7
Underground					
- less than 5	0	0	0	0	4
- more than 5	4	1	2	0	9

Table 3.2 (Continued)

Source of water	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
River	2	0	1	8	4
Natural canal	0	1	5	12	6
Natural pond	0	1	2	1	0
Small dam	0	0	2	1	1
Rain water	4	13	19	20	17
Digging pong	0	0	8	1	0
Fountain	0	0	0	0	1
Piped water	0	0	0	3	0
Shallow pond	0	0	2	0	0
Treated water	1	0	0	0	0

Multiple responses possible

3.3 Occupation

The main occupation reported in every village was self-employment in agriculture. Agriculture was followed by employment in a small business and work in government service and state enterprises. In addition, wage labour and agricultural labour were also reported frequently. Notably, there were two villages in the Upland stratum where many villagers earned their living as forest collectors (table 3.3).

Table 3.3 Number of villages by main occupation and strata (2004 round)

Occupation	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Agriculture	7	21	20	21	20
Agricultural labour	1	12	9	13	4
Non agricultural labour	3	7	14	6	15

Table 3.3 (Continued)

Occupation	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Government/state enterprise	5	9	9	15	14
Business	6	17	11	13	14
Factory worker	4	2	1	0	3
Manufacture	0	0	0	0	1
Forest collector	0	0	0	2	0
Others	0	2	0	4	3

Multiple responses possible

In most Kanchanaburi DSS villages, people grew cash crops, vegetables and fruits. Table 3.4 indicated that there were 81 out of 89 villages that had plantation crops, commercial trees, vegetable gardens and orchards. There were 43 villages where people grew rice for sale.

Table 3.4 Number of villages growing cash crops by strata (2004 round)

Crop	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Rice	3	18	6	7	9
Plantation crops	7	18	20	17	19
Vegetable	4	7	15	15	16
Fruit	3	10	13	18	8
Tree	2	11	16	15	15
Other	1	4	2	1	1

Multiple responses possible

Almost all villages were engaged in animal husbandry. Animals most commonly raised were cows (in 85 villages out of 89). The majority of villages also raised pigs and chicken. Raising buffalo and fish farming were less common. About 1-3 villages people raised prawns, frogs, wild pigs and dogs for sale.

Table 3.5 Number of villages with animal husbandry by strata (2004 round)

Crop	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Cow	7	21	18	20	19
Buffalo	0	4	4	10	3
Pigs	4	17	16	12	14
Chicken	3	14	12	5	9
Fish	3	5	3	10	4
Prawns	0	2	1	0	0
Frogs	0	0	0	1	0
Goats	1	1	0	0	2
Duck	0	0	4	0	1
Sheep	0	1	0	0	0
Wild pig/Dog	0	0	2	0	0

Multiple responses possible

As consequence of animal husbandry; diseases that spread among animals such as anthrax, blackleg chicken cholera, pig cholera, bird flu, and chicken flu were found in some villages. In general, informants reported that villagers tried to cure their animals by buying medicine and using vaccination. Some villages asked for help from government animal husbandry officers.

3.4 Cottage industries

The village survey asked about manufacturing and production under the "One Tambon One Product" (OTOP), which is a popular government policy designed to stimulate local production of goods. Thirty villages had a total of 49 factories or cottage industries in their villages. Cottage industries were most often located in the Semi-urban and Mixed-economy strata, e.g. cement brick factory, paper/plywood factory, fertilizer factory and noodle factory. In four Rice growing villages, community rice mills were reported. It was observed that number of cottage industries had increased due to the government's policy to promote "OTOP"

Table 3.6 Number of villages with cottage industry (including OTOP) by strata (2004 round)

No. of Factory In village	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
1 factory	0	3	2	7	5	17
2 factory	3	3	1	0	0	7
3 factory	2	1	0	1	2	6
Total (village)	5	7	3	8	7	30

3.5 Public facilities

In the previous round (2003), there was evidence of change in the level of availability of public facilities compared with the first round (2000) data. Comparing the fourth and fifth round, we find little evidence of further change in

the level of public facilities. Cell phone services were available, with the exception of some villages in the Uplands strata, in nearly all villages. Public telephones were also available in villages. The number of working public telephones varied among census rounds due to telephones sometimes being out of service at the time of the census..

There was an increase in the number of private vehicles in villages, but public transportation was still widely available (table 3.7). For example, in the Plantation and the Uplands strata, more than half of villages were on bus routes, but only nine among 89 villages were sites of bus terminals.

Table 3.7 Number of villages by public facilities and strata (2004 Round)

Public facilities	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Working public telephone	6	17	13	18	14
Cellular phone signal	7	21	19	12	20
Internet use	1	2	0	0	3
Bus route	3	9	12	13	6
Bus terminal	0	2	1	6	0

Multiple responses possible

Village informants reported flooding in almost one-third of villages during the year prior to the Round 5 (2004) census (table 3.8). Floods were most frequently reported by villages in the Uplands and Plantation strata and were least likely to be reported by villages in the Semi-urban stratum.

Table 3.8 Number of villages with floods by strata (2004 round)

Flood	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Yes	0	4	7	9	5	25
No	7	17	13	12	15	64
Total (villages)	7	21	20	21	20	89

3.6 Health

In every round, community leaders were asked about the health situation and presence of diseases in their villages. The most commonly reported disease in every round was 'Colds', especially in the Rice stratum. The second most prevalent disease was malaria. However, the number of villages reporting malaria decreased compared to previous rounds. In the Upland stratum, where malaria was most often reported, the number of villages reporting the presence of malaria decreased from 17 villages (in Round 1) to 15 villages in Round 4 and to 8 villages in Round 5. The number of villages reporting respiratory diseases slightly increased (table 3.9).

Table 3.9 Number of villages reporting major diseases by strata (2004 round)

Disease	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Colds	5	17	13	7	9
Malaria	0	0	0	8	1
Diabetes	0	2	0	1	1

Table 3.9 (Continued)

Disease	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Hemorrhagic fever	0	0	0	0	2
Bone diseases	0	1	0	0	0
Respiratory diseases	0	0	1	2	2
Disease of digestive system	0	0	0	1	0
Pneumonia	0	0	0	1	0
Liver disease	0	1	0	0	0

Multiple response possible

Utilization of health services varied by strata (table 3.10). Health centers located in the village were utilized by the majority of residents in 13 of the villages, with six villages in the Uplands stratum having high utilization of health centers located in the village. More common was use of health centers located outside the villages, especially for the villages in the Rice, Plantation and Mixed economy strata.

Table 3.10 Location of health centers where most people went for treatment by strata (2004 round)

Health center	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
In village	1	3	1	6	2	13
Out of village	6	18	19	15	18	76
Total	7	21	20	21	20	89

3.7 Social gatherings

In the fifth Round, a new question was asked about places where people gathered for social activities. Community halls were most frequently mentioned as places for gatherings, especially village meetings (33 out of 89 villages). The next most frequently cited meeting place was the village or sub district headmen's residence (29 villages). Thirteen villages used temples for village meetings.(table 3.11).

Table 3.11 Place for village social gatherings by strata (2004 round)

Meeting place	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Temple	1	4	3	3	2	13
School	1	0	4	1	2	8
Village/sub district headmen's residence	3	9	8	1	8	29
Multipurpose hall, community hall, primary health care centre/reading post	1	5	3	16	8	33
TAO office	0	0	1	0	0	1
Village fund office	1	0	0	0	0	1
Occupation development/ Agricultural demonstration centre	0	2	0	0	0	2
Tambon information centre	0	0	1	0	0	1
Health centre	0	1	0	0	0	1
Total	7	21	20	21	20	89

Slightly over half of the villages had no recreational facilities in the village (table 3.12). In the remaining 43 villages, a school soccer field, and temple or village sport field was used for recreation. If there were nowhere available in the village for sports or recreation, most villages used soccer field and temple grounds outside the village.

Table 3.12 Place for recreation in village by strata (2004 round)

Place for recreation	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
School soccer field/temple	2	7	8	4	5	26
Village's sport field	0	2	2	1	0	5
Village reservoir	0	0	0	0	1	1
Community forest	0	0	1	0	0	1
Public garden	0	0	0	0	1	1
Residence of assistant headman	0	1	0	0	0	1
In factory	1	0	0	0	0	1
Fountain	0	0	0	1	0	1
Dam	1	0	0	0	0	1
Demonstration centre	0	1	0	0	0	1
Raft near river	0	0	0	4	0	4
Total	4	11	11	10	7	43

Most people in 47 villages made merit in their village temple (table 3.12). This was especially common for villagers in the Uplands strata (19 out of 21 villages). People in other villages went to temples outside their villages for merit making because there were no temple in their villages or because of their faith.

Table 3.13 Place where most villagers make merit by strata (2004 round)

Place of merit waking	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
In village	1	11	11	19	5	47
Outside village	6	10	9	2	15	42
Total	7	21	20	21	20	89

Children in 42 villages attended primary schools in their villages (table 3.14). Children in the other 47 villages had to go to primary schools outside their villages. In the remote villages, i.e. the Upland stratum, most children attended in-village primary schools more than in other strata, followed by the Plantation stratum (12 villages).

Table 3.14 Place where most children attend primary school by strata

Place of study	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
In village	1	7	12	17	5	42
Outside village	6	14	8	4	15	47
Total	7	21	20	21	20	89

3.8 Ecological problems

In the fifth Round (2004) questions about environmental problems were added. When asked about the environmental-related problems in the village during

previous 5 years, informants reported that 90 villagers in the Mixed economy strata and 33 villagers from the Plantation strata got sick from using agricultural chemicals and from industrial pollution. Water pollution was found in 2-3 study villages in each strata. The other most frequently cited environmental problem was soil degeneration because of chemical overuse. This was found in every strata, especially in the Plantation and the Mixed economy strata. Dust and smoke were also raised as ecological problems in the villages.

Table 3.15 Ecological problems in village (2000-2004) by strata (2004 round)

Ecological problem	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
1. Agricultural chemicals and industrial pollution	0	1	6	1	5
2. Water and air pollution	2	2	3	2	2
3. Soil degeneration	5	12	14	9	12
4. Dust and smoke	1	2	4	4	2
5. Rubbish	2	0	0	0	0
6. Smell	0	0	1	1	1

Multiple responses possible

3.9 Natural disasters

During the period 2000-2004, there have been natural disasters such as storms, hail, floods and drought in some villages in the Rice-growing, Plantation and Mixed economy strata. Only one village in the Semi-urban strata experienced a natural disaster during the period (see table 3.16).

Table 3.16 Natural disaster in villages (2000-2004) by strata

Natural disaster	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Yes	1	12	11	4	11	39
No	6	9	9	17	9	50
Total	7	21	20	21	20	89

3.10 Summary

During the five years of annual census (2000-2004) there has been little physical or structural change in the study villages, including the villager's way of life. The most evident change has been in the production of goods in the villages. We should pay more attention to the effect of ecological problems in the villages.

4. Demographic Characteristics of Study Population

Aree Jampaklay

4.1 Population size

For the 5th round (2004), the study enumerated 42,938 persons in the study area, with 20,396 males and 22,542 females, from 12,439 households. The population size is similar to that obtained from the 4th round census. The highest proportion of the field site population is living in the Uplands and lowest in the Plantation strata, a pattern that was also observed in the 4th round (Table 4.1 and Figure 4.1).

Table 4.1 Number of households and population by sex, strata and census round

	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Households						
Round 1 (2000)	2,580	1,888	1,845	2,939	2,360	11,612
Round 2 (2001)	2,776	1,969	1,968	3,328	2,616	12,657
Round 3 (2002)	2,664	2,024	1,986	3,399	2,607	12,680
Round 4 (2003)	2,550	1,985	1,976	3,235	2,610	12,356
Round 5 (2004)	2,499	2,047	1,981	3,327	2,608	12,462
Total population						
Round 1 (2000)	9,198	7,196	6,706	10,868	8,646	42,614
Round 2 (2001)	9,797	7,348	7,079	12,318	9,487	46,029
Round 3 (2002)	9,416	7,239	6,869	12,299	9,220	45,043
Round 4 (2003)	8,751	6,955	6,657	11,429	9,024	42,816
Round 5 (2004)	8,426	7,091	6,706	11,753	8,962	42,938

Table 4.1 (Continued)

	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Males						
Round 1 (2000)	4,257	3,371	3,256	5,454	4,088	20,378
Round 2 (2001)	4,594	3,437	3,429	6,225	4,512	22,197
Round 3 (2002)	4,431	3,358	3,324	6,182	4,378	21,673
Round 4 (2003)	4,044	3,219	3,203	5,620	4,264	20,350
Round 5 (2004)	3,895	3,293	3,214	5,802	4,192	20,396
Females						
Round 1 (2000)	4,941	3,825	3,450	5,414	4,558	22,236
Round 2 (2001)	5,203	3,911	3,650	6,093	4,975	23,832
Round 3 (2002)	4,985	3,881	3,545	6,117	4,842	23,370
Round 4 (2003)	4,707	3,736	3,454	5,809	4,760	22,466
Round5 (2004)	4,531	3,798	3,492	5,951	4,770	22,542

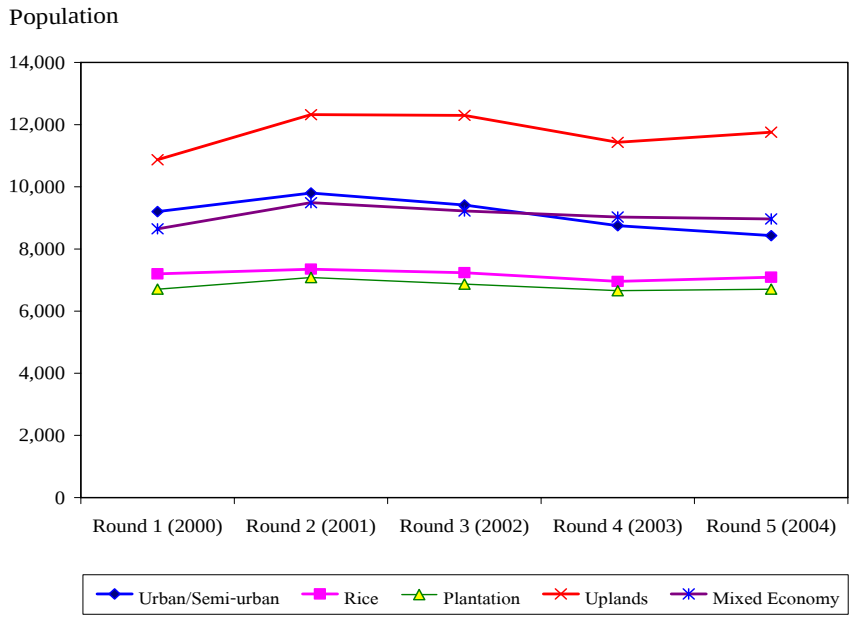

Figure 4.1 Population size in the census by strata and census rounds

4.2 Sex and age structure

Table 4.2 shows the percentage distribution of the study population by age and stratum. Again, we see the continuity in the age structure rather than change over time. This is consistent in all strata. The population pyramids shown in Figures 4.3-4.7 indicate the age and sex structure of the study population have changed very little over the five census rounds (see the 1st, 2nd, 3rd, and 4th Census reports).

Table 4.2 Percentage distribution of population by age group and strata, Round 5 (2004)

Age group	Urban/semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
0-4	6.8	8.0	7.9	12.0	7.8	8.8
5-9	8.6	10.1	10.7	12.4	9.9	10.5
10-14	8.9	9.8	10.6	11.6	10.1	10.3
15-19	7.4	6.9	7.0	5.6	6.5	6.6
20-24	6.2	4.7	5.2	5.2	5.2	5.3
25-29	6.9	6.4	7.0	6.3	7.4	6.8
30-34	7.7	7.6	8.0	7.9	8.0	7.8
35-39	8.2	8.5	8.0	7.9	7.9	8.1
40-44	8.9	8.2	8.2	7.2	7.7	8.0
45-49	7.8	6.7	7.2	7.0	7.3	7.2
50-54	6.5	6.0	5.4	4.7	6.1	5.7
55-59	4.1	4.0	3.9	3.6	4.4	4.0
60-64	3.8	3.8	3.6	2.8	3.7	3.5
65-69	3.0	3.2	3.1	2.3	2.8	2.8
70-74	2.2	2.8	2.0	1.8	2.6	2.2
75-79	1.5	1.7	1.1	1.0	1.4	1.3
80-84	0.9	1.0	0.6	0.3	0.7	0.7
85-89	0.4	0.6	0.2	0.2	0.3	0.3
90-94	0.2	0.1	0.1	0.1	0.1	0.1
95-99	0.0	0.1	0.0	0.0	-	0.0
100+	-	-	-	0.0	-	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	8,426	7,090	6,706	11,750	8,961	42,933

Note: The total number is different from Table 4.1 because cases with unknown age are excluded

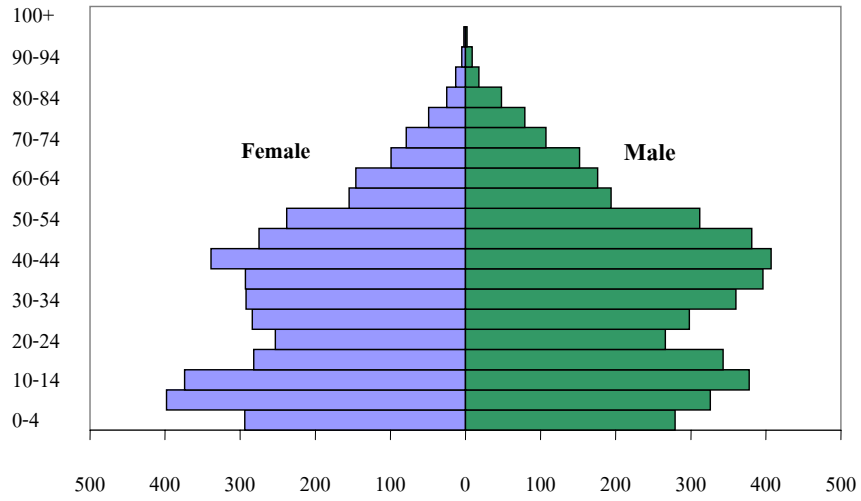

Figure 4.2: Population pyramid: Urban/Semi-urban

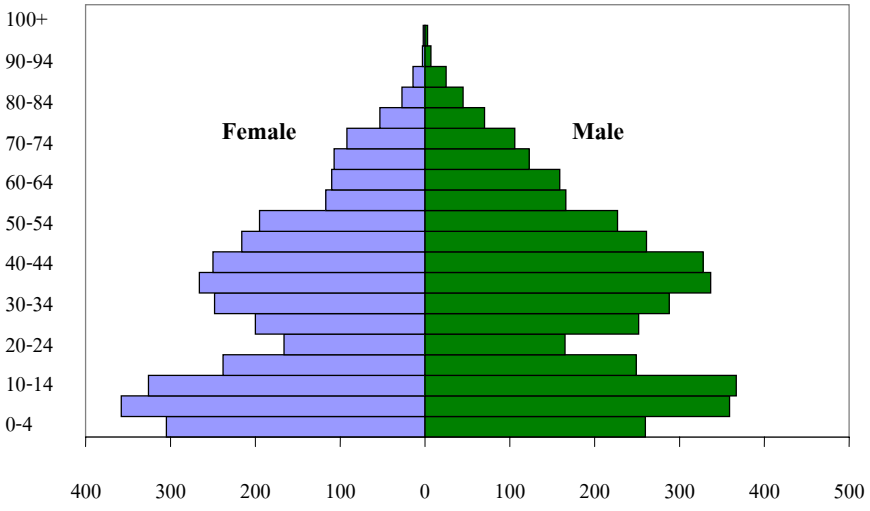

Figure 4.3: Population pyramid: Rice

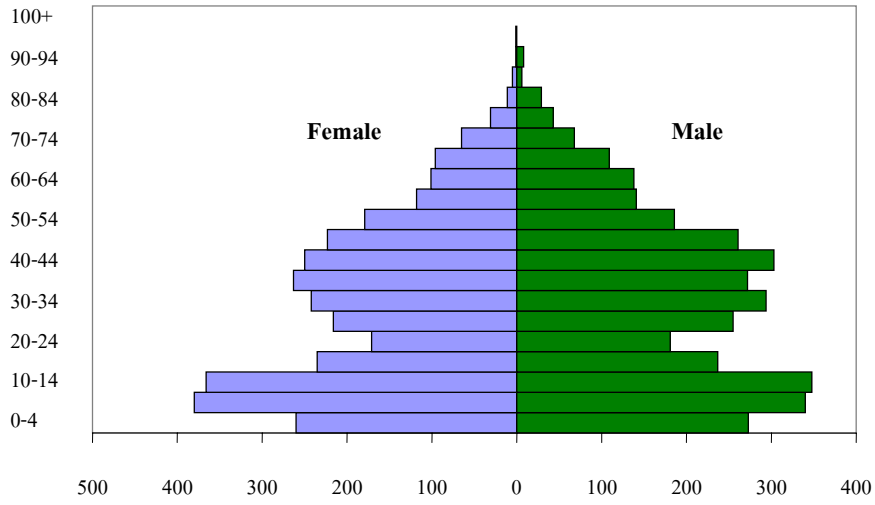

Figure 4.4: Population pyramid: Plantation

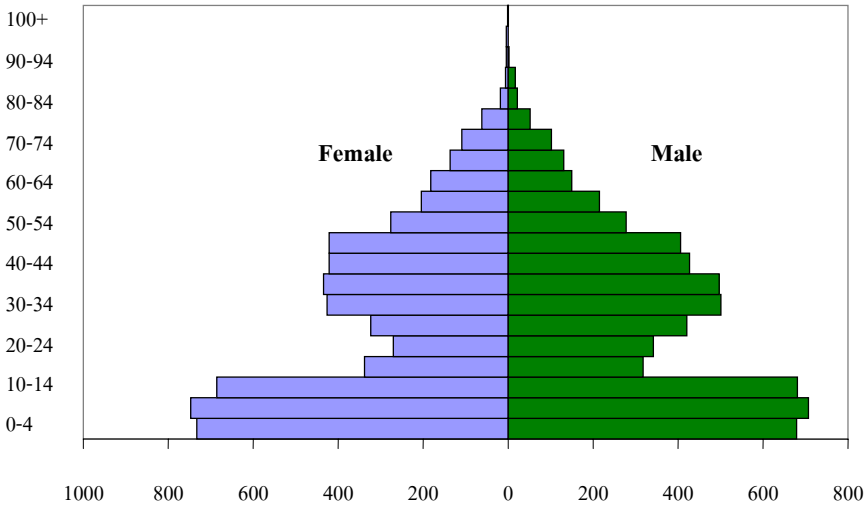

Figure 4.5: Population pyramid: Uplands

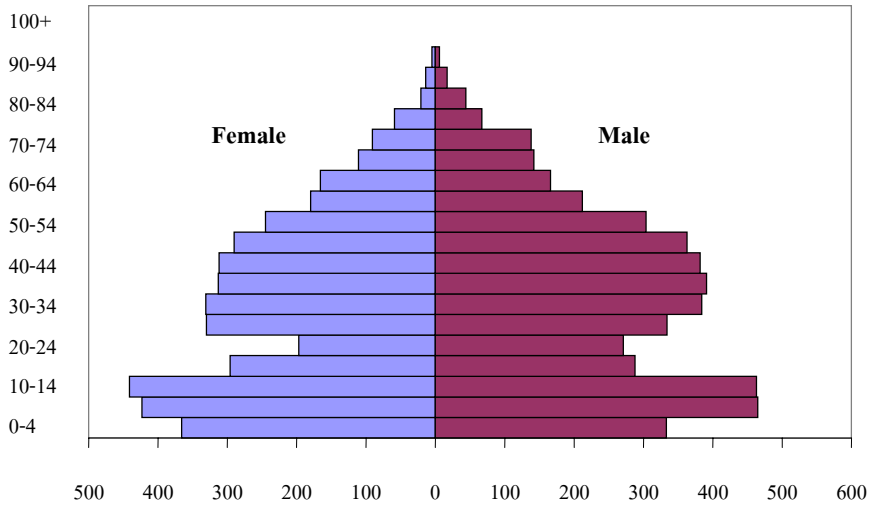

Figure 4.6: Population pyramid: Mixed Economy

Table 4.3 categorizes the study population into three age groups, under 15, 15-59, and 60 and above, and compares between the five census rounds. The proportion of the population under age 15 is highest in the Upland (36 percent) and lowest in the Urban/semi-urban stratum (24 percent). This pattern is observed in all census rounds. In contrast, for labor force ages (15-59) the proportion is highest in the Urban/semi-urban (64-65 percent), and lowest in the Upland strata (55-57 percent). The patterns reflect that urban areas in the province are magnets for attracting labor. The proportion of the elderly is highest in the Rice stratum (12-13 percent) and lowest in the Uplands (7-9 percent). The high proportion of elderly in the Rice stratum suggests the prevalence of elderly persons left-behind after migration of their adult children and deserves further research related to aging. Across strata, the proportion of the old age population has been increasing.

Table 4.3 Percent of population by age group, strata and census round

Age groups	Urban/ smi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
0 – 14						
Round 1 (2000)	24.5	28.7	30.3	36.1	28.5	29.9
Round 2 (2001)	25.1	28.5	30.1	36.1	27.9	29.9
Round 3 (2002)	24.8	28.6	29.9	35.5	27.3	29.8
Round 4 (2003)	24.8	27.8	29.9	36.6	27.8	29.9
Round 5 (2004)	24.3	27.9	29.3	36.0	27.8	29.6
15 – 59						
Round 1 (2000)	65.2	59.0	60.5	56.6	61.2	60.4
Round 2 (2001)	64.3	59.0	60.7	56.3	61.8	60.2
Round 3 (2002)	64.3	58.2	59.5	56.2	61.0	60.0
Round 4 (2003)	63.9	58.8	59.6	54.9	60.9	59.4
Round 5 (2004)	63.7	58.8	60.1	55.5	60.5	59.4
60+						
Round 1 (2000)	10.3	12.3	9.2	7.3	10.3	9.7
Round 2 (2001)	10.6	12.5	9.2	7.6	10.3	9.8
Round 3 (2002)	11.0	13.2	9.7	7.8	10.6	10.2
Round 4 (2003)	11.4	13.4	10.4	8.5	11.3	10.8
Round 5 (2004)	12.0	13.3	10.6	8.5	11.7	11.0

Data on the aged population, grouped into two categories, 60 and older and 80 and older (the oldest old), are shown in Table 4.4. Consistent in all census rounds, the proportions of both age groups are highest in the Rice stratum (12-13 percent for 60 and above and 1.6-1.8 percent for 80 and above) and are lowest in the Upland stratum (7-9 percent for 60 and above and 0.5-0.6 for 80 and above).

Table 4.4 Percent of population aged 60 and older and population aged 80 and older by strata and census round

Strata	60 years and older					80 years and older				
	Round 1 (2000)	Round 2 (2001)	Round 3 (2002)	Round 4 (2003)	Round 5 (2004)	Round 1 (2000)	Round 2 (2001)	Round 3 (2002)	Round 4 (2003)	Round 5 (2004)
Urban/ Semi-urban	10.3	10.6	11	11.4	*12.0*	1.2	1.3	1.4	1.4	*1.4*
Rice	12.3	12.5	13.2	13.4	*13.3*	1.6	1.7	1.8	1.7	*1.8*
Plantation	9.1	9.2	9.8	10.4	*10.6*	0.9	0.9	0.9	0.9	*0.9*
Uplands	7.3	7.6	7.8	8.5	*8.5*	0.5	0.6	0.6	0.6	*0.6*
Mixed Economy	10.3	10.4	10.7	11.3	*11.7*	1.1	1.3	1.2	1.2	*1.2*
Total	9.7	9.8	10.2	10.8	*11.0*	1.0	1.1	1.1	1.1	*1.1*
N	4,242	4,514	4,611	4,617	*4,713*	560	505	513	473	*491*

4.3 Sex ratio

The sex ratios, which indicate the number of males for 100 females, are presented in Table 4 classified by strata and age group. The sex ratio of the study population is at a level that is similar to the overall Thai population. There are more males than females at the young age group: 103 boys for 100 girls. The sex ratios then gradually decrease with age. At working ages, there were 86 males for each 100 females. The sex ratios are smallest at old ages. For the oldest old, there were 59 males for each 100 females. Between strata, the sex ratios of the old age are lowest in the Plantation stratum. The exceptions are the Mixed economy and Upland strata, which do not follow the general pattern. There were more girls than

boys in the mixed economy stratum. Meanwhile, in the Upland stratum, there are more males than females for those 60 and older.

Table 4.5 Sex ratio by age group and strata, Round 5 (2004)

Round	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
0 – 14	108.4	100.3	104.7	104.8	97.5	103.2
15 – 59	81.5	83.4	89.1	91.4	85.1	86.2
60+	70.7	75.8	77.6	109.4	80.5	82.2
80+	58.4	57.5	41.9	78.6	59.7	58.9
Total	85.5	86.1	91.4	97.4	87.5	90.1
N	8,426	7,090	6,706	11,750	8,961	42,933

Table 4.6 compares the sex ratios between the census rounds regardless of age group. The pattern of fewer males than females has been observed from the 1st round (2000) to the 5th round (2004). The sex ratios are relatively high in the Upland and the Plantation strata, especially in the Upland stratum, where the number of males exceeds the number of females in the 2nd (2001) and the 3rd (2002) rounds.

Table 4.6 Sex ratio by strata and census round

Round	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Round 1 (2000)	86.1	87.8	93.6	99.8	88.9	91.5
Round 2 (2001)	87.3	87.8	93.5	101.7	90.2	92.6
Round 3 (2002)	88.9	86.5	93.8	101.1	90.4	92.7
Round 4 (2003)	85.9	86.2	92.7	96.7	89.6	90.6
Round *5 (2004)*	*86.0*	*86.7*	*92.0*	*97.5*	*87.9*	*90.5*

4.4 Median age

Median age is the age where 50 percent of the population is older and the remaining 50 percent of the population is younger. The median age is shown in Table 4.7. The data compare the results found in the 1st to the 5th census rounds. The median age has increased by about two years from 29 years old in the 1st round (2000) to 31 years in the 5th round (2004). The study population in the Urban/semi-urban and Rice strata has the oldest median age, 33 and 32 years respectively. The study population in the Upland stratum, by contrast, has the youngest median age of 27 years old. This is consistent with the patterns of age structure described earlier, where the Upland stratum has the highest, and the Urban/semi-urban population has the lowest, proportion of the population in the young age group.

Table 4.7 Median age by strata and census round

Round	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Round 1 (2000)	31.0	30.0	28.0	26.0	30.0	29.0
Round 2 (2001)	31.0	30.0	28.0	26.0	29.0	29.0
Round 3 (2002)	30.0	29.0	28.0	25.0	29.0	28.0
Round 4 (2003)	*32.0*	*32.0*	*30.0*	*27.0*	*31.0*	*30.0*
Round *5 (2004)*	*33.0*	*32.0*	*30.0*	*27.0*	*31.0*	*31.0*

4.5 Dependency ratios

Table 4.8 presents the total, the young and the old dependency ratios by strata for the 5th census round. The total dependency ratio is the ratio of the number of population under 15 and the population aged 60 and older to the population aged 15-59 years old. The young dependency ratio is the ratio of the number of the population under 15 to the population aged 15-59 years-old. Meanwhile, the old dependency ratio is the ratio of the number of the population aged 60 and older to the population aged 15-59 years-old. The data show that overall, for every 100 persons in the working ages there are 68 persons in dependent ages, among whom 50 persons are aged under 15 and 18 are persons age 60 or older. The total dependency ratios from the 4th to the 5th rounds did not change due to unchanged age structure from the 4th to the 5th round.

Because the dependency ratios depend largely on the size of the population in each age group, the Upland population, which has the highest proportion of its population at young ages, has the highest dependency ratios in all census rounds. In contrast, the Urban/semi-urban population has the lowest dependency ratio as it has the lowest proportion of its population at young ages. For every 100 working-age persons in the Upland stratum there were 80 persons at dependent ages (65 children and 15 elderly), about 1.5 times higher than for the Urban/semi-urban stratum, where for every 100 persons in the labor force ages there were 57 persons at dependent ages (38 children and 19 elderly).

Table 4.8 Total, young, and old dependency ratios, by strata, Round 5 (2004)

Round	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Total	57.0	70.1	66.5	80.3	65.2	68.3
Young	38.2	47.4	48.8	64.9	45.9	49.9
Old	18.8	22.7	17.7	15.3	19.3	18.5
N	8,426	7,090	6,706	11,750	8,961	42,933

4.6 Summary

In the 5th round of the census (2004), 42,938 persons from 12,462 households were enumerated. There were more females than males, and this pattern was found in all areas. The stratum with the largest population is the Uplands. There is a continuity rather than change in the population size, age and sex structure from the 1st to the 5th rounds. At young ages, more males than females were enumerated. The sex ratio decreases with age. The Upland population has the highest proportion of the population at young ages, while the Urban/semi-urban stratum has the lowest. Accordingly, the dependency ratio is highest in the Upland and lowest in the Urban/semi-urban strata.

5. Social and Economic Status

Rossarin Gray

This chapter presents an overview of the social-economic characteristics of the census population by strata and by sex. Socio-economic characteristics refer to the main activity or main occupation of respondents aged 15 and older, education of individuals aged 7 years and older, and language normally used in the household.

5.1 Main occupation

The main occupation in the census is defined as the main activity reported by respondents. For those having more than one occupation and who could not decide upon their main occupation, the criterion for defining the main occupation is the activity for which the respondent devoted most of their working time. This chapter categorizes the main occupation into nine sectors: agriculture, academic/professional, administration, clerical, sales, service, transportation and communication, craft and labor and other occupations. Those in the categories of 'not working' and 'student' are also presented.

The main occupation of men and women is presented in Tables 5.1 and 5.2 respectively. Work in agriculture is the occupational sector of the highest proportion of males and females in all strata. The exception is for the urban/semi-urban stratum where the highest proportion is found in the craft and labor sector for males (25.8 percent) and sales for females (20.6 percent). Agriculture is, however, still a major occupational sector in the urban/semi-urban stratum, where it contains the second highest proportion of male and female respondents (16 percent and 14.9 percent

respectively). Comparing among strata, the stratum with the highest proportion employed in the agricultural sector is the uplands stratum for men (67.4 percent) and the plantation stratum for women (56.7 percent).

Table 5.1 Percentage distribution of male population aged 15 years and older by economic activity and strata

Economic activity	Strata				
	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy
Not working	11.1	10.2	9.0	7.4	9.6
Professional	5.7	1.2	0.9	2.7	2.0
Administration	1.8	0.9	0.9	1.1	0.9
Clerical	2.0	0.5	1.2	0.4	0.9
Sales	14.9	5.1	3.7	3.6	6.0
Services	6.8	1.6	2.7	2.9	3.0
Agriculture	16.0	56.4	63.8	67.4	52.0
Transport and communication	6.6	3.7	3.1	1.5	5.3
Craft and labor	25.8	14.3	10.4	6.3	14.3
Others	1.5	0.6	0.7	3.2	1.3
Students	7.2	5.4	3.7	3.3	4.5
Total	100	100	100	100	100
N	2,543	2,195	2,038	3,296	2,752

Table 5.2 Percentage distribution of female population aged 15 years and older by economic activity and strata

Economic activity	Strata				
	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy
Not working	28.7	24.6	20.3	32.7	24.0
Professional	7.9	1.4	1.5	2.5	2.2
Administration	0.6	0.1	0.2	0.1	0.4
Clerical	3.8	0.7	2.3	0.5	2.2
Sales	20.6	7.5	6.6	7.8	10.1
Services	6.1	1.7	3.1	2.1	4.0
Agriculture	14.9	47.8	56.7	46.5	45.4
Transport and communication	0.2	0.1	0.0	0.1	0.1
Craft and labor	9.2	9.7	4.8	3.3	6.6
Others	0.6	0.3	0.6	2.0	0.3
Students	7.6	6.2	3.9	2.5	4.9
Total	100	100	100	100	100
N	3,278	2,717	2,409	3,690	3,337

Residents of the urban/semi-urban stratum are different from those in other strata with respect to non-agricultural occupations. This is especially true for those working in the professional and service sector, who are much more likely to be found employed in the urban/semi-urban stratum than in the other four strata.

The proportion of men who are not in the labor force is highest in the urban/semi-urban stratum (11.1 percent), followed by the rice stratum (10.2 percent).

The proportion of women not in the labour force is higher than for men in all strata and highest in the uplands strata. It should be stressed, however, that many of the women who are classified as not working are engaged in housework, which is not categorized as an economic activity in this study.

5.2 Education

In Thailand, the level of education is probably the most important indicator of social status. This section presents data on educational levels of women and men aged 7 years and older. Education in this chapter refers to formal and informal education, excluding those who obtained a religious education and those with unknown information about their education or those whose answers are ambiguous and hence cannot be classified into completed grades. Education is classified into six levels: no schooling, some primary level, finished primary level, early secondary level, late secondary level, and higher than secondary level.

Table 5.3 shows not only that the distribution of completed education varies among strata, but also that there exists marked gender differences in education. Strata differentials in education are distinct. This is particularly evident between urban/semi-urban and other strata. The proportion of the population with no schooling is lowest in the urban/semi-urban stratum; about 3 percent for men and about 8 percent for women. The proportion also varies across other strata. The highest proportion with no schooling is found in the uplands stratum, where the proportion in this category is about 25 percent for men and 32 percent for women.

Table 5.3 Percentage distribution of population aged 7 years and older by level of education attainment, sex and strata

Sex/Educational attainment	Strata				
	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy
Males					
No schooling	2.6	4.6	7.5	25.3	6.2
< 6th grade	37.9	49.6	48.2	44.4	45.7
6th grade	12.8	19.9	22.5	11.7	18.1
Lower secondary or less	16.9	14.0	12.9	10.3	14.1
Upper secondary or less	15.2	8.8	7.0	5.7	10.7
More than secondary	14.4	3.2	1.9	2.7	5.3
Total	100	100	100	100	100
N	3,275	2,370	2,513	4,488	3,649
Females					
No schooling	7.5	10.2	19.1	32.1	12.5
< 6th grade	40.7	51.0	44.6	41.8	47.0
6th grade	11.3	17.9	18.8	11.4	17.2
Lower secondary or less	13.8	11.0	10.2	8.0	11.2
Upper secondary or less	12.3	7.0	5.1	3.9	7.1
More than secondary	14.5	2.9	2.1	2.7	5.1
Total	100	100	100	100	100
N	3,965	2,857	2,791	4,733	4,237

One factor that contributes to low levels of education in the uplands stratum is the significant number of ethnic minorities and migrant population living in the area. Not only do these minority groups have more limited access to education compared to Thais, the education that they may have received in their home country (usually Myanmar) was probably coded as no education. To a large extent, therefore, the percentage with no schooling implies no education in the Thai educational system.

The proportions with no schooling are similar for the plantation, rice, and mixed economy strata. The proportions are much higher than those of urban/semi-urban stratum, but much lower than in the uplands stratum.

The highest proportion of the population, irrespective of strata of residence and sex, completed less than a primary school level of education (less than 6 years), ranging from about 40 percent in the urban/semi-urban stratum to about 50 percent in the rice stratum.

The proportion of the population that completed more than a primary level of education in the urban/semi-urban strata is considerably higher than in other strata. This differential is particularly evident for more than an upper secondary level of education. The proportion of males in the urban/semi-urban stratum with more than an upper secondary level of education is about 5 times higher than for males in the rice and the uplands strata, about 7 times higher than for men in the plantation stratum, and about 3 times higher than for men in the mixed economy stratum.

Differentials by gender are also apparent. On average, women have lower levels of education than men in all strata. Compared to men, the proportion of women with no education is higher. Gender differentials between strata also vary. Figure

5.1 shows the percentage of women and men without any schooling by strata. The gender gap is smallest in the urban/semi-urban stratum, while it is largest in the plantation stratum. The gender gap in education for the uplands stratum is similar to that of the mixed economy stratum.

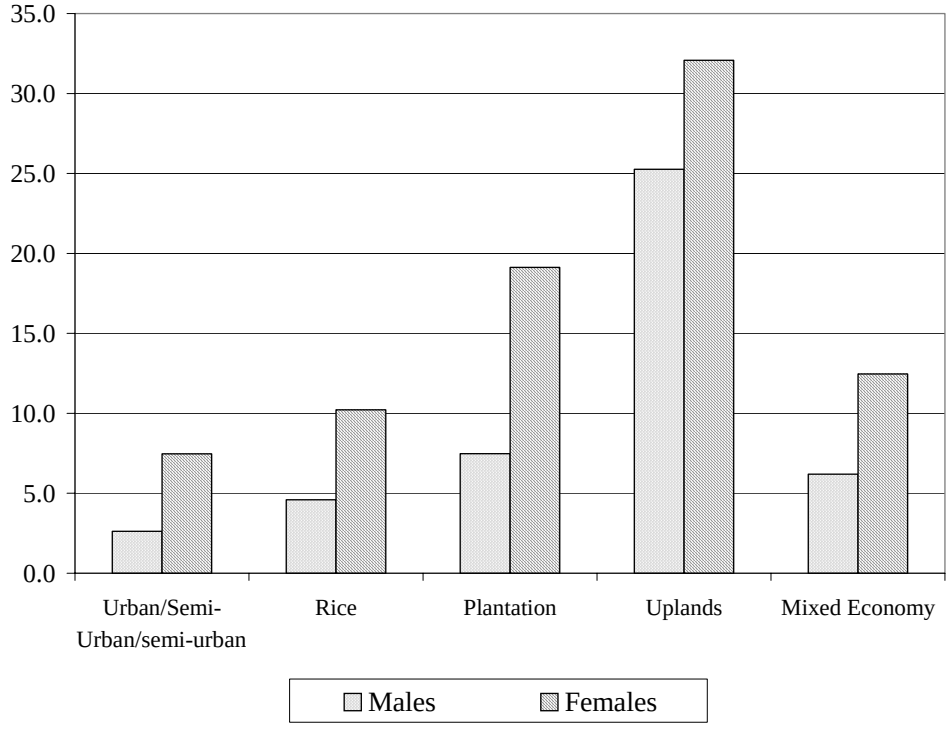

Figure 5.1

Percentage distribution of population with no school education by sex and strata

5.3 Language normally used in the household

Languages people use in their normal daily activities reflect the cultural diversity of a population, and also suggest diversity in ethnic group affiliation. Table 5.4 presents

the percentage distribution of the household population by language spoken at home. Except for the uplands stratum, the majority of the study population speak Thai as their daily language (more than 90 percent).

In the uplands stratum, about 51 percent of households speak Thai at home. For households where Thai is not the language of daily use, the languages used are quite varied. The most common non-Thai languages are Karen, Karang, and Pakayaw (about one fifth). About one tenth of households speak Mon or Lao. The proportion of households speaking Burmese is about 6 percent.

Table 5.4 Languages spoken in daily life by strata

Language	Strata				
	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy
Thai	98.0	97.7	95.7	51.0	93.8
Mon	0.1	0.1	0.1	10.2	1.7
Lao	1.2	2.2	4.1	10.5	2.9
Burmese	0.3	0.0	0.1	5.9	0.9
Karen/Karang/ Pa Ka Yaw	0.2	-	-	21.4	0.4
Others	0.2	-	0.0	1.0	0.4
Total	100	100	100	100	100
N	2,496	2,045	1,973	3,324	2,601

5.4 Summary

Agriculture remains the main occupational sector of the study population, followed by craft/labor and sales among men, and sales and craft/labor among women. The exception is for the population in the urban/semi-urban stratum, where the highest proportion of males is engaged in the crafts/labor, sales and agriculture sectors respectively, and that of females is engaged in sales, agriculture and crafts/labor sectors respectively. The proportion of men who are not in the labour force is highest in the urban/semi-urban stratum. The proportion of women not in the labour force is highest in the uplands stratum.

Educational levels vary by strata, especially between urban/semi-urban and other strata. There are also substantial differentials in completed levels of education between men and women. In the urban/semi-urban stratum the proportion with no schooling is lowest, while the proportion completing more than a secondary level of education is highest. By contrast, the proportion with no schooling is highest in the uplands stratum and similar in the plantation, the rice and the mixed economy strata.

Men, on average, have higher educational levels than women in all strata. The gender gap is least evident in the urban/semi-urban stratum and most evident in the plantation stratum.

Most households use Thai as their daily language. The exception is for the uplands stratum, where less than two thirds of households speak Thai on a daily basis. The remaining households in the uplands stratum speak Karen, Karang, and Pakayaw. The other languages most often used are Mon and Burmese.

6. Migration

Sureeporn Punpuing and Philip Guest

Migration is defined as a movement in or out of the village of current residence during the 12 months prior to the census. It is important to note that this analysis includes migration within and out of field site communities and also the movement of entire households. A minimum of one month of residence is required for a person to be defined as a usual resident of the household. The period of migration is between July 1st, 2003 and June 30th, 2004. Migration information is obtained from the household questionnaire. In Round 5 (2004) the list of family members from Round 4 (2003) was updated. Therefore if a family member who was listed in Round 4 (2003) had moved out from the household, he/she is defined as an out-migrant. On the other hand, if a new family member moved into the current household, he/she will be defined as an in-migrant. Those who remained in the household for both censuses are non-migrants. Persons belonging to new households and who had not been enumerated as usual residents in Round 4 (2003) but who are usual residents in Round 5 (2004) were defined as in-migrants during 2003-2004.

In-migration and out-migration rates were calculated from the number of in-migrants or out-migrants per 100 population at the time of census. As Round 1 (2000) could only identify in-migration (see 2000 baseline report), this report includes a comparison of in-migration from Round 1 (2001) to Round 5 (2004), and out-migration from Round 2 (2001) to Round 4 (2003).

About 75 percent of the field site population were non-migrants in the year prior to Round 5, with an in-migration rate of 10 and an out-migration rate of 15 per hundred population, which results in a net out-migration rate of 5 per hundred population (see Table 6.1).

Both in-migration and out-migration rates, 18 and 12 respectively, were highest in the uplands stratum. In the rice stratum, the out-migration rate was lowest, nine per hundred, while the urban/semi-urban stratum has the lowest in-migration rate (8) (see Table 6.1 and Figure 6.1). The net out-migration rate was highest in the urban/semi-urban stratum. This is partly due to the high mobility of the population in urban/semi-urban the stratum, with many households that had rented households at Round 4 having already moved out from the study area during the following year. There were also some new households that had moved into the urban/semi-urban areas, but refused to provide information to enumerators (the refusal rates have increased in this stratum over every round of the census). This may have resulted in the low level of in-migration in the urban/semi-urban stratum.

Table 6.1 Percentage distribution by migration status in the year before Round 5 (2004)

	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed-Economy	Total
Out-migration to other villages	17.0	9.3	12.5	18.3	13.2	14.7
In-migration from other villages	8.2	8.3	10.8	11.7	9.9	9.9
No-migration	74.8	82.4	76.7	70.1	76.9	75.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	9,729	7,488	7,240	13,102	9,793	47,352

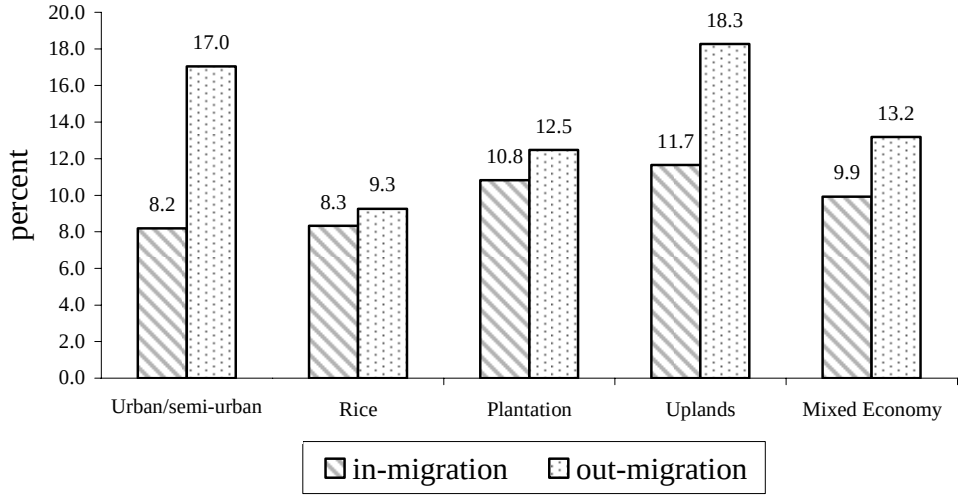

Figure 6.1 In-migration and out-migration rates, Round 5 (2004)

The findings from Round 1 (2000) to Round 5 (2004) indicate that the out-migration rate has increased, especially in the urban-semi-urban, uplands and mixed economy strata. However, in Round 5 (2004), the out-migration rates in the rice and plantation strata were similar to those recorded in Round 4 (2003). The in-migration rates declined from Round 1 (2000) to Round 4 (2003), while the in-migration rates in every strata increased in Round 5 (2004).

6.1 In-migration

The in-migration rate recorded the Round 5 (2004) was higher than that of the Round 4 (2003) in every strata. The migration rate in the urban/semi-urban stratum increased one point (from 7 to 8), 6 to 8 in the rice, 6 to 11 in the

plantation, 8 to 12 in the uplands, and 6 to 10 in the mixed economy strata (see Figure 6.2). The in-migration rate has increased from previous census rounds.

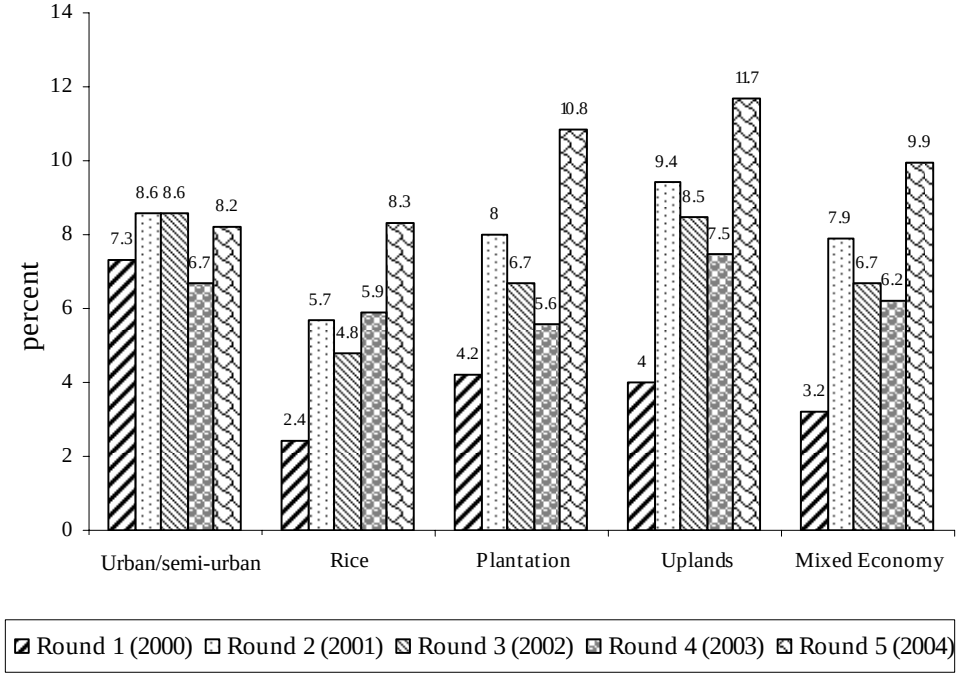

Figure 6.2 In-migration rate, Round 1 (2000) - Round 5 (2004)

In total, the male in-migrant rate was higher than female in-migrant rate. The in-migration rates for males were higher than that of females in every stratum. When the in-migration rates are distributed by age and sex, it was found that the in-migration rates of males range from 5 to 27 per hundred population in the same age group, while the in-migration rates of females range from 5 to 20 per hundred population in the same age group. The in-migration rates for both males and females are high for the age group 15-19, 20-24 and 25-29, the highest in-migration are for the population age 20-24 years (see Table 6.2).

For males, the in-migration rate for age 20-24 years was the highest in the plantation stratum (31 per hundred males). For females, the in-migration rate for the same age group was the highest in the mixed economy stratum, at 26 per hundred.

For males, the in-migration rates at age 15-19 years were 12 in the urban/semi-urban stratum, 18 in the rice stratum, 31 in the plantation stratum, 21 in the uplands stratum and 16 in the mixed economic stratum. For females, the percent of in-migrants who were aged 15-19 years were 16 percent in the urban/semi-urban stratum, 16 percent in rice stratum, 19 percent in the plantation stratum, 20 percent in the uplands stratum and 11 percent in the mixed economic stratum (see Table 6.2).

Table 6.2 Percent migrants: July 1st, 2003 - June 30th, 2004 by strata, sex and age

Age	Urban/Semi-urban		Rice		Plantation		Uplands		Mixed-Economy		Total	
	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration
Male												
0-9	6.5	15.0	7.3	5.6	8.0	8.8	8.4	13.6	7.5	13.1	7.7	11.9
10-14	5.4	11.8	4.2	6.3	6.4	12.4	9.1	17.2	7.5	10.1	7.0	12.5
15-19	11.7	32.2	17.9	26.8	31.0	33.0	20.9	43.3	15.7	30.5	19.1	34.0
20-24	24.8	37.1	30.3	31.4	31.5	27.2	25.0	43.7	25.3	35.1	26.7	36.3
25-29	13.0	27.1	22.4	21.4	17.9	21.8	22.7	33.8	17.5	18.1	18.6	25.1
30-34	12.3	22.2	13.7	12.5	21.7	17.5	15.0	22.5	13.5	21.4	15.0	20.0
35-39	10.5	21.9	8.0	8.7	13.1	16.3	14.1	20.5	13.7	12.8	12.2	16.8
40-44	8.8	13.9	5.0	6.6	13.8	11.2	10.7	16.8	7.1	12.1	9.2	12.8
45-49	6.5	13.6	6.4	7.3	8.0	7.6	10.5	9.2	13.9	12.0	9.4	10.1
50-54	3.9	11.4	4.0	7.5	2.6	8.4	13.9	14.5	6.3	9.1	6.7	10.6
55-59	5.9	10.6	7.5	6.7	4.9	4.9	8.6	11.4	15.1	9.4	8.9	9.1
60+	3.0	8.2	5.6	5.6	4.6	7.9	8.8	10.1	5.5	8.1	5.7	8.1
Unknown	0.0	100.0	-	-	0.0	100.0	0.0	85.7	0.0	0.0	0.0	85.7
Total	**9.0**	**18.4**	**9.8**	**10.6**	**12.7**	**14.1**	**12.5**	**19.5**	**11.2**	**15.1**	**11.2**	**16.2**

Table 6.2 (Continued)

Age	Urban/Semi-urban		Rice		Plantation		Uplands		Mixed-Economy		Total	
	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration
Female												
0-9	5.4	13.2	5.2	4.9	7.7	8.0	7.9	14.5	6.5	8.9	6.8	10.8
10-14	5.7	10.2	5.6	5.1	8.2	9.3	8.7	16.8	5.7	10.6	7.0	5.3
15-19	16.2	24.9	15.3	31.4	18.9	31.3	19.9	45.6	11.7	33.4	16.4	24.1
20-24	17.4	35.9	22.1	22.1	16.9	23.1	18.6	27.5	26.2	23.4	20.1	15.2
25-29	10.9	32.1	14.7	15.1	10.2	16.4	14.7	21.3	13.0	14.7	12.8	9.6
30-34	12.3	20.5	10.9	11.2	13.7	8.5	10.1	16.5	13.5	12.0	11.9	5.5
35-39	6.4	17.2	4.6	6.1	8.0	13.0	8.4	10.6	7.1	11.6	7.0	3.6
40-44	5.3	13.3	3.3	3.6	10.1	7.3	8.6	13.0	6.4	9.2	6.7	2.6
45-49	4.5	12.9	4.2	3.4	5.9	5.9	10.8	8.9	4.5	7.6	6.2	2.1
50-54	2.7	8.4	2.2	4.3	3.6	5.7	8.3	9.0	6.4	5.4	4.8	1.8
55-59	4.8	8.6	4.7	3.5	2.7	5.5	8.6	9.4	6.3	6.7	5.7	1.5
60+	4.8	7.4	3.3	2.4	3.6	4.4	9.1	11.9	7.0	6.3	5.6	2.4
Unknown	0.0	100.0	0.0	0.0	0.0	100.0	0.0	50.0	0.0	100.0	0.0	0.0
Total	**7.7**	**16.5**	**7.0**	**8.0**	**8.9**	**10.8**	**10.4**	**16.5**	**8.8**	**11.7**	**8.7**	**5.9**

Approximately 57, 55, 50, 50 and 40 percent of in-migrants in the uplands, urban/semi-urban, rice, mixed economy, and plantation strata respectively, migrated within Kanchanaburi. The next largest proportion came from other provinces in the Central region. The proportion of in-migrants from Bangkok was the highest in the rice stratum (14 percent), and lowest in the urban/semi-urban stratum (nine percent). The proportion of in-migrants from the Northeast region was the highest in the plantation (11 percent), and lowest in the urban/semi-urban (two percent). In every study area, only small proportions of in-migrants were from the North or South regions of Thailand. The uplands stratum has a special characteristic, with about four percent of in-migrants originating from abroad while there was only a very small proportion of international in-migrants in other strata, and in the rice stratum that there was no recorded international in-migration (see Table 6.3). The majority of the international in-migrants came across the border from Myanmar.

Comparing place of origin for the in-migrants from Round 1 (2000) to Round 5 (2004), indicates a similar pattern of place of origin, with about half of the movement within Kanchanaburi province. Furthermore, all censuses found that the plantation stratum remains a major destination for migrants from other provinces in the Central and Northeast regions. This is largely seasonal in-migration. There is a high demand for laborers during the cane-cutting period. When there is not enough labor from Kanchanaburi province workers from other provinces are recruited.

Table 6.3 Percentage distribution of destination and origin place of migration by strata, Round 5 (2004)

Region	Urban/Semi-urban		Rice		Plantation		Uplands		Mixed-Economy		Total	
	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration	In-migration	Out-migration
Kanchanaburi	55.5	43.3	49.9	47.1	39.7	44.1	56.7	45.9	49.5	45.6	51.3	45.1
Bangkok	9.4	8.8	14.4	15.8	11.8	13.1	9.9	9.5	11.9	14.5	11.1	11.4
Central	26.0	17.4	27.4	27.6	30.6	27.9	20.6	15.2	28.8	24.1	25.7	20.2
Northeast	2.4	2.2	3.0	3.7	10.6	4.6	3.1	2.0	4.9	5.2	4.6	3.2
North	4.0	1.8	3.3	2.2	4.4	3.7	2.5	1.7	1.3	0.8	2.9	1.9
South	1.3	0.7	1.7	1.6	1.8	2.3	2.6	1.0	2.2	1.3	2.1	1.2
Foreign	1.4	0.4	0.0	0.4	0.8	0.2	4.4	5.1	1.5	1.7	2.1	2.3
Unknown	0.0	25.4	0.3	1.5	0.3	4.0	0.1	19.5	0.0	6.8	0.1	14.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	**791**	1,652	**603**	673	**765**	884	**1,512**	2,377	**952**	1,272	**4,623**	6,858

6.2 Out-migration

The level of out-migration has increased in every study area since Round 2 (2001), however in Round 5 (2004), the out-migration rates in the rice and plantation strata were similar to those of Round 4 (2003) (see Figure 6.3)

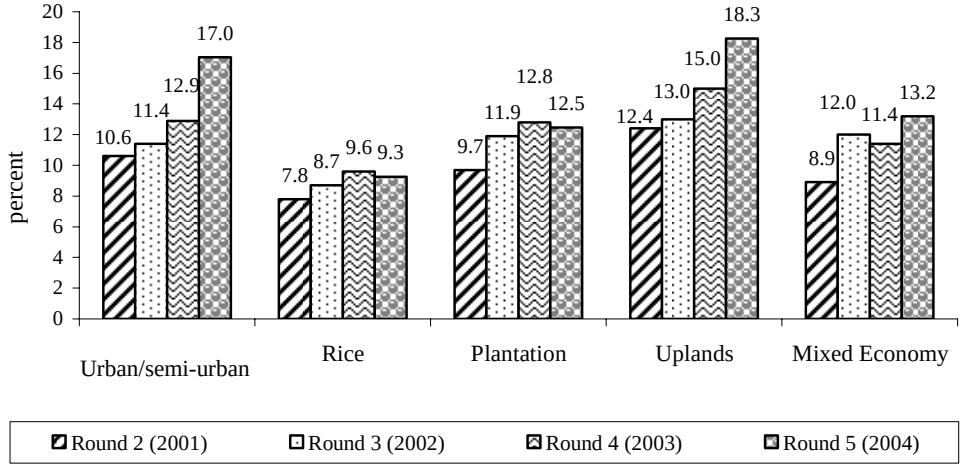

Figure 6.3 Out-migration rate, Round 2 (2001) - Round 4 (2003)

Overall, the out-migration rate for males was higher than that of females in every strata. When the out-migration rates are distributed by age and sex, the out-migration rates of males range from 8 to 36 per hundred, while the out-migration rates of females range from 2 to 24 per hundred population. The out-migration rates for both males and females are high for the age groups 15-19, 20-24 and 25-29, the highest male out-migration rate was in age group 20-24, but the highest female out-migration rate was in age group 15-19 (see Table 6.2).

Similar to the in-migration patterns, the out migration of males aged 20-24 was the highest in the uplands stratum (44). It was the lowest in the plantation stratum (27). For females age 15-19 years, the out-migration rate was the highest in the uplands (46), and the lowest was 25 per hundred population in the urban/semi-urban stratum (see Table 6.2).

Approximately 47, 46, 46, 44 and 43 percent of out-migrants in the rice, mixed economy, uplands, plantation, and urban/semi-urban strata respectively, migrated within Kanchanaburi. Other provinces in the Central region were major destinations of out-migrants in every study area, particularly for plantation and rice strata migrants, where about 28 percent of migrants moved to other Central region provinces. The proportion of out-migrants to Bangkok was highest in the rice stratum (16 percent), and lowest in the urban/semi-urban stratum (9 percent). The proportion of out-migrants to the Northeast region was highest in the mixed economy stratum (five percent), and there were small proportions of out-migrants to the North and the South. Five percent of migrants from the uplands moved to foreign countries, mainly Myanmar, while about two percent of out-migrants in the mixed economy strata moved to foreign countries (see Table 6.3).

6.3 Summary

The out-migration rate was higher than the in-migration rate. The overall net out-migration rate was 5 per hundred population. Both the in-migration and out-migration rates in Round 5 (2004) were higher than those of the previous rounds in every study area. About three in four of the population (75 percent) in the field site study did not migrate during the period July 1st, 2003 - June 30th, 2004.

Both the in-migration and out-migration rates were the highest in the uplands stratum (12 percent and 18 percent respectively). In the rice stratum, there was little population change from migration, with the net out-migration of one percent the lowest rate of the five study strata.

Males were more migratory than females, and the migration rates at ages 15-29 were the highest compared with those of other age groups. This probably is related to migration for education, work or marriage.

In the field site, both in-migration and out-migration was mainly short-distance migration, particularly within Kanchanaburi province, and between Kanchanaburi and other provinces in the Central region or Bangkok. Kanchanaburi is a province in the Central region, and the travel between some districts of Kanchanaburi and some provinces in the Central region or Bangkok can be undertaken within a few hours. Migration between Kanchanaburi province and the Northeast, North and South regions seems to mainly be a result of the in-migration and out - migration (probably return migration) of migrant workers. Moreover, it is likely that the international migration is also short-distance migration between uplands area of Kanchanaburi province and the country on the other side of the border, Myanmar.

7. Fertility and Family Planning

Varachai Thongthai

An increase of the population enumerated in a demographic surveillance system can be due to migration and/or fertility. Whilst migration has the potential to affect population composition at all ages and for both males and females, fertility can only increase the population at young ages. This chapter will explore both levels and trends in fertility.

Family planning is an important factor affecting fertility, especially if couples want to postpone their childbearing or terminate pregnancy. Apart from the contraceptive prevalence rate, this chapter will also describe outlets where contraceptives are available as well as satisfaction with contraceptive services.

7.1 Fertility

The Total Fertility Rate (TFR) is an indicator of fertility that measures the level of fertility. Trends in fertility can be described by total fertility rates over time. Fertility patterns are measured by age-specific fertility rates (ASFR), which describe the fertility of women in different age groups. The total fertility rate is the sum of age-specific fertility rates.

Both TFR and ASFR are indicators of current fertility. Current fertility measures the number of live births that occurred in a year. However, another fertility indicator, children ever born (CEB), is a measure of the total live births from the beginning of reproductive ages till the present. CEB is therefore a measure of

cumulative fertility. Moreover, the cumulative fertility of women at the end of reproductive period (50 years old) is an indication of completed fertility.

7.1.1 Current fertility

Although current fertility in the study area is at the replacement level (TFR equals 2.08), there are still fertility differentials amongst strata. The current fertility is lowest in the Urban/semi-urban (TFR = 1.56), followed by the Rice cultivation and Plantation strata (TFR = 1.79 and 1.87, respectively). These three strata experience below replacement fertility. The current fertility in the Mixed economy stratum is at about replacement level (TFR = 1.98). However, the Uplands stratum has a current fertility level that is above the replacement level (TFR = 2.92).

The pattern of fertility in this population can be described as controlled fertility, which is the opposite of natural fertility. In natural fertility, marriage is universal and there is no interference (family planning) in fertility after marriage. In this situation, the pattern of fertility as measured by age specific fertility rates resembles an inverted U shape. At the beginning of reproductive age (15-19 years old), the age specific fertility rate is low. The rate increases rapidly in the next age group (20-24 years old), which typically has the highest level of fertility. The rates continue at this high level till near the end of reproductive ages and drop rapidly in the age group of 45-49 years old.

The shape of the fertility pattern in a controlled fertility population is skewed to the right. The age specific fertility rates are low amongst women aged 15-19 years old. The rate then increases rapidly reaching a peak in the age groups 20-24 or 25-29 years old. After that the rates decline rapidly and stay at a low level till

the end of reproductive ages (45-49 years old) (see Figure 7.1). Sometimes ASFR reaches 0 (zero), even before the end of reproductive life, either 45-49 or 40-44 years old.

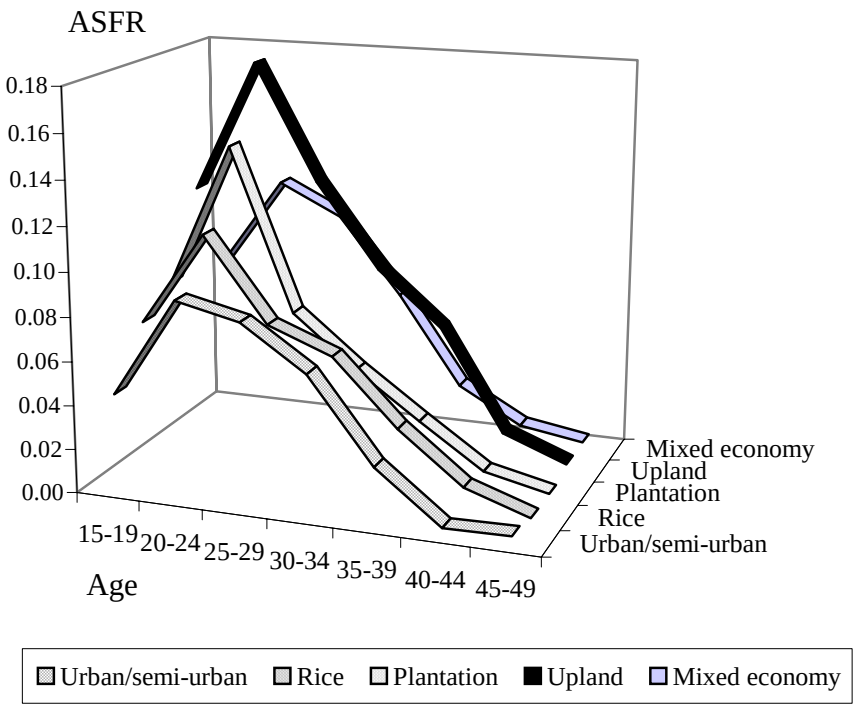

Figure 7.1 Age specific fertility rates by strata, 2004

Since marriage is not universal in a controlled fertility population, postponing marriage is a common practice. Even after marriage, couples may adopt contraception in order to postpone their first birth. These postponements of marriage and first birth are the cause of low fertility at the beginning of reproductive age. Birth spacing could also occur after the first birth or between births.

In a controlled fertility population, couples use contraception in order to stop pregnancy once a desired family size has been met. This causes the sharp drop in fertility after the peak period of fertility of women in their twenties. Due to contraceptive practice, fertility will be low till the end of reproductive ages. In the study area, the fertility pattern is as described as a controlled fertility population, with the fertility level highest in the 20-24 years age group (see Table A7.1 in appendix).

The pattern of fertility in each stratum is similar to the overall pattern, with fertility low at the beginning of the reproductive ages, rising to a peak at ages 20-24, then declining sharply thereafter. However, the fertility patterns of the Urban/semi-urban and Mixed economy strata differ somewhat to this general pattern, with the peak not as high as in the other three strata and the decline in fertility more gradual (see Figure 7.1 and Table A7.1 in appendix).

It should be noted that in the Uplands stratum, where fertility is highest, the age-specific fertility rates are higher than in other strata for every age group. Moreover, the fertility level at the beginning of the reproductive ages is even higher than the peak of the other three strata, namely the Urban/semi-urban, Rice, and Mixed economy strata (see Figure 7.1 and Table A7.1 in appendix).

7.1.2 Completed fertility

Completed fertility is measured by the average number of children ever born to women at the end of the reproductive period (50 years old). Completed fertility represents the number of children that a woman has on average, provided all ever born children are still alive. Hence, in reality the number of children per woman is smaller than completed fertility due to the deaths of some children.

If fertility has not changed for a long time, or at least the length of reproductive period (about 35 years), the total fertility rate will be equal to completed fertility. The difference between the total fertility rate and completed fertility provides an indication of a fertility transition.

The completed fertility of the study areas has not changed in the past five years. There are about 3 children per woman on average (between 2.9 to 3.1), which is higher than current fertility. This means that fertility has been declining in the last 20 years.

The pattern of completed fertility amongst strata is similar to the pattern of current fertility. The Uplands has the highest level of fertility, followed by the Plantation stratum. The area of lowest fertility is the Urban/semi-urban stratum. While the Rice and Mixed Economy strata have fertility levels that are intermediate (see Table 7.1).

Table 7.1 Average number of children ever born of 50 years old women by strata and round

Strata	2000	2001	2002	2003	2004
Urban/semi-urban	2.2	2.1	2.2	2.3	2.2
Rice	3.0	2.6	3.2	2.9	2.7
Plantation	3.9	3.5	3.4	3.0	3.0
Upland	4.4	4.0	3.8	4.0	4.1
Mixed economy	2.2	2.9	3.0	2.4	2.6
All	3.0	3.0	3.1	2.9	2.9

7.2 Family Planning

Family planning or contraception is widely used in the field site population. As mentioned earlier, couples use contraception to postpone their pregnancies till they are ready to have first child or another child. They also use contraception to stop pregnancies when they do not want any more children.

7.2.1 Contraceptive Prevalence Rate (CPR)

The contraceptive prevalence rate is measured as the percent of currently married women of reproductive ages who are using any kind of contraceptive method. The contraceptive prevalence rate in the study area is 79 percent, meaning that 8 out of 10 currently married women in reproductive age are using contraception. This very high level of contraception is the main reason for the low levels of fertility described above.

Even with the already high contraceptive prevalence rate, the CPR has increased in the last five years. Starting at 74 percent in 2000, CPR increased to 77 percent in 2001, to 79 percent in 2002, declined marginally to 78 percent in 2003, and rose again to 79 percent in 2004.

The contraceptive prevalence rate in the Urban/semi-urban stratum is not the highest but its fertility is the lowest. This is because of delayed marriage as well as high proportions of single women (see details in chapter 8). Moreover, the areas with the highest contraceptive prevalence rate are not the areas with the lowest fertility. These areas are the Rice, Plantation, and Mixed economy strata. Nevertheless, the Uplands stratum, where the CPR is the lowest, displays the highest fertility (see Table 7.2).

Table 7.2 Contraceptive prevalence rates by method and strata, 2004

Method	Urban/ semi-urban	Rice	Plantation	Upland	Mixed Economy	Total
Female sterilisation	37.0	27.9	27.3	20.0	33.5	28.3
Male sterilisation	3.1	1.7	2.1	1.3	1.6	1.9
Norplant	0.1	0.6	1.3	2.2	1.7	1.3
Injectable	8.2	24.7	23.3	20.0	19.2	19.0
IUD	0.4	0.7	0.5	1.1	0.5	0.7
Pills	23.2	24.6	25.6	25.0	23.7	24.4
Condom	3.8	0.7	1.2	1.0	1.1	1.5
Others *	4.3	1.3	1.2	1.7	1.1	1.9
CPR	80.1	82.1	82.5	72.4	82.4	79.1

Note: * includes safe period and withdrawal

The most commonly used method of contraception is female sterilisation, followed by the oral pill and injectable. These three methods together comprise 91 percent of current users. Therefore, all other contraceptive methods share only one-tenth of users. It should be noted that the injectable is more common in rural areas than in urban areas. Significant proportions of urban women rely on condoms, male sterilisation, and safe period and withdrawal for their contraceptive needs (see Table 7.2).

7.2.2 Sources of contraception

Government outlets are still the main point of access to contraception, with about three-fourths of current contraceptive users obtaining their contraceptive supplies from this source. Government hospitals serve around 45 percent of women and health centres serve around 30 percent. The remaining 25 percent of users access their contraceptives through private outlets. The health centre is used more often than hospitals in the rural areas but less often in the urban areas (see Figure 7.2 and Table A7.2 in appendix).

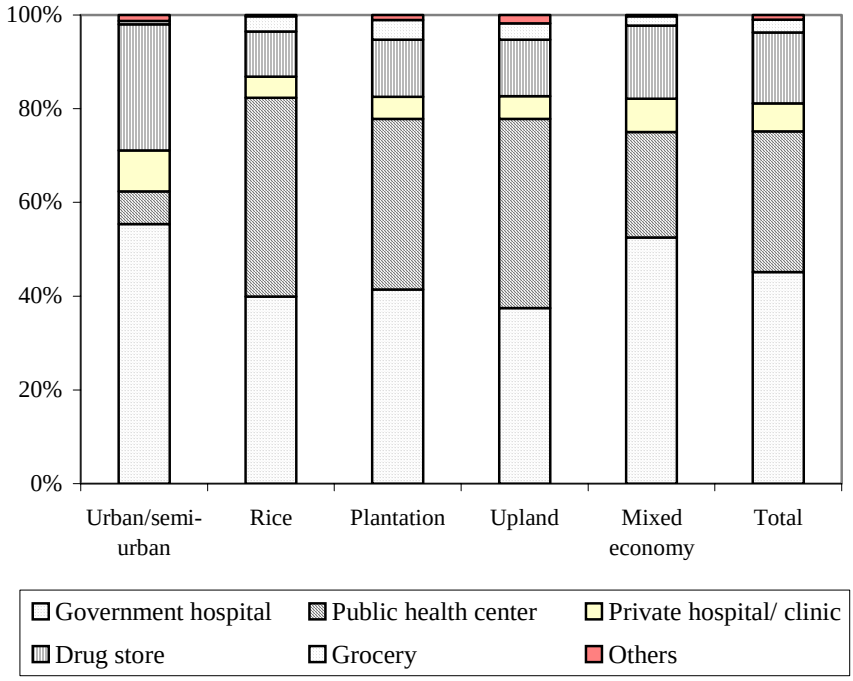

Figure 7.2

Percent distribution of contraceptive users by source and strata, 2004.

Drug stores are the most frequently used private outlet. About 15 percent of contraceptive users receive their contraceptives from drug stores. Private hospitals and private clinics do not play a significant role in contraceptive distribution. Only six percent of current users seek services from private hospitals or clinics.

Private outlets are accessed more often in urban than in rural areas. Drug stores serve more than one-fourth of users in the Urban/semi-urban stratum, whilst private hospitals or clinics serve about 9 percent of users. Nevertheless, in the Urban/semi-urban stratum, the majority of users still seek services from government outlets, in which the government hospitals provide most of the services (see Figure 7.2 and Table A7.2 in appendix).

7.2.3 Cost of contraception

The prevalence of contraception is influenced by the cost of contraception. Besides the need to use contraception and its availability, cheaper prices or free methods is a factor that users take into consideration when deciding whether to use contraception.

Around two-fifths of all users receive contraception free of charge. The proportion obtaining free services is higher in rural areas than in urban areas. The highest proportion obtaining free service is for male sterilisation, followed by IUD and implants (see Table 7.3). The lowest proportion obtaining free services are for the oral pill and condom, for which only one-fourth of users received services free of charge.

Table 7.3 Percent of users who received services free of charge by methods and strata, 2004

Method	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Female sterilisation	38.1	46.3	45.8	50.4	40.9	43.8
Male sterilisation	82.0	90.9	79.3	72.7	76.7	80.2
Norplant	50.0	75.0	58.8	74.1	43.3	63.1
Injectable	26.1	44.6	50.3	43.4	43.2	43.4
IUD	66.7	70.0	62.5	80.8	55.6	71.0
Pills	8.9	31.9	24.6	30.5	19.1	23.6
Condom	17.9	22.2	25.0	34.8	31.6	24.4
Total	29.7	42.8	41.5	43.1	36.1	38.8

For the two most popular methods, female sterilisation and injection, about two-thirds of the users who receive the services free of charge. It should be noted that

female sterilisation is a one time service and could be performed at the time of delivery. Hence, there are 29 percent of female sterilisation users who reported that the charge was already included in the delivery fee. Moreover, about 6 percent could not remember the fee, as it was too long ago.

7.2.4 Satisfaction of contraceptive users

Client satisfaction is an indicator of the success of service providers. It was found that almost all of the contraceptive users reported that they were satisfied with the services they obtained. Less than two percent reported dissatisfaction. There are no differences amongst strata in the levels of reported satisfaction with contraceptive services (see Table 7.4).

Table 7.4 Percent of users who are satisfied with contraceptive services by method and strata, 2004

Method	Urban/ semi-urban	Rice	Plantation	Upland	Mixed Economy	Total
Female sterilisation	98.4	99.0	98.5	98.2	98.1	98.4
Male sterilisation	96.0	100.0	93.1	90.9	100.0	95.8
Norplant	100.0	100.0	100.0	100.0	96.7	99.1
Injectable	95.0	97.5	99.3	100.0	99.1	98.8
IUD	100.0	100.0	100.0	96.2	100.0	98.4
Pills	99.7	99.1	99.1	98.8	99.2	99.1
Condom	91.1	88.9	100.0	95.7	94.7	93.5
Total	98.0	98.5	98.8	98.8	98.6	98.5

7.3 Summary

Fertility in the study displays a pattern of tightly controlled fertility. The overall fertility level is at the replacement level. Although the fertility in the Uplands stratum is still higher than replacement level, the fertility levels in other strata are below or at replacement level. Fertility is lowest in the Urban/semi-urban stratum.

Contraception is an important factor leading to low fertility. The three most commonly used methods, which together comprise nine out of ten users, are female sterilisation, oral pill, and injectable.

Government outlets provide more than three-fourths of contraceptive services to users. The health centre provides most services in rural areas, whilst public hospitals are the most common point of access to contraceptives in urban areas.

Free contraceptive services are more likely to be available in rural areas than in urban areas. About two-fifths of all users receive contraception free of charge. The highest proportion receiving free services is for male sterilisation, followed by the IUD and implants.

Almost all of the contraceptive users are satisfied with the services they received. Less than two percent of women expressed some dissatisfaction with services.

8. Mortality

Patama Vapattanawong

8.1 General information

For the Kanchanaburi Project Round 5 (2004), there were 12,462 enumerated households. Three hundred and twenty-five of these households had at least one member who died during the 12-month period prior to the census (July 1st, 2003 – June 30th, 2004). Of this total, 321 households had one member die, while two deaths were recorded in each of 4 households. Thus, the total number of deaths was 329 compared to 421 for Round 1 (2000), 267 for Round 2 (2001), 257 for Round 3 (2002), and 280 for Round 4 (2003).

From total deaths in Round 5 (2004), there were 3 deaths with unknown ages. Hence, all following analyses will focus on 326 deaths that have known ages.

8.2 Mortality levels and patterns

For the 326 deaths in the 12-month period prior to the census, 187 (57 percent) were males and 139 (43 percent) were females. The male death rate was 8 per thousand while female death rate was 6 per thousand. For both sexes combined, the crude death rate was 7 per thousand.

Comparing mortality rate for Round 5 (2004) with rate for previous four rounds (Round 1 to Round 4), it was found that the mortality rate for Round 5 (2004) was close to that for Round 2 (2001) – Round 4 (2003) which equaled to 5 – 7 per thousand but significantly lower than that for Round 1 (2000) (see Table 8.1).

Table 8.1 Mortality from baseline survey data, Round 1 (2000) – Round 5 (2004)

Sex	Round 1 (2000)		Round 2 (2001)		Round 3 (2002)		Round 4 (2003)		Round 5 (2004)	
	Number of Deaths	Death Rate (per thousand)	Number of Deaths	Death Rate (per thousand)	Number of Deaths	Death Rate (per thousand)	Number of Deaths	Death Rate (per thousand)	Number of Deaths	Death Rate (per thousand)
Male	256	12.5	170	7.7	150	6.9	155	7.6	187	7.9
Female	165	7.4	96	4.0	107	4.6	125	5.6	139	5.5
Total	421	9.9	267	5.3	257	5.7	280	6.5	326*	6.6

Note: * Exclude 3 deaths with unknown age and sex

The mortality pattern, as indicated by age-sex specific death rates, was similar to that found in all previous rounds , as well as in the general population of Thailand. For Round 5 (2004), the infant mortality (under-one mortality) was high. Mortality then gradually decreased until the 10 – 14 year age group, which has the lowest mortality rate. Then mortality gradually increased. The rate of increases was clearly seen after aged 75.

Both males and females had the same mortality pattern. The mortality level for females was lower than for males in almost all age groups. However, within the study population, mortality rate of females aged 90 year and over was higher than for males (see Table 8.2 and Figure 8.1).

Table 8.2 Population, number of deaths and death rates by age and sex, Round 5 (2004)

Age	Population		Number of Deaths		Death Rate (per thousand)	
	Male	Female	Male	Female	Male	Female
0	376	352	4	0	10.7	0.0
1-4	1,746	1,600	5	0	2.9	0.0
5-9	2,572	2,468	3	1	1.2	0.4
10-14	2,445	2,444	1	1	0.4	0.4
15-19	1,895	2,003	3	0	1.6	0.0
20-24	1,639	1,824	8	1	4.9	0.5
25-29	1,791	2,008	3	7	1.7	3.5
30-34	1,865	2,089	10	1	5.4	0.5
35-39	1,805	2,080	12	8	6.6	3.8
40-44	1,707	1,932	6	3	3.5	1.6
45-49	1,480	1,706	7	6	4.7	3.5
50-54	1,212	1,324	12	11	9.9	8.3
55-59	793	956	15	9	18.9	9.4
60-64	743	827	11	10	14.8	12.1
65-69	577	686	19	12	32.9	17.5
70-74	441	520	13	16	29.5	30.8
75-79	271	335	24	15	88.6	44.8
80-84	104	197	14	16	134.6	81.2
85-89	59	93	12	13	203.4	140.5
90+	29	41	5	9	175.4	225.0
Total	23,546	25,481	187	139	7.9	5.5
	49,027		326		6.6	

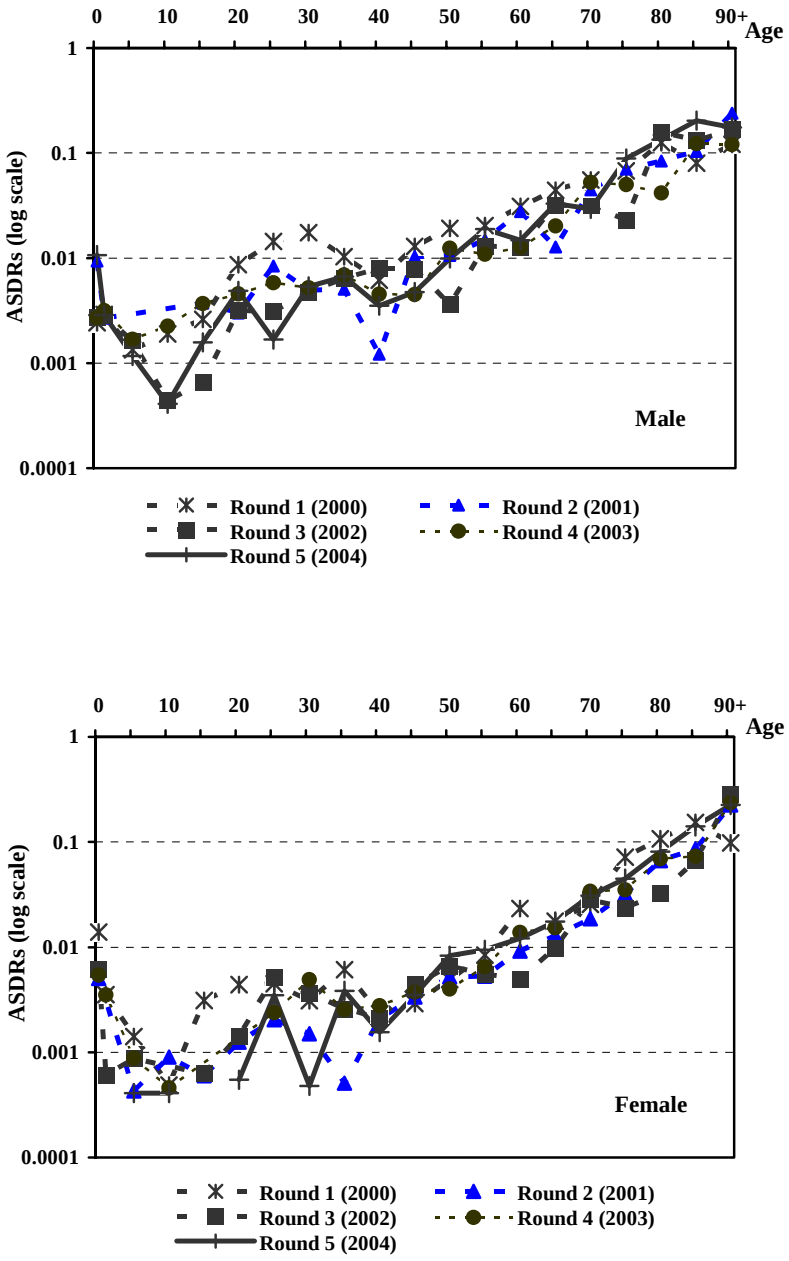

Figure 8.1 Age-sex specific death rates, Round 1 (2000) - Round 5 (2004)

8.3 Mortality by strata

Classifying by strata within the study area revealed two different mortality levels in this round. The mortality rates for urban/semi-urban plantation and mixed economy were about 7 – 8 per thousand while mortality rates for rice and upland strata were about 5 – 6 per thousand. It is seen that mortality rates for urban/semi-urban plantation and mixed economy strata were clearly higher than the other two strata.

When comparing with Round 4 (2003), mortality rates of urban/semi-urban, plantation and mixed economy strata for the Round 4 (2003) were increased, especially mortality rates of plantation and mixed economy strata were increased more than 2 per thousand. On the other hand, mortality rates of rice and upland strata were decreased. The mortality rate of rice stratum was significantly decreased nearly 4 per thousand. For the upland stratum, the mortality rate slightly decreased. (Figure 8.2)

In addition, the mortality pattern presented by age-sex specific death rates was not smooth. Rather, it fluctuated across age groups. The cause of this fluctuation was due to the small population size for each age group. As a result, either increasing or decreasing number of deaths in these age groups could markedly affect to mortality rates (Table 8.3).

Moreover, the sex differential of mortality rate for Round 5 was not different from the other four previous rounds. Male mortality was higher than that of females in every stratum (Figure 8.3).

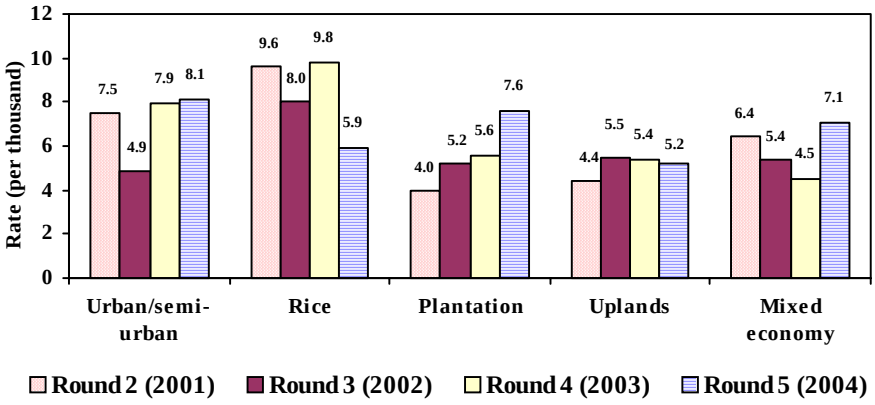

Figure 8.2 Death rates by strata, Round 2 (2001) – Round 5 (2004)

Table 8.3 Age-sex specific death rates (per thousand) by strata, Round 5 (2004)

Age	Urban/ semi-urban		Rice		Plantation		Uplands		Mixed Economy	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0	0.0	0.0	0.0	0.0	0.0	0.0	28.2	0.0	0.0	0.0
1-4	7.5	0.0	3.8	0.0	0.0	0.0	1.6	0.0	3.0	0.0
5-9	0.0	0.0	0.0	0.0	2.4	0.0	2.4	1.2	0.0	0.0
10-14	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	1.9
15-19	2.7	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
20-24	11.3	0.0	3.8	0.0	3.9	0.0	4.6	2.0	0.0	0.0
25-29	0.0	2.4	3.5	0.0	3.4	3.0	0.0	7.7	2.5	2.3
30-34	8.7	0.0	10.2	0.0	0.0	0.0	0.0	0.0	9.8	2.3
35-39	11.6	4.3	0.0	2.7	12.9	6.6	4.0	2.0	5.6	4.6
40-44	2.7	4.7	0.0	0.0	7.3	0.0	4.4	0.0	2.9	2.4
45-49	6.9	2.5	0.0	0.0	4.2	7.9	4.7	4.9	6.4	2.6
50-54	7.7	3.2	14.5	4.3	5.3	10.6	13.7	17.7	7.5	6.6
55-59	38.3	14.7	8.6	24.5	0.0	0.0	4.8	4.6	35.6	4.5
60-64	6.6	16.5	0.0	6.0	9.0	14.2	20.6	6.1	29.7	17.5
65-69	40.0	12.6	34.5	16.2	60.9	9.2	21.3	21.3	16.5	26.0
70-74	12.1	9.3	43.2	19.0	30.5	43.2	9.2	65.4	54.6	22.9
75-79	76.2	80.0	80.6	41.7	171.4	68.2	62.0	32.0	87.7	0.0
80-84	40.8	140.0	78.4	84.2	454.5	69.0	153.8	40.0	127.7	44.0
85-89	285.7	102.6	62.5	113.2	200.0	500.0	0.0	60.6	315.8	55.6
90+	200.0	363.6	0.0	0.0	0.0	153.8	250.0	200.0	200.0	400.0
Crude death	9.4	7.0	6.9	4.9	8.9	6.4	5.8	4.6	9.6	4.8
rate	8.1		5.9		7.6		5.2		7.1	

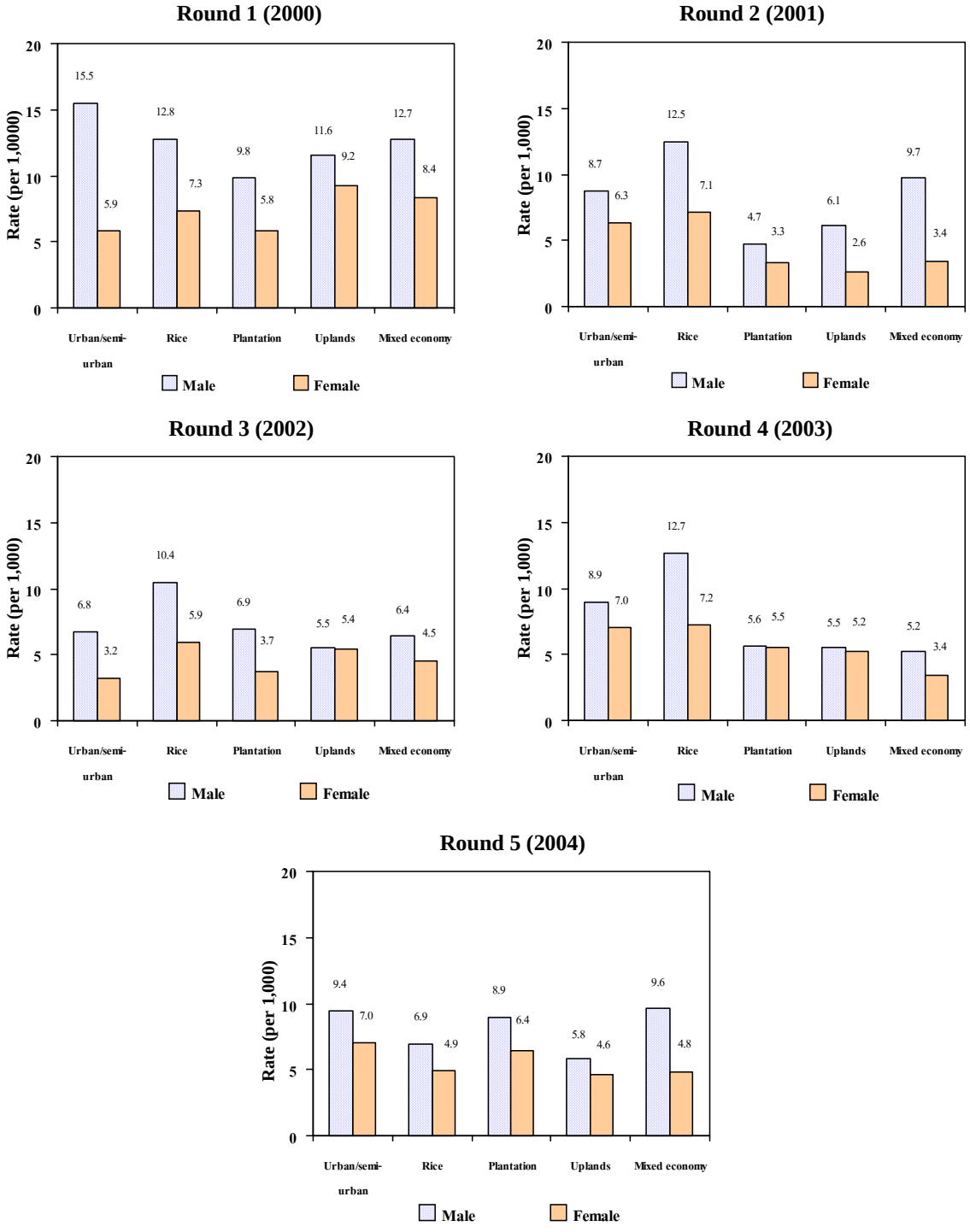

Figure 8.3 Death rates (per thousand) by sex and strata, Round 1 (2000) – Round 5 (2004)

8.4 Causes of deaths

For Round 5 (2004), the same questions on causes of deaths used to ask the relatives of deceased as in Round 4 (2003) were asked. There were six major causes of deaths including sickness from non-infectious disease, sickness from infectious disease, accident, homicide, suicide, and senility.

According to the six major groups of causes of deaths, sickness from non-infectious disease accounted for a major cause among these 326 deaths that occurred within the one year before the Round 5 (2004) census. About half of all deaths, or 46 percent, occurred due to non-infectious disease. The second cause was senility (22 percent). Deaths caused by infectious disease accounted for the third rank of causes of deaths (17 percent). The fourth cause was accidents (9 percent). Deaths caused by homicide and suicide were 2 percent of all deaths. Deaths from unknown causes contributed 2 percent of all deaths. Furthermore, there were 2 percent of all deaths that relatives of deceased did not answer the questions on causes of deaths. (Figure 8.4)

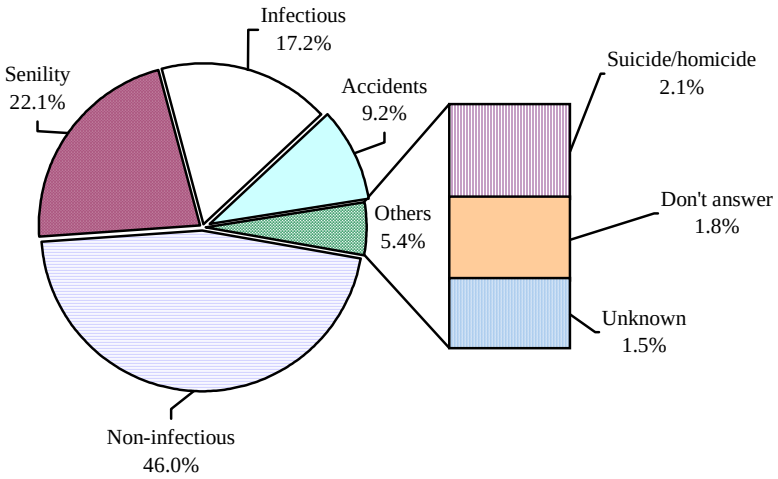

Figure 8.4 Percentage distribution of deaths by cause of death, Round 5 (2004)

Analysis of causes of death by strata showed differences in the order of causes of deaths for almost all strata. The first three orders of causes of deaths for urban/semi-urban and mixed economy strata were non-infectious disease, senility and infectious disease while senility, non-infectious disease and infectious disease were the first three orders of causes of deaths for rice stratum. For plantation stratum, the first two causes of deaths were similar to urban/semi-urban and mixed economy strata but the third cause was accidents. It could be observed that proportion of deaths from accidents found in plantation stratum in Round 5 (2004) was high when compared to other strata. For uplands stratum, the first three causes of deaths were non-infectious, infectious and senility. (Table 8.4)

Table 8.4 Percentage distribution of causes of deaths by strata, Round 5 (2004)

Causes of Deaths	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy
Infectious disease	19.2	19.1	13.8	22.9	11.0
Non-infectious disease	44.9	34.0	44.8	41.4	60.3
Accident	6.4	6.4	17.2	5.7	11.0
Homicide	1.3	0.0	0.0	0.0	2.7
Suicide	1.3	0.0	0.0	2.9	1.4
Senility	24.4	36.2	20.7	20.0	13.7
Unknown	1.3	4.3	1.7	1.4	0.0
Don’t answer	1.3	0.0	1.7	5.7	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number	78	47	58	70	73

In order to compare the pattern of causes of deaths from Round 1 (2000) to Round 5 (2004), some causes of deaths were grouped. The new combinations of causes of deaths were 1) sickness 2) accident 3) self-harm and assault 4) others.

- Causes of deaths from sickness include deaths from infectious diseases, non-infectious diseases and senility.

- Causes of deaths from accidents are defined as deaths from all external causes that occurred unintentionally.

- Causes of deaths from self-harm and assault means deaths from all intentional events including intentional self-harm and assault by other people.

- Causes of deaths from others include deaths from all other causes that were not included in three causes above.

By comparing the pattern of causes of deaths for five rounds, the same pattern occurred in each Round. The first three causes of deaths were sickness, accident, self-harm and assault, respectively. (Figure 8.5)

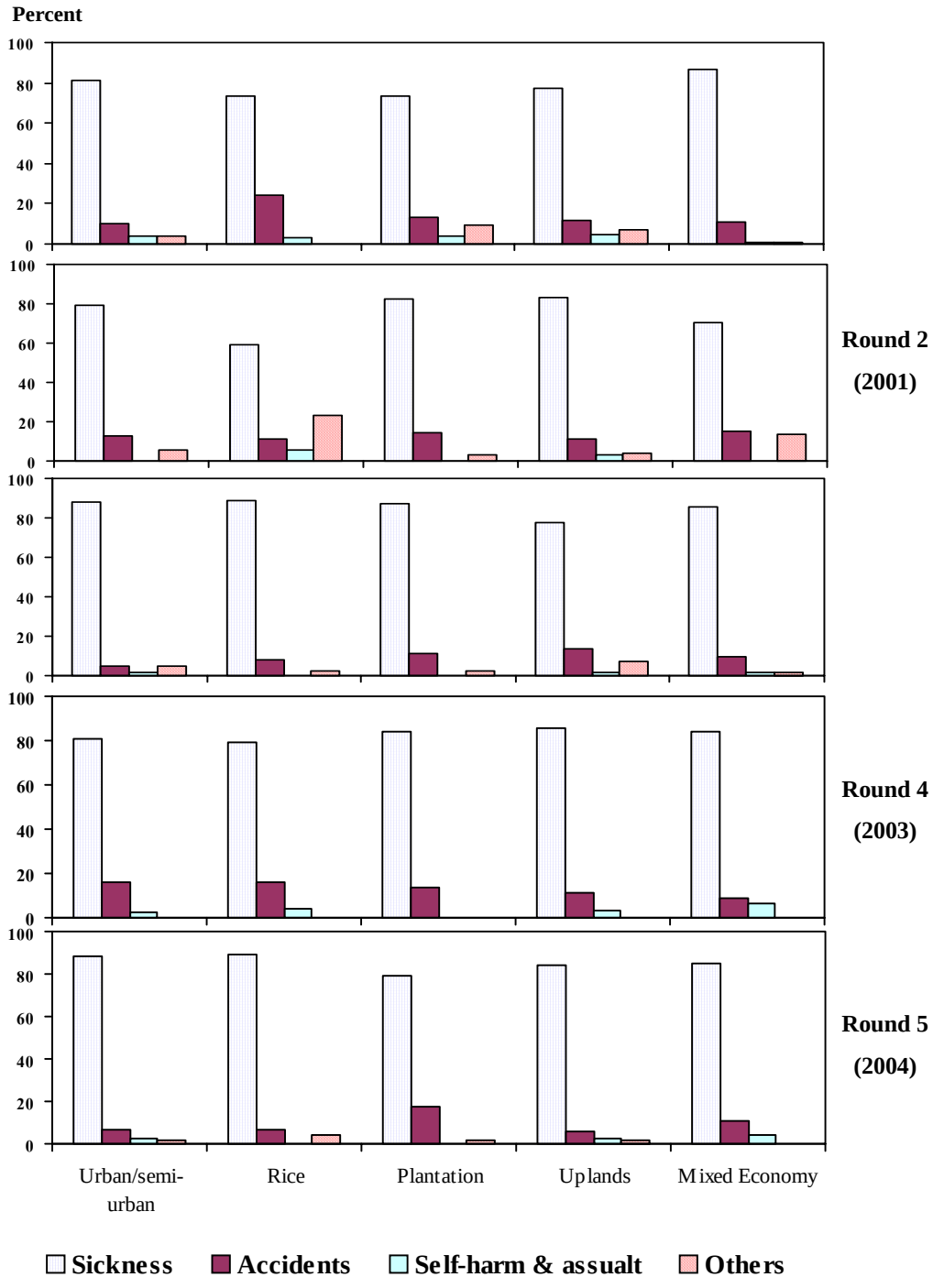

Figure 8.5 Causes of deaths by strata, Round 1 (2000) – Round 5 (2004)

8.5 Place of death and death registration

For Round 5 (2004), three types of place of death were classified, deaths in health facilities (government hospitals, health centers, private hospitals/clinics), deaths at home, and deaths outside the home. It was found that about one-half of all deaths occurred at health facilities (48 percent). Deaths at home consisted of 45 percent of all deaths. A further 7 percent of deaths occurred outside the home, but not in a health facility (Table 8.5).

Table 8.5 Number and percentage distribution of deaths by place of death, Round 5 (2004)

Places of Deaths	Number	Percent
Health facilities	155	47.6
Government hospitals/health centers	*144*	*44.2*
Private hospitals/clinics	*11*	*3.4*
Home	145	44.5
Outside home	22	6.7
Don't know	**4**	**1.2**
Total	326	100.0

Besides the question about place of death, two questions about registration were asked to the relative of the deceased. The first question was whether that deceased was registered or not. If yes, then, the relative was asked whether having death certificate or not. These questions used in Round 5 (2004) were different from questions used in Round 4 (2003) which asked whether the deceased was registered only. From both questions, we can define 'registered death' as follows:

- If relative of a deceased answered 'yes' for both questions, that death was defined as '***registered***'.

- If relative of a deceased answered ‘no’ for the first question or ‘yes’ for the first but ‘no’, ‘don’t know’ for the second question, that death was defined as ‘***unregistered***’.

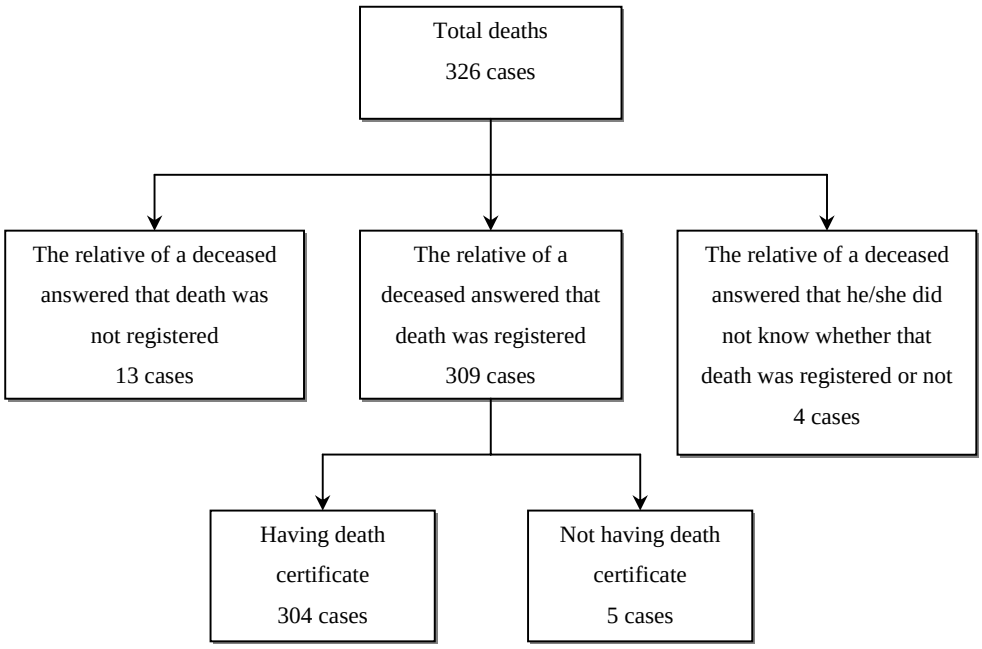

Figure 8.6 Details of deaths classify by death registration and having death certificate

For total deaths, 309 cases were deaths that claimed to be registered by their relatives while 13 cases were not. A further 4 cases were deaths that their relatives did not know whether they were registered or not. Among those who claimed to be registered, 304 cases had death certificates but 5 did not have. By the definitions of ‘registered’ above, it means that 304 cases or 93 percent were registered deaths and the other 22 cases or 7 percent were unregistered. The percent of registered deaths found in Round 5 (2004) was slightly lower than that found in Round 2

(2001) to Round 4 (2003). One reason of a lower percent registered deaths was due to the differences of definition of 'registered' used in Round 5 (2005) and four previous rounds.

Table 8.6 Percentage of registered and unregistered deaths, Round 1 (2000) – Round 5 (2004)

Registered deaths	Round 1 (2000)	Round 2 (2001)	Round 3 (2002)	Round 4 (2003)	Round 5 (2004)
Registered	91.2	95.1	94.2	94.6	93.3
Unregistered	8.8	4.9	5.8	5.4	6.7
Total	100.0	100.0	100.0	100.0	100.0

The proportion of unregistered deaths for Round 5 (2004) was still high for infants and child deaths, which was also found for Round 1 (2000) – Round 4 (2004). The proportion of both registered and unregistered deaths is shown in Figure 8.7.

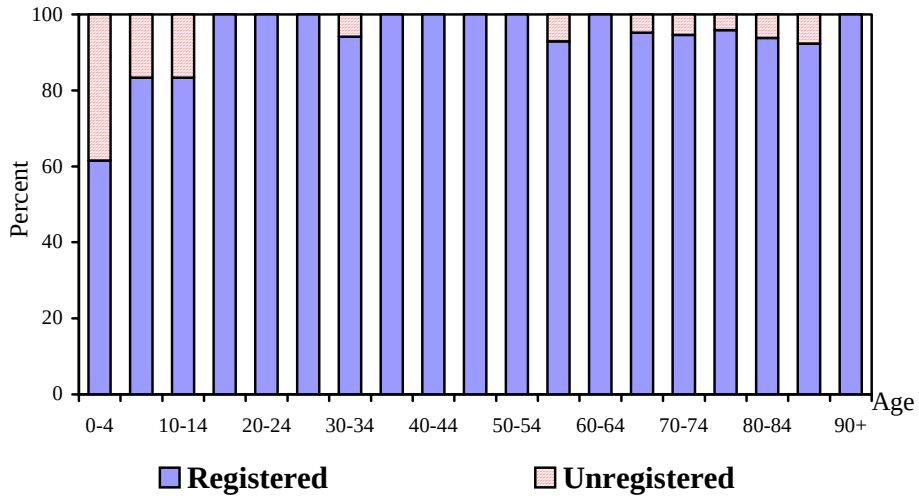

Figure 8.7 Percentage distribution of deaths by death registration and age, Round 5 (2004)

The most common reasons given for not registering a death was lack of citizenship (aliens) (8 from 13 unregistered deaths), followed by 'lacking of documents' (2 from 13 unregistered deaths). The others left, one for each reason, were 'no time to register', 'not popular', and 'did not know where to register the death'.

8.6 Summary

The mortality level for the 12-month period (July 1st 2003 – June 30th 2004) prior to the Round 5 (2004) census increased compared to that of Round 4 (2003). In the Round 5 (2004) census, there were 326 deaths, giving a crude mortality rate of 7 per thousand.

Classifying by sex, the male mortality rate was slightly higher than the female mortality rate. By stratum, the mortality rates could be grouped into two groups. The mortality rates of urban/semi-urban plantation and mixed economy strata were 7 – 8 per thousand while the mortality rates of rice, and uplands strata were 5 –6 per thousand.

The mortality distributions by age and sex were similar to mortality patterns found within the general population, in that both male and female mortality patterns were J-shaped. Infant mortality was high, mortality then gradually decreased until the 10 – 14 year age group, which had the lowest mortality rate. Then, mortality gradually increased. Female mortality was lower than that of males in almost all age groups. This pattern was similar to that found in Round 1 – 4.

More than 80 percent of deaths were caused by sickness. Forty-six percent of all deaths were caused by non-infectious disease while 22 percent were caused by senility. Sickness from infectious disease was a third rank of cause of death, contributing to 17 percent of all deaths. Deaths caused by accident, homicide, and suicide decreased compared to Round 4 (2003). Of all deaths, ninety-three percent were registered, slightly lower than Round 4 (2003).

9. Health Behaviour

Uraiwan Kanungsukkasem

Health behaviors are actions that help prevent illness, promote health, or cause illness. This chapter describes health behaviours in the areas of food consumption, sources of drinking water, consumption of addictive substances, and exercises. The analysis is restricted to the population aged 15-70 living in the Kanchanaburi field site communities.

9.1 Food and drinking water consumption

9.1.1 Food consumption

Food is essential since it is the main source of energy and nutrition. However, regularly consumption of some types of food, such as salty, spicy, sweet, greasy, and fermented food, raw or half cooked meat, instant food, and snacks, may have negative effects on health.

Table 9.1 shows that the population in the Uplands area had the highest proportion that regularly ate salty food (30 percent). The proportion of the population in the Plantation, Mixed economy, Rice and the Urban/semi urban areas that regularly ate salty food were 27, 27, 26 and 23 percent, respectively.

The population in the Uplands area had the highest proportion that regularly ate spicy food (44 percent). The proportion of the population in the Plantation, Rice, Mixed economy, and the Urban/semi urban areas that regularly ate spicy food were 40, 39, 37 and 34 percent, respectively.

The population in the Uplands area had the highest proportion that regularly ate sweet food (22 percent). The proportion of the population in the Mixed economy, Plantation, the Urban/semi urban, and Rice areas that regularly ate sweet food were 21, 19, 17 and 16 percent, respectively.

The population in the Uplands area had the highest proportion that regularly ate fermented food (12 percent). The proportion of the population in the Mixed economy, Plantation, the Urban/semi urban area, and Rice strata that regularly ate fermented food were 11, eight, seven and four percent, respectively.

The population in the Uplands area had the highest proportion that regularly ate instant food, e.g. instant noodles (15 percent). The proportion of the population in the Mixed economy, Plantation, the Urban/semi urban, and Rice areas that regularly ate instant food were 12, 11, 10, and five percent, respectively.

The population in the Uplands area had the highest proportion that regularly ate greasy food (21 percent). The proportion of the population in the Mixed economy, the Urban/semi urban, Plantation, and Rice areas that regularly ate greasy food were 19, 16, 14 and seven percent, respectively.

The proportions of population in all study areas who regularly ate raw or half cooked meat were minimal. However, the population in the Uplands area had the highest proportion that regularly ate raw or half cooked meat (five percent). The proportion of the population in the Mixed economy, Plantation, Rice and Urban/semi urban areas that regularly ate raw or half cooked meat were two, two one, and one percent, respectively.

The population in the Uplands area had the highest proportion that regularly consumed snacks (24 percent). The proportion of the population in the Mixed

economy, Plantation, the Urban/semi urban, and Rice areas that regularly consumed snacks were 19, 16, 15 and nine percent, respectively.

In sum, segments of the population in the Uplands area consumed all kinds of food that negatively affect their health more than populations in the other areas.

In addition, the consumption of fast food, health enhancing food and vitamins was also examined (see Table 9.1). The result of this analysis shows that the population in the Urban/semi urban area were the most likely to consume fast food and health enhancing food and vitamins. The details are as followed:

The proportions of population who consumed fast food regularly were minimal in all study areas (See Table 9.1). The population in the Urban/semi urban area had the highest proportion that regularly consumed fast food (two percent), whereas the proportion of population who regularly consumed fast food in the Mixed economy, Plantation, Rice and Uplands areas were one, 1, 0.7 and 0.3 percent, respectively.

Only 1-4 percent of the population in all study areas consumed health enhancing food regularly. The highest proportion of population who consumed health enhancing food regularly were in the Urban/semi urban area (4 percent), while the proportion of population who consumed health enhancing food regularly in the Mixed economy, Uplands, Plantation, and Rice areas were three, two, one, and one percent, respectively.

The population in the Urban/semi urban area were more likely to consume vitamins regularly than the population in the other areas (four percent), whereas the proportions of population who consumed vitamins regularly in the Mixed

economy, Uplands, Plantation, and Rice areas were 3, 3, 2, and 1 percent, respectively (see Table 9.1).

Table 9.1 Percentage distribution of the population that consume specified types of food by strata

Types of food regularly consumed	Urban/ Semi-Urban	Rice	Plantations	Uplands	Mixed Economy
Strong flavoured food	36.6	42.4	40.4	49.1	39.6
Salty food	22.8	26.0	27.4	30.3	27.3
Spicy food	33.8	39.2	39.7	43.6	36.6
Sweet food	16.6	16.0	19.2	21.7	20.8
Fermented food	7.4	4.4	8.4	12.4	10.6
Instant food	9.8	5.0	11.3	15.1	11.6
Greasy food	15.7	6.6	14.0	21.4	19.0
Raw meat	0.8	0.8	1.5	4.5	2.0
Fast food	2.2	0.7	1.1	0.3	1.2
Snacks	14.5	8.9	15.9	24.3	18.5
Health enhancing food	4.1	0.9	1.3	1.7	2.8
Vitamins	3.8	1.4	2.3	2.6	3.0

9.1.2 Sources of drinking water

The population in the Urban/semi-urban area are most likely to rely on bottled water for their drinking water (66 percent), followed by tap water (28 percent), underground water (10 percent), rain water (four percent), carbonated drinks (four percent), and water from the other sources (less than one percent).

The major source of drinking water of the population of the Rice stratum was the most traditional source of rain water (74 percent). The other main sources were bottled water (18 percent), and tap water (14 percent). In addition, the other sources of drinking water were pond water (four percent), underground water (two percent), and carbonated drinks (one percent), and water from other sources, such as rivers, mountain piped water (0.1 percent), respectively.

For the population living in the Plantation stratum, rain water was the most common source of drinking water (91 percent), followed by bottled water, tap water, pond water, underground water, carbonated drinks and water from other sources (8,7,3,1,1, and one percent), respectively.

Three-fourths of the Uplands population drank rain water regularly. This is followed by tap water (24 percent), water from other sources, such as mountain piped water, canal water, etc. (10 percent), bottled water (six percent), pond water (three percent). Carbonated drinks and underground water were drunk by the smallest segment of the population (both were less than one percent).

Fifty-three percent of the population in the Mixed economy stratum regularly drank rain water, while 29 percent relied on bottled water, 17 percent drank tap water, 11 percent drank underground water, two percent drank carbonated drinks, and less than one percent drank pond water and water from other sources (see Table 9.2).

Table 9.2 Percentage distribution of sources of drinking water by strata

Types of drink	Urban/ Semi-Urban	Rice	Plantations	Uplands	Mixed Economy
Rain water	4.1	73.7	90.8	75.4	53.4
Tap water	27.6	14.0	7.0	23.7	17.0
Pond water	0.1	4.2	2.5	3.1	0.8
Underground water	9.5	2.0	1.3	0.5	10.9
Carbonated drinks	3.7	1.3	1.1	0.7	1.7
Bottled water	66.2	18.1	7.6	6.3	29.1
Other drinks	0.3	0.1	0.7	10.2	0.8

Bottled water was very popular in almost all the areas. It was the most popular drinking water among population in the Urban/semi-urban area, and the second most popular drinking water after rain water in almost all other areas, except the Upland areas. The reasons why very large number of population preferred to drink bottled water, although they had to buy it, were probably the convenience and the belief that it was cleaner than water from other sources. In reality, this is not always true, since the production of some brands did not meet the standard which made the bottled water unclean, full of bacteria or other substances.

9.2 Consumption behaviour affecting health status

Consumption of cigarettes, alcohol, such as beer, wine, liquor, energy beverages, canned coffee and pain relievers is harmful to health, if the level of consumption is frequent.

9.2.1 Smoking

Most of the smokers smoked frequently, often on a daily basis. Very few people smoked infrequently. The highest rate of frequent smoking was among the Uplands population (48 percent), followed by the Plantation, Mixed economy, Rice, and the Urban/semi-urban population (28, 27, 25 and 21 percent), respectively (see Table 9.3).

9.2.2 Beer consumption

The population in all areas had small proportions that frequently or daily drank beer (7-13 percent). The highest level of often or daily consumption was among people living in the Urban/semi-urban stratum (13 percent). The lowest proportion was observed for the Uplands population (7 percent). However, when combined the frequent and infrequent beer drinkers who drank beer increased substantially to 35-38 percent. Persons in the rice and plantation strata were more likely to drink beer than persons in the other strata (both 38 percent), whereas the lowest rate of beer consumption was among population of the Mixed economy and Urban/semi-urban stratum (both 35 percent). (See Table 9.3)

9.2.3 Liquor consumption

As with beer consumption, the proportions of population in all areas who drank liquor frequently or daily were not high (13-14 percent). However, when combined infrequent and frequent drinkers together, it is found that about one-third (31-35 percent) of population in all study areas drank liquor. The rice and Uplands strata population were more likely to drink liquor (35 percent), while Urban/semi-urban populations were least likely to drink liquor (31 percent). (See Table 9.3).

9.2.4 Wine

Drinking wine was not popular in any study areas. 94-98 percent of the population in all five strata did not drink wine at all. Less than one percent of the population in all areas drank wine frequently or daily. Most of the wine drinkers only drank it occasionally. Six percent of the Urban/semi-urban population drank wine occasionally, which is the highest level of wine drinking. This is followed by the population in the Mixed economy, Plantation, Uplands and Rice areas), respectively (five, four, three, and two percent) (See Table 9.3).

9.2.5 Local liquor

Just as with wine, local liquor was not popular in all study areas. 94-97 percent of population in all strata did not drink local liquor. Less than one percent of populations in all areas drank local liquor frequently or daily. Most of the local liquor drinkers drank local liquor only occasionally. Five percent of the Plantation and Mixed economy population drank wine occasionally, followed by the population in the Uplands, Urban/semi-urban, and Rice areas (four, four, and three percent) respectively. Less than one percent of populations in all areas drank local liquor frequently or daily. (See Table 9.3).

9.2.6 Herbal liquor

Between 78 and 88 percent of population had not drunk herbal liquor. Among the drinkers, the proportion of occasional drinkers were higher than the proportions of frequent drinkers. Fifteen percent of the Uplands population drank herbal liquor occasionally and eight percent frequently drank it. Thirteen percent of Plantation population occasionally drank herbal liquor and five percent frequently drank it. Twelve percent of Mixed economy population occasionally drank herbal liquor

and five percent frequently drank it. Eleven percent of Rice area population occasionally drank herbal liquor and five percent frequently drank it. Eight percent of Urban/semi-urban population occasionally drank herbal liquor and five percent frequently drank it. (See Table 9.3).

9.2.7 Energy drinks/energy beverages

Overall, 69-75 percent of the population in all study areas reported that they had not consumed energy beverages, which typically contain a high level of caffeine. The proportion of infrequent drinkers were similar to the proportions of frequent drinkers. Eighteen percent of persons living in the Plantations stratum occasionally drank energy beverages and 12 percent frequently drank it. Eighteen percent of the Uplands population occasionally drank energy beverages and 11 percent frequently drank it. Fifteen percent of the Mixed economy population occasionally drank energy beverages and 14 percent frequently drank it. Thirteen percent of the Rice area population occasionally energy beverages and 14 percent frequently drank it. Eleven percent of the Urban/semi-urban population occasionally drank energy beverages and 14 percent frequently drank it. (See Table 9.3).

9.2.8 Canned coffee drinks

The majority of the population in all strata reported that they had not drunk canned coffee (84-91 percent). Among those who reported they engaged in this behaviour, the percentages reporting frequent (often/daily) use were almost the same as the percentage reporting infrequent use. Nine percent of persons living in the Plantation stratum occasionally drank canned coffee and seven percent frequently drank it. The percentages of both infrequent and frequent canned coffee drinkers were the same in Mixed economy and Rice areas. Eight and seven

percent of both areas' population infrequently and frequently drank canned coffee and seven percent frequently drank it. Five percent of Uplands population occasionally drank canned coffee and four percent frequently drank it (See Table 9.3).

9.2.9 Sleeping pills/stress relievers

The vast majority of the population in all strata reported that they did not consume sleeping pills/stress relievers. Among those who reported consumption of sleeping/pain relievers, the percentages of infrequent users were a little higher than the percentages of frequent users in all areas. Four percent of persons living in the Plantation stratum infrequently used sleeping pills/pain relievers and two percent frequently used them. The percentages of both infrequent and frequent sleeping pills/pain reliever users were the same in the Mixed economy and Rice areas. Three percent of both areas' population infrequently used sleeping pills/pain relievers and two percent frequently used them. Three percent of the Urban/semi-urban populations used sleeping pills/pain relievers infrequently and one percent used them frequently. Two percent of the Uplands population occasionally used sleeping pills/pain relievers and two percent frequently used them (See Table 9.3).

Table 9.3 Percentage distribution of health risk consumption behaviour by strata

	Urban/ Semi-Urban	Rice	Plantations	Uplands	Mixed Economy
Cigarettes					
Never	78.4	74.0	70.8	51.1	72.0
Infrequently (rarely)	1.1	1.2	1.1	0.8	1.6
Frequently (often/daily)	20.6	24.8	28.1	48.1	26.5
Beer					
Never	65.2	61.8	62.4	64.4	64.8
Infrequently (rarely)	22.2	27.2	29.5	28.7	25.6
Frequently (often/daily)	12.6	11.1	8.1	6.8	9.6
Liquor					
Never	68.6	65.3	65.9	65.5	67.9
Infrequently (rarely)	18.6	21.7	21.3	20.5	19.5
Frequently (often/daily)	12.8	13.0	12.9	14.1	12.5
Wine					
Never	93.6	97.5	96.2	97.1	94.7
Infrequently (rarely)	5.8	2.2	3.7	2.7	4.6
Frequently (often/daily)	0.6	0.3	0.1	0.1	0.7
Local Liquor					
Never	96.2	97.1	94.5	95.8	94.0
Infrequently (rarely)	3.5	2.7	5.0	4.1	5.3
Frequently (often/daily)	0.3	0.3	0.5	0.2	0.7
Herbal Liquor					
Never	87.6	83.9	81.9	77.7	82.9
Infrequently (rarely)	8.2	11.0	13.3	14.6	11.7
Frequently (often/daily)	4.2	5.2	4.8	7.7	5.4

Table 9.3 (Continued)

	Urban/ Semi-Urban	Rice	Plantations	Uplands	Mixed Economy
Energy drinks / beverages					
Never	75.2	73.0	69.4	70.8	71.1
Infrequently (rarely)	11.2	13.1	18.2	18.4	15.2
Frequently (often/daily)	13.6	13.9	12.4	10.8	13.7
Canned coffee					
Never	89.3	85.6	84.0	91.0	85.2
Infrequently (rarely)	6.0	7.6	9.3	4.7	8.2
Frequently (often/daily)	4.7	6.8	6.7	4.3	6.6
Sleeping pills / stress relievers					
Never	96.0	95.3	93.5	95.7	95.0
Infrequently (rarely)	2.5	2.8	4.3	2.4	2.7
Frequently (often/daily)	1.4	1.9	2.1	1.9	2.3

9.3 Exercise

This study explores the prevalence of seven forms of exercise: running, jogging, aerobics, tai chi, sports, physical exercise, and exercise with equipment or biking.

Results of this study shows that running was more popular in the Urban/semi-urban and Mixed economy areas than in the other strata. About one-fourth of the population in the Urban/semi-urban and Mixed economy areas exercised by running, whereas only 20 percent of the population in the Plantation areas, 14 percent of the Uplands areas, and 14 percent of the Rice areas exercised by running.

The proportions participating in jogging were low (1-8 percent). The population in the Mixed economy and Urban/semi-urban jogged more than the population of the other areas (eight and seven percent, respectively). These were followed by Plantation, Uplands and Rice area population (three, three, and one percent respectively).

A small proportion of the population engaged in aerobics. The population in the Urban/semi-urban stratum engaged in aerobics more than the population in the other areas (13 percent), whereas 10, 10, seven and five percent of the Rice, Mixed economy, Plantation and Uplands area populations engaged in aerobics.

Tai chi was not popular among the study population. Only 0.2 of the population in Urban/semi-urban, Rice and Mixed economy areas practiced tai chi.

Regular participation in sports such as football and Takraw is the most popular form of exercise, with 70 percent of the population in the Uplands stratum, 68 percent of the population in the Rice stratum, 65 percent of the Plantation stratum population, 49 percent of the Mixed economy stratum population and 41 percent of the population of the Urban/semi-urban stratum participating in sports.

The population in the Urban/semi-urban and Mixed economy areas practiced physical exercise more than the other population of other strata (both 15 percent). They were followed by population in the Rice, Plantation and Uplands areas, respectively (11, 10 and eight percent).

The proportion exercising with equipment or by biking was highest in the Urban/semi-urban population. Eight percent of the population in the Urban/semi-urban stratum exercised with equipment or by biking, whereas only three percent of population in the Uplands and Mixed economy strata, and two percent of population in the Rice and Plantation strata exercised with equipment or by biking (See Table 9.4).

Table 9.4 Percentage distribution of the population that take part in selected forms of exercise, by strata

Type of exercise	Urban/ Semi-Urban	Rice	Plantations	Uplands	Mixed Economy
Running	24.9	13.7	19.9	14.2	24.7
Jogging	7.3	1.2	3.0	3.4	8.0
Aerobics	13.3	9.5	6.5	5.3	10.0
Tai Chi	0.2	0.2	0.0	0.0	0.2
Sports	40.6	68.3	64.9	70.3	48.7
Physical exercise	15.0	11.0	9.5	8.2	14.7
Exercise with equipments / biking	8.0	1.7	2.0	3.1	2.6

9.4 Location of exercise

The most popular places to exercise in all strata were the free spaces near their homes, such as schools or temples (see Table 9.5). Seventy-two percent of the Rice area population exercised at the free spaces near their home, followed by 66, 60, 54 and 45 of the Uplands, Plantations, Mixed economy and Urban/semi-urban area population, respectively.

The second most popular places were free spaces in/beside their homes. The population in the Urban/semi-urban area were more likely to exercise in/beside their homes (38 percent), followed by the Mixed economy, Plantation, Upland and Rice area populations (37, 36, 30, and 27 percent, respectively).

The other two popular places to exercise were government sports clubs and public parks. Government sports clubs were most often utilized by Urban/semi-urban population (14 percent), whereas public parks were most utilized by Mixed economy (10 percent) and Urban/semi-urban populations (8 percent).

Table 9.5 Percentage distribution of main location for exercise of the respondents that do regular exercise, by strata

Venues for exercise	Urban/ Semi-Urban	Rice	Plantations	Uplands	Mixed Economy
Inside / Beside home	38.1	26.7	35.8	29.8	37.1
Public parks	7.5	0.4	1.4	0.3	9.8
Public building in the community	0.5	0.4	0.4	1.3	0.0
Free spaces in the communities	44.7	71.6	60.4	66.0	54.3
Village clubhouse	2.2	3.7	4.3	4.7	4.4
Private sports clubs	2.6	0.8	0.6	0.4	0.3
Public sports clubs	13.6	1.7	2.6	1.8	2.1
Office	0.2	0.2	0.2	0.3	0.8

9.5 Summary

Among the population of all study areas, the Upland area population had the highest level of consumption of foods that could affect health. They were the most likely to regularly eat salty, spicy, sweet, fermented, and greasy food, raw or half cooked meat, and snacks. On the other hand, the Urban/semi-urban population were the more likely to eat fast food, health enhancing food and vitamins than were the population in the other areas.

Bottled water was the most popular source of drinking water. It was most popular among the Urban/semi-urban population, and it was second to rain water, in almost all other areas, except the Uplands area.

The Uplands area population had the highest proportion that frequently smoked, whereas the proportions of frequently drinking were similar in all areas. The population of the Rice, Mixed economy, and Urban/semi-urban strata consumed energy drinks more than the other stratum population. The proportions taking sleeping pills or stress relievers were minimal and similar among all areas.

Playing sports was the most popular form of exercise, followed by running, physical exercise, aerobics, jogging, and exercise with equipment or biking. The population in the Uplands area had the highest proportion that played sports, whereas the population in the Mixed economy and Urban/semi-urban strata had the highest proportions that exercised by running and practicing physical exercise. The population in the Urban/semi-urban stratum had the highest proportion that practiced aerobics and exercised with equipments/biking. Tai chi was rarely practiced in any of the study populations.

The two most popular places to exercise were free spaces near, inside, or beside their homes. Government sports clubs were most popular among the Urban/semi-urban population, and public parks were most popular among the Mixed economy and Urban/semi-urban populations.

10. Health Status

Kusol Soonthorndhada

10.1 Health status

In this chapter, the health status of the field site population aged 15 and above is presented in terms of chronic illnesses and recent illness within the past one month. The analysis focuses only on the first-ranked diseases reported by residents of the field site.

Chronic illnesses

Chronic illness in this research is defined as a disease or illness that affected the respondents for no less than three months, for example, diabetes, heart disease, allergies, low-back pain, dizziness and tiredness.

Result showed that two-thirds (66 percent) of the population of the field site were not affected by chronic illnesses, with the prevalence of chronic illness high at about 34 percent. By strata, 35 percent to 36 percent of the population in the Plantation, Mixed economy, and Rice strata reported chronic illnesses, as well as 34 percent of the population in the Urban/semi-urban areas and 29 percent in the Uplands stratum.

The prevalence of chronic illnesses was substantially higher among women than men (at 40 percent compared to 27 percent, respectively). The highest levels of chronic illnesses were among women in the Plantation, Mixed economy and Rice strata (43 percent, 42 percent and 42 percent, respectively) while women in the Uplands stratum has the lowest prevalence (34 percent). For men, the levels of

chronic illness are similar among strata, rates ranging from 27 percent to 29 percent, with men in the Uplands stratum having the lowest prevalence of chronic disease (23 percent) (Table 10.1).

Table 10.1 Percentage distribution of the population by chronic illness, sex and by strata

Chronic Illness	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Both sexesChronic Illness						
Exhibited	34.0	35.4	36.0	28.8	35.9	33.7
Did not exhibitted	66.0	64.6	64.0	71.2	64.1	66.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	5,820	4,912	4,446	6,986	5,950	28,11144*
Female						
Exhibited	39.5	41.7	43.2	34.1	41.9	39.7
Did not exhibited	60.5	58.3	56.8	65.9	58.1	60.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	3,277	2,717	2,409	3,690	3,254	15,347**
Male						
Exhibited	27.0	27.6	27.5	22.9	28.7	26.5
Did not exhibited	73.0	72.4	72.5	77.1	71.3	73.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	2,543	2,195	2,037	3,296	2,696	12,767***

* No data 2,104 cases, ** No data 84 cases, *** No data 57 cases

The prevalence of chronic illness were directly correlated with age – the older the resident the higher the prevalence of chronic illness. Among the elderly population, 64 percent reported a chronic illness. The major chronic disease was high/low blood pressure which accounted for six percent of persons across all age groups. The population aged 50 years and over were more likely to have blood pressure problems than the younger age group, and 15 percent of the population aged 60 years and over reported problems with their blood pressure (Table 10.2).

Table 10.2 Percentage distribution of population, by chronic illness, the most common chronic illness (blood pressure) and age

	Age Group (Year)				
	15-39	40-49	50-59	60+	Total
Chronic Illness					
Yes	19.1	35.5	49.3	63.7	33.7
No	80.9	64.5	50.7	36.3	66.3
Total	100.0	100.0	100.0	100.0	100.0
N	13,828	6,145	3,936	4,343	28,252*
Blood Pressure Problem					
Yes	1.8	6.3	11.4	14.7	6.1
No	98.2	93.7	88.6	85.3	93.9
Total	100.0	100.0	100.0	100.0	100.0
N	13,830	6,145	3,937	4,343	28,255**

* No data 1,966 cases, ** No data 1,963 cases.

The five most prevalent chronic illnesses among the population were (1) high/low blood pressure, (2) gastrointestinal illnesses/gastroenteritis/ulcers, (3) muscle/bone pains, (4) allergies and (5) diabetes (Figure 10.1).

Categorized by strata, the most common reported chronic illness in every stratum was high/low blood pressure. The second- to fifth-ranked prevalent diseases varied across strata, The second most reported chronic disease in the Urban/semi-

urban areas were gastrointestinal diseases and allergies, and the third was diabetes and muscle/bone pains. For the Rice, Plantation and Uplands strata, the second most frequently reported diseases were muscle/bone pains and gastrointestinal diseases. For the Mixed economy stratum, the second and third most reported diseases were gastrointestinal diseases and muscle/bone pains (Figure 10.1).

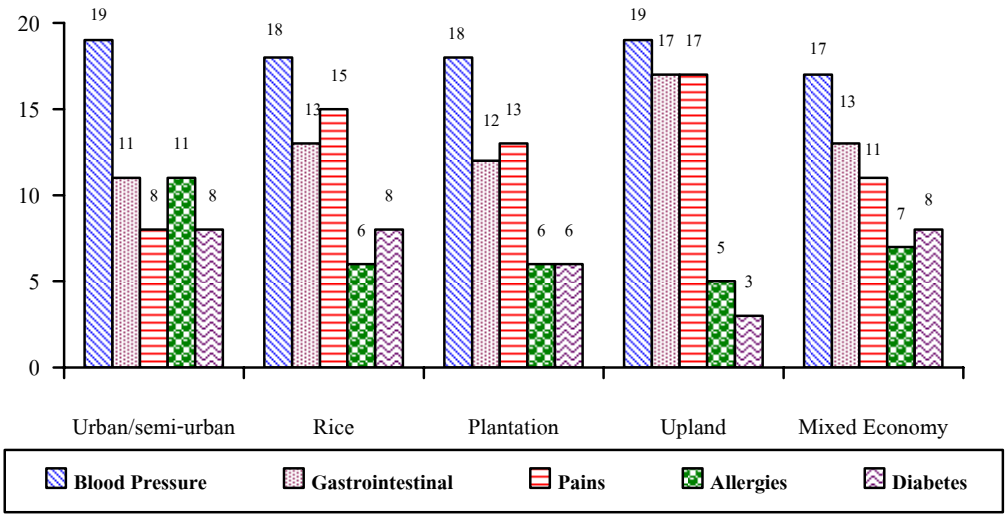

Figure 10.1 Percent of population affected by the five most frequently the most common top five of reported chronic illness by strata

The population in every area were most likely to report non-communicable diseases (67%), followed by communicable diseases (2%) and disease-unspecified/ symptoms (30%). (Table 10.3)

Table 10.3 Percentage distribution of population reported chronic illness by category of group of chronic diseases, and strata

Chronic Illness	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Communicable Diseased	1.3	2.2	2.7	2.6	2.4	2.2
Non-communicable Diseased	74.8	65.2	65.8	61.9	68.3	67.3
Symptoms (unspecified)	23.9	32.5	31.4	35.5	29.2	30.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	1,981	1,737	1,601	2,013	2,137	9,469

Illness in the past one month

Illness in the past one month is defined as a recent illness, unwell feeling, or accident that deprived or reduced the capacity of the respondents to undertake their daily living activities.

The prevalence of recent illness in the past one month of the population in the Kanchanaburi surveillance areas was 14 percent to 15 percent. The population in the Urban/semi-urban stratum had the lowest prevalence of recent illness (10 percent). In each stratum, the prevalence of recent illness was higher for women than for men (Table 10.4).

Table 10.4 Percentage distribution of population by having illness in the pasta past one month by sex and strata

	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed economy	Total
Illness in the Past One Month						
Exhibited	10.0	14.1	15.4	15.3	14.9	13.9
Did not exhibited	90.0	85.9	84.6	84.7	85.1	86.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	5,820	4,912	4,446	6,986	5,950	28,114*
Female						
Exhibited	10.9	14.8	17.6	16.8	17.0	15.4
Did not exhibited	89.1	85.2	82.4	83.2	83.0	84.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	3,277	2,715	2,409	3,690	3,254	15,345**
Male						
Exhibited	8.8	13.2	12.8	13.7	12.4	12.2
Did not exhibited	91.2	86.8	87.2	86.3	87.6	87.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	2,543	2,195	2,037	3,295	2,696	12,766***

* No data 2,104 cases, ** No data 86 cases, *** No data 58 cases

The five most common reported illnesses in the past month (ordered by prevalence) were: (1) colds, (2) headaches/dizziness/migraine, (3) muscle/bone pains, (4) gastrointestinal diseases (ulcers/gastroenteritis/stomachache/flatulence), and (5) high/low blood pressure.

The most often reported illness for all strata was colds, ranging from 21 percent to 27 percent. The second and third most frequently reported diseases differed among stratum. In the Urban/semi-urban areas, gastrointestinal diseases and headaches were the second and third most reported illnesses (10 percent and nine

percent, respectively). In the Rice stratum, gastrointestinal diseases, muscle/bone pains, and headaches were the second and third most frequently reported illnesses (11 percent, 11 percent and 10 percent, respectively). Headaches and gastrointestinal diseases were the second and third most frequently reported illnesses for the Plantation stratum (10 percent and nine percent, respectively), while the second and third most frequently reported illnesses for the Uplands stratum were headaches and muscle/bone pains (13 percent and 8 percent, respectively), and for the Mixed Economy stratum, gastrointestinal diseases (nine percent), muscle/bone pains (nine percent) and headaches (eight percent). (Figure 10.2)

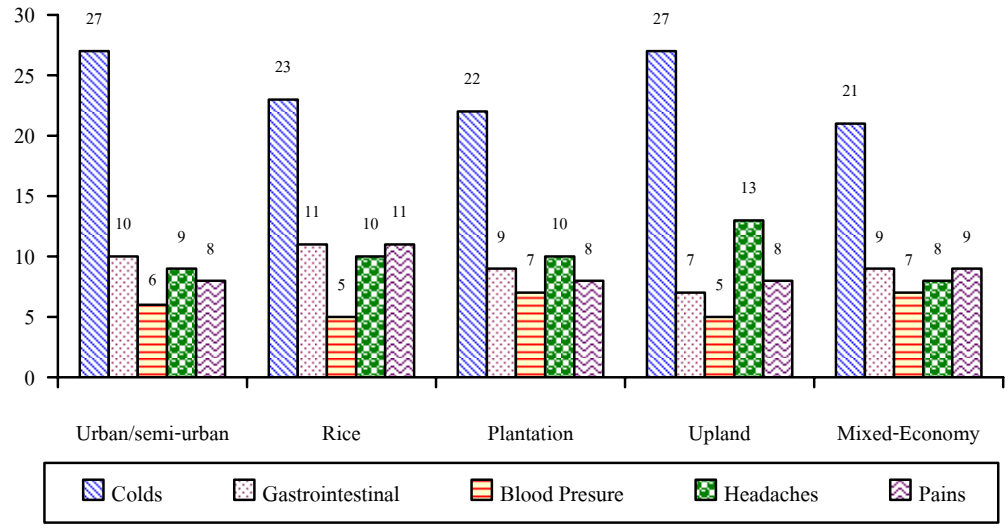

Figure 10.2 Percent of population aged 15 and above reporting each of the five of the most commonly top five of the reported illness in the past one month by strata

Women were more likely than men to report illness in the past one month (15 percent and 12 percent, respectively). The highest prevalence was for women in the Plantation stratum (17 percent), while the lowest prevalence for women was for those living in the Urban and semi-urban stratum (11 percent). Among men, the highest prevalence was observed for the Uplands stratum (14 percent). For both men and women the prevalence of recent illness was lowest in the Urban/semi-urban stratum (Table 10.4).

When recent illness is categorized into communicable disease, non-communicable disease, and disease-unspecified/symptoms, the population aged 15 and above in all strata reported similar levels for each category (about 31 percent, 32 percent and 38 percent, respectively). Communicable diseases were reported most often by residents of the Uplands stratum (38 percent) whereas non-communicable diseases were reported most frequently in the Mixed-economy stratum (40 percent), and the disease-unspecified/ symptoms were reported at the highest level in the Rice stratum (43 percent). (Table 10.5)

Table 10.5 Percentage distribution of population who reported illness in the past one month by category group of diseases and strata

Symptoms	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed-Economy	Total
Communicable Diseased	32.5	27.8	26.7	37.9	26.0	30.7
Non-communicable Diseased	34.4	29.7	37.7	21.0	39.2	31.6
Symptoms (unspecified)	33.0	42.5	35.6	41.1	34.7	37.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	578	690	685	1,071	887	3,911

Levels of reported illness in the past month increased with age, with 20 percent of the population aged 60 years and over, and 15 percent of the population aged 50-59 reporting an illness in the last month. The level was only 12 percent for those aged 15-39 years. (Table 10.6)

Table 10.6 Percentage distribution of population who reported illness in the past month by age one month by age

	Age (Year)				
	15-39	40-49	50-59	60+	Total
Illness in the Past One Month					
Exhibited	11.8	13.1	15.9	20.3	14.0
Did not exhibited	88.2	86.9	84.1	79.7	86.0
Total	100.0	100.0	100.0	100.0	100.0
N	13,826	6,145	3,935	4,343	28,249*

* No data 1,969 cases

10.2 Summary

About one-third of the population aged 15 and above in the KDSS reported having a chronic illness, especially illness from non-communicable diseases. The most commonly reported diseases were: high/low blood pressure, gastrointestinal diseases, muscle and bone pain, allergies and diabetes (ordered by magnitude). The level of chronic illness was higher among women than men, increased with age, and was especially high for the elderly population (64 percent). The level of illness within the past month was reported at about14 percent for the population in the KDSS, and was highest for the residents of the Plantation and Uplands strata (about 15 percent). Women in all strata had higher levels of reported prevalence than men (15 percent and 12 percent, respectively). The five recent illnesses most frequently reported were colds, headaches, muscle and bone pains,

gastrointestinal disease, and high/low blood pressure (ordered by magnitude). Colds were the most frequently reported illness in all strata. Levels of recent illness increased with age, and at 20 percent, were especially high for the population aged 60 and over.

11. Economic and Health Security of Persons Age 50 to 64

Kusol Soonthorndhada

The social security system for the elderly is based on the concept that the welfare of elderly should not only be the responsibility of the community in which they live, but that all society should take responsibility. The main strategy in creating security for the elderly is to prepare them to live into old age, and to encourage self-reliance in socioeconomic and health dimensions for as long as possible. Many countries today emphasize elderly income and health security by supporting savings, employee-contributed pensions, and social security systems. The development of the social security system for the elderly focuses on (1) self-reliance of the elderly, including preparations for old age and capability enhancement for a meaningful life, (2) family participation to help the elderly in the dependency period adjust themselves and live with integrity, and (3) support from governmental and private agencies, and the communities.

This research on the socioeconomic security of the elderly population in the field site population used data from the Kanchanaburi Project Round 5 (2004), focusing on the population aged 50-64 years and their sources of income, to understand this age group's projection of their income and residential security.

11.1 Socioeconomic security of the elderly

The study on income security of the population aged 50-64 years was categorized by strata, age, level of education, and sex. When categorized by strata, the respondents thought that they would gain income from their children/

grandchildren (62 percent) and from working (49 percent). Those in the Urban/semi-urban areas had the lowest percent who expected to receive income from their children/grandchildren, and the highest percent expecting to rely on their savings and other assets. In contrast, the respondents in the Uplands stratum were the most likely to expect that their income would be obtained from their children/grandchildren and least likely to expect to rely on savings (Table 11.1).

Table 11.1 Percent of persons aged 50-64 years reporting of sources of expected future income by strata

Sources of Income	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Work	42.7	57.1	45.6	51.3	48.3	48.9
Property	20.1	17.0	14.4	4.9	12.0	13.4
Savings	35.6	16.6	22.1	13.7	25.7	23.0
Children/Grand-children	56.1	62.6	64.8	67.0	59.7	61.9
Pension/retirement	14.3	1.1	2.3	2.5	8.4	6.1
Social security	6.9	1.7	5.7	2.8	4.9	4.5
Dividend from stock/cooperative	7.8	3.3	6.6	5.9	8.4	6.6
Insurance	26.5	22.9	26.2	6.8	21.8	20.3
Informal share/loan	4.0	1.6	1.8	1.1	2.3	2.2
Total	1,106	883	789	1,176	1,173	5,127*

* Exclude 13 cases of non-response; Multiple response question

The older the person the more likely they expected to rely on income from their children/grandchildren. Also the older the person, the lower the expectation that they could obtain income from working. For other sources of income, the expectations across age groups were similar (Table 11.2).

Table 11.2 Percent of persons aged 50-64 years reporting sources of expected future income by age

Sources of expected future income	Age (year)			
	50-54	55-59	60-64	Total
Work	56.0	45.9	41.1	48.9
Property	13.0	13.7	13.5	13.4
Savings	22.7	24.8	21.4	23.0
Children/Grand-children	56.3	62.6	69.9	61.9
Pension/retirement	6.5	6.2	5.4	6.1
Social security	4.5	4.6	4.4	4.5
Dividend from stock/ cooperative	7.7	6.6	4.8	6.6
Insurance	20.8	20.2	19.6	20.3
Informal share/loan	3.0	1.6	1.5	2.2
Total	2,178	1,581	1,381	5,140

Multiple response question

Respondents with higher education levels, compared to those with lower education levels, are more likely to expect future income from savings, assets, pensions, dividends/cooperative shares, and life insurance, and less likely to expect future income from children/grandchildren (table 11.3).

Table 11.3 Percent of persons aged 50-64 years reporting sources of future expected income by education

Sources of Future expected income	Lower Primary	Higher primary	Secondary	University and higher	Total
Work	48.5	55.1	49.2	45.3	48.9
Property	12.2	16.9	22.6	27.1	13.5
Savings	19.2	34.7	47.2	70.4	23.0
Children/Grand-children	64.2	54.2	53.6	31.5	61.9
Pension/retirement	1.7	8.9	27.4	74.4	6.2
Social security	4.4	3.1	5.2	6.9	4.5
Dividend from stock/cooperative	5.2	8.4	12.5	29.1	6.6
Insurance	18.9	24.0	31.9	38.4	20.3
Informal share/loan	2.0	1.8	4.0	4.9	2.2
Total	4,385	225	248	203	5,062*

***** Exclude cases 78 cases of non-response. Multiple response question

Men are more likely than women to expect future income from working and from pensions, and less likely to expect that their future income will come their children/grandchildren (Table 11.4).

Table 11.4 Percent of persons aged 50-64 years reporting sources of expected future income by sex

Sources of future expected income	Sex		
	Male	Female	Total
Work	56.8	42.2	48.9
Property	14.1	12.7	13.4
Savings	23.5	22.6	23.0
Children/Grand-children	57.0	65.9	61.8
Pension/retirement	8.9	3.8	6.1
Social security	5.6	3.5	4.5
Dividend from stock/cooperative	8.4	5.1	6.6
Insurance	21.9	18.9	20.3
Informal share/loan	1.8	2.5	2.2
Total	2,345	2,795	5,140

Multiple response question

Living arrangements is an important dimension of security for the elderly. The majority of the study population aged 50-64 in all strata expected to live with their children (63 percent). This was followed by living with their spouses (24 percent). Only seven percent thought they would live alone and six percent expected that they would live with other relatives (father/mother/ brothers/sisters/other) (Table 11.5).

Table 11.5 Percentage distribution of older persons aged 50-64 years expected future living arrangements by strata

Future co-residential living arrangement	Urban/ semi urban	Rice	Plantation	Uplands	Mixed-economy	Total
Living alone	8.7	4.0	7.8	6.0	8.2	7.0
Living with spouse	21.9	19.7	23.5	27.0	27.0	24.1
Living with children	62.7	69.6	63.6	63.6	58.6	63.3
Others (parents, relatives)	6.7	6.6	5.1	3.3	6.2	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	(1,082)	(866)	(769)	(1,158)	(1,159)	(5,034)*

***** Excludes 106 cases of non-response

11.2 Health security

The 30-Baht Health Scheme was first implemented in Thailand in 2001, and apart from some subsequent changes in scope and objectives remains in operation. Almost one in five of persons aged 50-64 did not have the gold card that signifies participation in the scheme. Most of those without a card were living in the Urban/semi-urban and Uplands strata. Some of those without a card are likely migrant workers and ethnic minorities who are stateless or who have other kinds of cards issued by the Ministry of Interior. In the Mixed Economy stratum, 20 percent did not have a gold card. Almost half of the 30-Baht health card owners had never used the service (Table 11.6).

Table 11.6 Percentage distribution of persons aged 50-64 years gold health care card status by strata

Card Utilization	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed-economy	Total
Have card and ever used	25.7	52.3	51.0	45.5	44.5	43.1
Have card and never used	48.5	43.5	39.3	29.3	35.2	38.8
Do not have card	25.8	4.2	9.7	25.2	20.3	18.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	(1,147)	(948)	(819)	(1,229)	(1,203)	(5,346)*

***** Excludes 23 cases of non-response

Women were more likely than men to both have the card and to have used the card (Table 11.7). There was little difference among age groups in the proportion that had a 30- baht health card. However, as might be expected, the older the person the more likely they were to use the card for healthcare.

Those with higher levels of education were less likely to have used the card than those with lower levels of education, and were also more likely to not have the card. This was particularly evident for those who had who had graduated with a bachelor's degree or higher (about 65 percent).

The higher the income the lower the probability of having a gold card, with, 49 percent of the study population with the highest level of income (more than 100,000 baht yearly) not having a 30-Baht health card. For those with a card, the higher the income the lower the level of using the card. Forty seven percent of those with no income used the card, almost quadruple the percent of those with the highest level of income (12 percent).

In summary, women were more likely than men to have the card and use them. Increasing age was associated with increased use of the cards. Higher level of

education and income was associated with a reduced likelihood of both having and using a gold card. Those with higher education are probably covered by other health care schemes such as those for public servants, state enterprise employees, or they might use social security cards

Table 11.7 Percentage distribution of persons aged 50-64 years who utilized of gold card by sex, age group, education level and income

	Possession and utilization of gold card				
	Have and ever used	Have and never used	Never have card	Total	(N)
Sex					
Male	35.2	44.5	20.3	100.0	(2,454)
Female	49.8	34.0	16.2	100.0	(2,912)
Total	43.1	38.8	18.1	100.0	(5,366)
Age group (Years)					
50-54	40.1	41.4	18.5	100.0	(2,308)
55-59	44.4	37.6	18.0	100.0	(1,627)
60 and over	46.7	36.0	17.3	100.0	(1,431)
Total	43.1	38.8	18.1	100.0	(5,366)
Education Level					
Lower primary	47.2	39.0	13.8	100.0	(4,561)
Higher primary	34.7	43.6	21.6	100.0	(236)
Secondary	22.2	40.6	37.2	100.0	(266)
University and higher	4.2	30.7	65.1	100.0	(215)
Others	50.0	0.0	50.0	100.0	(2)
Total	43.6	38.9	17.4	100.0	(5,280)
Income (Baht)					
No income	46.5	40.0	13.5	100.0	(2,712)
Less than 50,000	47.5	37.1	15.4	100.0	(1,395)
50,000-100,000	33.1	46.5	20.3	100.0	(344)
More than 100,001	12.0	38.7	49.3	100.0	(432)
Total	42.8	39.5	17.7	100.0	(4,883)

Frequency of use of the 30-Baht health card

The mean frequency of use of those aged 50 to 64 who had the 30-Baht health card and used to for healthcare was about four times a year in all strata except the urban/semi-urban stratum, for which the average frequency was slightly lower. The higher proportion of users of the gold card, had used it 1-4 times yearly (Table 11.8).

Table 11.8 Percent distribution of older persons aged 50-64 years who had the gold card by frequency of utilization and strata

Utilization	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed-economy	Total
Never used	65.5	45.4	43.8	39.3	44.6	47.6
Ever used 1-4 times	22.1	32.2	35.7	40.5	36.3	33.5
Ever used 5-9 times	6.1	11.1	7.6	7.0	7.9	8.0
Ever used 10 times or more	6.2	11.2	12.8	13.3	11.2	11.0
Mean (Times)	3.8	4.3	4.1	4.1	4.3	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	(849)	(907)	(733)	(917)	(950)	(4,356)*

***** Exclude 50 cases of non-response

Reasons for not using the 30-Baht health card

Those persons aged 50 to 64 who had a gold card but did not use it were asked why they did not use the card. The main reason for not using the card was that they had not been sick or had only minor illnesses (69 percent). This response was most common in the Uplands (85 percent). The percent providing this reason in the Plantation, Mixed economy, Rice fields, and Urban/semi-urban strata were 77 percent, 72 percent, 71 percent and 52 percent respectively. Other reasons were inconvenience/long wait/unqualified medication (14 percent), used other cards (14 percent), and that they were non-residents (three percent). About a

quarter of the population in the Mixed economy and Rice strata did not use the 30 Baht health cards because they had other cards (Table 11.9)

Table 11.9 Percent distribution of persons aged 50-64 years with reported reasons of never use of gold card by strata

Reason of never use of gold card	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed-economy	Total
Not ill	51.5	71.3	77.3	84.7	71.5	69.3
Not convenient/not trust quality of medicine/ long waiting time	18.5	15.7	11.2	8.3	13.1	13.9
Migrate from other places	3.1	1.0	4.0	4.2	3.3	3.0
Used other cards	26.9	12.0	7.5	2.8	12.1	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	(557)	(407)	(322)	(360)	(421)	(2,067)*

***** Exclude 1,302 cases of non-response

Illnesses of the elderly who used the 30-Baht health cards

When categorized by illness type, the elderly in all strata used the card to receive treatment for non-communicable diseases (27 percent), unspecified symptoms (15 percent), other reasons (accidents/pregnancy/vaccine injection/wound dressing/ other) (6 percent), and communicable diseases (5 percent) (Table 11.10).

Table 11.10 Percentage distribution of persons aged 50-64 years who ever used gold card by type of disease for which card used

Diseases	Urban/ semi-urban	Rice	Plantation	Uplands	Mixed-economy	Total
Non-communicable diseases	21.7	25.4	29.6	26.4	32.2	27.1
Symptoms (unspecified)	7.9	25.5	17.7	18.3	13.1	15.0
Other	3.2	6.0	5.4	8.7	5.2	5.7
Communicable diseases	1.8	4.7	3.7	7.4	4.9	4.6
Never used	65.5	45.5	43.6	39.2	44.6	47.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	(849)	(906)	(736)	(919)	(950)	(4,360)*

***** Exclude 1,009 cases of non-response

11.3 Summary

This study of the socioeconomic security of the elderly (aged 50-64) covers three aspects: Economic security (income), social security (residence) and health security. For income security, about 62 percent of the elderly expected to rely on income from their children/grandchildren, while 49 percent expected their income from working, and the rest expected their income to come from savings, life insurance and other assets. With regard to residential security, 63 percent of the elderly expected to live with their children, 24 percent with their spouses, seven percent alone and six percent expected that they would live with other persons.

Eight two percent of the population age 50 to 64 had the 30-Baht health cards. Half of those who had the cards made use of them. Twenty-seven percent of the card owners applied the cards for treatment of non-communicable diseases, 15 percent for treatment of unspecified symptoms, and 5 percent for treatment of

communicable diseases. The reasons for not using the health card among those who had cards, were that they had not been sick or had only minor illnesses (almost 70 percent), inconvenience/long wait/unsuitable medication (14 percent), and that they used other cards (social security cards/public servant cards/private health insurance cards) (14 percent).

12. Summary

Aree Jampaklay

The 5th round census of the Kanchanaburi DSS (2004) includes demographic, economic, social, and health data of the population living in the field site communities, including villages and census block in the Urban/Semi-urban, Rice, Plantation, Upland, and Mixed Economy strata. All households and household members were enumerated. Household and individual lists from the previous rounds were updated. The household and individuals enumerated in this 5th round (2004) includes individuals who were interviewed in the last round and remained in the household, those who moved out, those who moved into the household, both temporary and permanent, and those who passed away during July 1, 2003-June 30, 2004. The census used structured questionnaires as the tool to collect data from households and individuals. A group interview technique was used for collecting data at the village level. The fieldwork team consisted of 10 supervisors and 68 interviewers.

The response rate for this round is 95 percent for households and 94 percent for individuals. The average time spent for interviewing each household is 16 minutes, while it took about 14 minutes on average for interviewing each individual. About 92 percent of interviewers evaluated the data as good or very good in quality.

The main results of the 5th round census are summarized below.

1. General Characteristics

A total of 42,938 individuals from 12,462 households were enumerated. Women slightly outnumbered men. The population was largest in the Uplands stratum. The size of the enumerated population is similar to that recorded in the 4th round census. Minor variations in the age and sex structure were observed i.e. there are more boys than girls but fewer boys than girls at adult age. The population in the Uplands area has a higher proportion of young persons compared to other strata. This leads to this stratum exhibiting the highest dependency ratio. The stratum with the lowest dependent ratio is the Urban/semi-urban stratum where the proportion of the population at the younger ages is smallest.

2. Social and Economic Characteristics

The main occupation for men and women in the field site remains agriculture, with the exception of the Urban/semi-urban stratum. The second major occupational category is craft/labor for men and sales for women. In the Urban/semi-urban stratum, a high proportion of men work in crafts/labor, followed by agriculture and sales, while the greatest proportion of women work in sales sector followed by agriculture and labor. There is a smaller proportion of men unemployed than women. The proportion of unemployed men is highest in the Urban/semi-urban stratum, while the proportion of women unemployed is highest in the Uplands stratum.

Educational opportunities of the study population in different strata are not equal, especially compared between the Urban/semi-urban stratum and other strata. Educational differentials between genders are also observed. The proportion of those

who have never been in school is smallest, while the proportion attaining more than secondary school is highest, in the Urban/semi-urban stratum. People in the Uplands stratum have the lowest educational levels compared to other strata. Women have lower levels of educational attainment than men in all strata. Gender differentials in educational attainment are smallest in the Urban/semi-urban stratum and highest in the Plantation stratum.

Almost all households use Thai as their language used daily, except in the Upland stratum where more than a one-third of households use non-Thai languages. Most of the non-Thai languages used are Karen/Karaang/Pakayaw followed by Mon, Laotians, and Burmese.

3. Fertility

Fertility in the DSS has reached the replacement level and is there is a high level of control of fertility. Fertility is lowest in the Urban/semi-urban stratum and highest in the Upland stratum. The main factor in reducing fertility is contraceptive use. The most frequent methods used are female sterilization, pills, and injection. About 90 percent of those currently using contraceptives use one of the three above-mentioned methods. About three fourths of current contraceptive users received services from government facilities. People in strata outside of urban areas primarily access contraception through health centers, while those in the Urban/semi-urban stratum mostly use government hospitals. Most current users are happy with the services received, suggesting a high quality of family planning facilities in the DSS area.

4. Mortality

There were 326 deaths in the study population during the period July 1, 2003–June 30, 2004. The crude mortality rate is seven per 1000 population. Both the number of deaths and the crude death rate increased relative to the 4th round of the census (2003). The mortality rate of men is slightly higher than that of women. Among strata, two mortality patterns can be specified. The crude mortality rate of the study population in the Urban/semi-urban, plantation, and Mixed economy strata is 7-8 per 1000 population, while the crude mortality rate of the Rice and Upland strata is 5-6 per 1000 population. There are no differentials in terms of mortality pattern between genders. The mortality pattern is a high mortality rate for infants, declining for children, low for young adults, and high again after middle-age, and very high for those at elderly ages. Age-specific mortality rates for women are lower than men in almost all age groups. More than 80 percent of deaths in the study area are caused by morbidity, i.e. 46 percent from non-communicable diseases, 22 percent from aging, and 17 percent from communicable diseases. Deaths caused by accidents, crime, and suicides decreased compared to the previous round (2003). About 93 percent of deaths were reported and registered in the death registration system.

5. Migration

Most people in the study area (75 percent) were non-migrants in the period during July 1, 2003-June 30, 2004). The net migration rate is five per 100 persons, and is higher that that recorded in the previous census. The in-migration rate and out-migration rate are highest in the Upland stratum, and lowest in the Rice stratum. Men were more likely to move than were women. Migration is most common among those aged 15-29 years old, and includes those who moved for further

study, for work, or for marriage. Most migration is intra-province or between Kanchanaburi and Bangkok/other provinces in the Central region.

6. Health Behavior

Health behavior in this round of the census includes eating behavior, water consumption, unhealthy eating behavior, and exercise. Results show that people in the Uplands stratum have unhealthy eating behavior, including consuming salty, spicy, sweet, instant, or oily food, half-cooked meat and junk food more than persons living in other strata. They also smoke more than persons in other strata. Meanwhile, people in the Rice, Mixed economy, and Urban/semi-urban strata regularly take energy enhancing drinks more than in the other two strata. For water consumption, those in the Urban/semi-urban stratum are the most likely to consume bottled water, while those in other strata are more likely to consume rain water.

Patterns of exercise in all strata indicate that playing sport in the most frequent form of exercise, followed by jogging, workouts, aerobic exercise, fast-walking, and exercise using tools/riding bicycle, respectively. People in the Upland stratum exercise more regularly than those in other strata, while those in the Mixed economy and Urban/semi-urban strata jog and workout Urban/semi-urban residents also most likely to undertake aerobic exercise or exercise using tools/riding bicycle. The site of exercise for most people use is empty places in the neighborhood or inside/near the house. Sites for exercise provided by the government were reported by respondents in the Urban/semi-urban strata. Respondents in the Urban/semi-urban as well as those in the Mixed economy strata also use public parks to exercise.

7. Health Status

About two thirds of the study population reported an absence of chronic disease. For those who do have a chronic disease, most report hyper/hypertension, stomachache, arthritis, allergies, diabetes and backache, respectively. Categorized by group of diseases, about two thirds have non-communicable diseases and undiagnosed diseases. Most of the respondents did not have any sickness within the previous month. Among those who did, the most common illnesses reported colds, headache, stomachache, hyper/hypotension and backache. Most of these symptoms were undiagnosed or related to non-communicable disease.

8. Economic and Social Security of Persons Age 50 to 64

Most people aged 50-64 years old reported that they would depend on their children's/grandchildren's income when they became elderly. About half remained economically active. Among others, the majority expected to obtain their income from savings, insurance, and properties. With regard to living arrangements, most 50-64 years old respondents plan to stay with their children, with the next most commonly expected living arrangement being living with their spouse. For health security, most respondents have the 30-baht (Gold) health insurance card. About one third had used the card to obtain treatment for symptoms of non-communicable disease. For those who have the card, but have never used it, the main reasons given was that have never been sick or not sufficiently sick to use the health service.

Appendix

Appendix 1

Additional tables

Table A2.1 Number of eligible cases, number interviewed, response rate and average time of interview (in minutes) by type of questionnaire

	Type of questionnaire	
	Household	Individual
Number of cases in 2003	17,007	30,215
Number of cases that moved out	3,514	-
Number of cases that interviewers could not access	441	-
Number of eligible cases	13,052	30,215
Number of interviews	12,439	28,251
Number of non response cases	613	1,964
Response rate	95.30	93.49
Average time interview	15.85	13.62

Table A2.2 Number and percent distribution of non-response by reason and type of questionnaire

Reason	Household		Individual	
	Number	Percent	Number	Percent
Refused to be interviewed	126	20.6	260	13.2
Not available/ busy working	181	29.5	1,200	61.1
Sick/old/handicap	18	2.9	462	23.5
No permanent residents	248	9.4	-	-
No permanent residents/ house closed	172	28.1	-	-
Deceased	82	13.4	-	-
Imprisoned	10	1.6	-	-
Other	18	2.9	29	1.5
Do not know/no answer	6	1.0	13	0.7
Total	613*	100.0	1,964	100.0

***** not included 3,514 households that moved out and 441 households that interviewers could not access

Table A2.3 Percentage distribution of respondents by question and questionnaire

Question	Household		Individual	
	Number	Percent	Number	Percent
What was the place where the interview was held like?				
Free from disturbances/ very private	6,112	49.1	11,416	40.4
There was some disturbance, but it did not affect the interview.	5,699	45.8	15,391	54.5
There was a disturbance and it affected the interview.	567	4.6	1,330	4.7
There was a lot of disturbance and the interview had to be stopped often/it is spoiled the atmosphere	55	0.4	99	0.4
Do not know/ no answer	6	0.0	15	0.1
Total	12,439	100.0	28,251	100.0
Was there anyone else present during the interview?				
Yes, all the time.	6,587	53.0	15,471	54.8
Yes, sometimes.	886	7.1	2,229	7.9
No, not at all.	4,954	39.8	10,536	37.3
Do not know / no answer	12	0.1	15	0.1
Total	12,439	100.0	28,251	100.0
If there was another person in this interview, who was it? (Can answer more than one person)				
Other family members	5,501	57.3	14,704	64.5
Friend	430	4.5	794	3.5
Neighbor	2,673	27.9	5,126	22.5
Interpreter	223	2.4	457	2.0
Others (relatives, other interviewers, etc.)	756	7.9	1,711	7.5
Total	9,593	100.0	22,792	100.0

Table A2.3 (Continued)

Question	Household		Individual	
	Number	Percent	Number	Percent
Did such person answer or give opinions for the respondent?				
Yes, a lot.	234	3.1	528	3.0
Yes, sometimes.	1,388	18.5	3,023	17.1
Yes, a little.	1,581	21.1	3,710	20.9
Not at all.	4,258	56.9	10,418	58.8
Do not know / no answer	24	0.3	38	0.2
Total	7,485	100.0	17,771	100.0
How much cooperation did the respondent give during the interview?				
Very good	6,597	53.0	14,650	51.9
Good	5,567	44.8	12,849	45.5
Average	225	1.8	611	2.2
Little	41	0.3	122	0.4
Do not know / no answer	9	0.1	19	0.1
Total	12,439	100.0	28,251	100.0
How did the respondent behave during the interview?				
Enjoyed answering	11,390	91.6	25,404	89.9
Indifferent	985	7.9	2,724	9.7
Reluctant to answer in some questions	37	0.3	62	0.2
Showed dissatisfaction of some questions	17	0.1	26	0.1
Do not know / no answer	10	0.1	17	0.1
Total	12,439	100.0	28,251	100.0
In general, what is the quality of the data obtained from this interview like?				
Very good	5,557	44.7	12,346	43.7
Good	5,872	47.2	13,510	47.8
Satisfied	963	7.7	2,307	8.2
Not good	38	0.3	70	0.2
Do not know / no answer	9	0.1	18	0.1
Total	12,439	100.0	28,251	100.0

Table A2.3 (Continued)

Question	Household		Individual	
	Number	Percent	Number	Percent
Reason for low quality of interview				
Foreigner	6	13.0	7	0.0
Drunk	2	4.3	7	0.0
Very old	3	6.5	6	0.0
Brain damage	1	2.2	2	0.0
Do not cooperate	12	26.1	25	0.1
Sick	3	6.5	7	0.0
Absent minded/ too serious	-	-	3	0.0
Young respondent/ not know information	9	19.6	1	0.0
Another person answer for respondents	-	-	8	0.0
Do not know / no answer	10	21.7	22	0.1
Total	46	100.0	88	100.0

Table A7.1 Age specific fertility rates and total fertility rates by strata, 2004

Age	Agespecific fertility rates					
	Urban/ semi-urban	Rice	Plantation	Upland	Mixed Economy	Total
15-19	0.04422	0.06863	0.07921	0.11702	0.07500	0.07724
20-24	0.08943	0.11111	0.14451	0.17737	0.11567	0.13098
25-29	0.08273	0.07336	0.07063	0.12441	0.10154	0.09423
30-34	0.06325	0.06207	0.04710	0.08583	0.06612	0.06716
35-39	0.02571	0.03274	0.02642	0.06127	0.02459	0.03562
40-44	0.00278	0.00980	0.00656	0.01456	0.00840	0.00858
45-49	0.00345	0.00000	0.00000	0.00331	0.00375	0.00242
TFR*	1.56	1.79	1.87	2.92	1.98	2.08

Note: * Total Fertility Rate

Table A7.2 Percent distribution of contraceptive users by source and strata, 2004

Source	Urban/ semi-urban	Rice	Plantation	Upland	Mixed Economy	Total
Government hospital	55.2	39.8	41.2	37.4	52.5	45.0
Public health center	7.0	42.2	36.2	40.3	22.5	29.9
Private hospital/ clinic	8.7	4.5	4.7	4.8	7.0	6.0
Drug store	26.8	9.6	12.1	12.1	15.6	15.1
Grocery	0.8	3.2	4.2	3.4	2.0	2.7
Others	1.3	0.3	1.1	1.8	0.3	1.0
No answer	0.3	0.4	0.5	0.2	0.1	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Appendix 2

Questionnaires

Kanchanaburi Project

Round 5 (Year 2004)

Institute for Population and Social Research, Mahidol University

Village Questionnaire

Village No. ……
District ___ ___
Sub-district ___ ___
Village ___ ___

Village No…….. ……Village name…… Sub-district……..……
District ……..……..…….. Kanchanaburi Province

Date of interview .……month……2005
Starting at……..……. Ending at…….
Total time ……..……...……

Name of Interviewer ……..……..……...……...……
Name of Field Supervisor……..…….. D/M/Y ……...……...…..…….
Name of Editor…… D/M/Y……..
Name of Coder…… D/M/Y……..

Opinion of interviewer ……...……
……...……
……..
……..
……
……

Consent form

To……

The Institute for Population and Social Research, Mahidol University is collecting basic socio-demographic, economic and environmental data from 89 villages and 13 census blocks for the fifth year in Kanchanaburi. The data from the interview will be used to follow population changes in Kanchanaburi Province. The interview will take around 40 minutes.

All concerned data from the interview are confidential and will be used only for research purpose. The data will be analyzed and presented as a research report without quoting the name of the respondent. The respondent has absolute right to refuse to give interview or to answer any specific question. The respondent can stop answering questions any time during the interview if he/she feels uncomfortable.

The institute looks forward to your cooperation. Any other question or any other information can be directed to the institute at the following address.

Yours sincerely,

(Assc.Prof. Dr. Bencha Yoddumnern-Attig)
Director of Institute for Population and Social Research,
Mahidol University at Salaya,
Putthamonthon, Nakhonpathom
Tel. 0-2441-9520

I clearly understand the interview purpose reading by myself or by interviewer and give my signature or interviewer's signature for confirmation.

Name…… Interviewee	Name…… Interviewee
Name…… Interviewee	Name…… Interviewee
Name…… Interviewee	Name…… Interviewer
	(Sign for interviewees)
	Date……month…….....2004

Village information is collected in a group interview which includes not less than 3 persons

Village Data

Name of respondents	Position	Age (years)	Sex
1.	Head of village		
2.	Public health personnel		
3.	Member of Tambon administration organisation		
4.			
5.			
6.			
7.			
8.			
9.			

Additional Information

Village information is collected in a group interview, if the data is incomplete, please attempt to complete

Information issue	Name of respondents	Position	Age (years)	Sex
1.				
2.				
3.				
4.				

Village map improvement by Remote Sensing Satellite

Part 1: General Data

1.1 How many households are there in this village? ……..households (include both those with a house registration number and no house number)

Specify the date that this data was collected ……month …… year…….

1.2 How many people are there in this village?

Total…….. Male…….. Female……

Specify the date that this data was collected ……month …… year…….

1.3 What are the boundaries of this village, if it connects to other villages, please specify name and group no. of these villages.

North connect to ……. Boundary line …….

South connect to ……. Boundary line …….

West connect to …….……. Boundary line …….

East connect to ……..…. Boundary line …….

Village boundary was set on date …… month …… year …..…..

> **Interviewer:** Factory in the village means that a factory that produces, makes or repairs goods and is conducted by a person or a group at one place. This factory can produce more than one product, i.e. wheat factory, spinning factory, artificial flower factory, jewelry cutting factory.

1.4 Are there any factories in this village? (include OTOP factory)

1. Yes ↓ 2. No →

1.4.1 No. of factories……factories

1.4.2

Specify name and type of factory	No. of employees (person)
1……..	……
2……..	……
3……..	……

1.4.3 How far is the nearest factory from this village?…….Kilometers

1.4.4

Specify name and type of factory	No. of employees (person)
1……..……	……..……
2……	……..…
3……...……..	……..……

1.5 **From 1st July 2003 till now,** has any infrastructure in this village changed?

(Please read all items to respondents)

List of infrastructure	No. changed		No. not changed		
	Increase	Decrease	Improve	Not improve	Remarks
1. Number of households					
2. Number of roads					
3. Number of shop/restaurants/ convenience stores					
4. Number of factories					

Place	In village (Specify)	Outside village (Specify)
1.6 Where is the usual village meeting place?		
1.7 Where is the place most villagers go to make merit?		
1.8 Where is the school most children study? 1.8.1 Primary school		
1.8.2 Secondary school		
1.9 Where is the hospital / place most villagers go for treatment?		
1.10 Where is the place most villagers go for recreation?		

Part 2: Agriculture

2.1 What are sources of water for agriculture? *(can answer more than one item)*

a. Irrigated canal
b. Well (specify No. of well) ……
c. River (specify) ……
d. Brook/ Canal /River (specify)…….
e. Swamp
f. Weir
g. Rain
h. Other (specify)……

2.2 Total area of the village …….rai. Land used for agriculture ……rai.

The largest owned piece of land in this village……rai.

The smallest owned piece of land in this village……..rai.

How many households that have no land in this village? …….……..households.

Geographical characteristic of the village is 1. flood plain 2. upland 3. hills

2.3 What types of crops do most villagers plant commercially? *(Can answer more than one item and read all items to respondent)*

a. Rice farming (Specify) ……..…… Area …….rai ……time(s)/year
b. Crop farming (Specify).…… Area …….rai
c. Vegetable (Specify) …… Area …….rai.
d. Fruit orchard (Specify) …… Area …….rai.
e. Tree (i.e. Teak, Eucalyptus) (specify) ……Area …….rai
f. Other (specify) ……Area …….rai.

2.4 **<u>From 1st July 2003 till now,</u>** which kind of animals do most households raise commercially? *(Can answer more than one item)*

a. cow …….households
b. buffalo …….households
c. pig ……..…..….households
d. chicken …….households
e. fish……..….households
f. prawn …….households
g. frog …….households
h. none
i. other(specify) ……...households

(If have no animal for commercial use in the past year skip to part 3)

2.5 What are the main diseases of the animals? What are the methods for treating the problem?

a. disease ……..……..……..Treatment …….……..
b. disease …….Treatment ……...……

Part 3: Occupations

3.1 How many occupations that are conducted in this village ? And what is the percentage of each occupation to the total population ? *(Can answer more than one item)*

a. Occupation 1…….. percent …….
b. Occupation 2…….. percent …….
c. Occupation 3…….. percent …….
d. Occupation 4…….. percent …….
e. Occupation 5…….. percent …….

Part 4: Infrastructure and Transportation

4.1 Does this village have electricity?

1. Yes , since (Year)……. 2. No

4.2 Does this village have tap water?

1. Yes , since (Year)……. 2. No

↓

4.2.1 Is water for the tap system purified by chlorine?
1. Yes 2. No. 3. Don't know

4.2.2 What is the source of tap water?
1. Natural source 2. Underground water 3. Other (specify)……

4.3 What are sources of drinking water? *(can answer more than one item)*

a. rain water c. natural source e. underground water
b. tap water d. shallow well f. purchase drinking water

4.4 What are sources of water for household use? *(can answer more than one item)*

a. rain water c. natural source e. underground water
b. tap water d. shallow well f. purchase drinking water

4.5 How many television channels does this village receive (without satellite)?

……channel(s) (Specify)……

4.6 Does this village have a public telephone?

1. Yes Number. of telephones…….. 2. No
Number. of working telephones.……

4.7 Does this village have a mobile/ cellular phones signal?

1. Yes 2. No

4.8 Is Internet available in this village?

1. Yes 2. No 3. Do not know

4.9 What type of main road do people use for travelling within the village? *(can answer more than one item)*

1. Dirt ……..……km. 3. Asphalt ……..…..km
2. Laterite …….km. 4. Concrete …….km.

4.10 What type of roads do people use for travelling from this village to the district? *(can answer more than one item)*

1. Dirt ……..…km. 3. Asphalt ….……..km
2. Laterite …….km. 4. Concrete …….km.

4.11 What is the way of communication between this village and the district?

1. road 2. water way 3. both 1 and 2

4.12 What is the main route villagers generally use to go to the district?
1. road 2. water way 3. both 1 and 2

4.13 Does this village have a bus route?

1. Yes 2. No

4.13.1 How often does the bus serve this village per day?
1. 1 Round 2. 2-5 Round 3. 6-10 Rounds 4. More than 10 Rounds

4.13.2 The bus fare from this village to the district is ……..…..…..baht

4.13.3 The bus fare from this village to Kanchanaburi city ……bath

4.14 Does this village have a bus that passes from other villages ?

1. Yes 2. No

4.14.1 How many times does the bus pass this village per day?
1. 1 time 2. 2-5 times 3. 6-10 times 4. 10 times or more

4.12.2 How frequent does the bus passes this village (i.e. every half and hour every hour) …….

4.12.3 The bus fare from this village to the district is ……..……..baht

4.12.4 The bus fare from this village to Kanchanaburi city ……..…..baht

4.14.5 (If no) How many kilometers between this village and the bus stop? …….kms.

4.14.6 How many times doe the bus pass the nearest stop per day?
1. 1 time 2. 2-5 times 3. 6-10 times 4. 10 times or more

4.14.7 How frequent does the bus passes this stop (i.e. every half and hour, every hour) ……..

4.15 **From 1st July 2003 till now,** for which months did this village have flooding on the roads?

1. Yes (specify the months) …….. 2. No.

Part 5 : Health

5.1 **From 1st July 2003 till now,** how many deaths occurred in this village?

1. Yes, number…….person(s) 2. None

First Name and Last Name	Address	Cause of death
1.		
2.		
3.		
4.		
5.		

5.2 **From 1st July 2003 till now,** have any new diseases occurred in this village or have old diseases (occurred more than 5 years ago) returned to this village ?

1. Yes →
   - 1.1 Specify new disease……...……
     - 1.1.1 Caused by…….…….
   - 1.2 Specify old disease ……
     - 1.2.1 Caused by …….
2. No

5.3 **From 1st July 2003 till now,** from what kind of disease did most people in this village get sick? What government agencies take responsibility for this disease health?

Specify disease……...……

Government agencies 1……..……2……..……

5.4 **In the last 5 years till now,** from what kind of disease did most people in this village get sick? What government agencies took responsibility for this disease?

Specify disease……...……

Government agencies 1……..……2……..……

Part 6 : Environment

6.1 **In the last 5 years till now,** did people in this village get sick from agricultural chemicals (i.e. pesticide, herbicide) or industrial chemicals?

1. Yes ↓ 2. No

Disease/symptom	Cause	No. of sick person
1.		
2.		
3.		

6.2 **In the last 5 years till now,** did this village have air pollution problem from factories or industrial places (both in and outside the village) or any chemicals? (i.e. pesticide, herbicide)

1. Yes (Specify problem and its cause) …….……
2. No.

6.3 **In the last 5 years till now,** did this village have soil problems from agricultural chemicals, factories or industrial places (both in and outside the village)?

1. Yes (Specify soil problem and its cause) …….…….
2. No.

6.4 **In the last 5 years till now,** did this village have any environmental problem?

1. Yes (Specify) ……...…….
2. No.

6.5 **In the last 5 years till now,** did villagers make any use of the forest? (trees for house construction, bamboo shoot, local product etc.), if yes, how many households?

1. Yes (Specify activities) 1. ……...…… no. of households ……..…….
   2. ……..…..… no. of households ……...……
   3. ……...…… no. of households ……..…
2. No.

6.6 **In the last 5 years till now,** have natural disasters occurred in this village? (i.e. storms, flooding, bush fire), if yes, how many times?

1. Yes. (Specify) ……, occurred…….times(s)
2. No.

Part 7: Community Development

7.1 **From 1st July 2003 till now,** has there been any project (both new and old) for community development in this village? (Please read all items to respondent)

Project	1.Yes → 2. No	If yes , what is the project's characteristic ? 1. one year project 2. continual project *since year…….)
1. One million baht Village Fund		
2. One hundred thousand baht fund		
3. Activated economic fund (One million baht for each Tambon)		
4. Concrete road construction		
5. Water tank construction		
6. Aging programmes		
7. Lunch for school children		
8. Supplementary food for children (milk)		
9. Occupational promotion		
10. Garbage elimination		
11. Drug addict free village (White village)		
12. Sports for anti drug addict		
13. Community (co-operation) store		
14. Anti-drug group's exercise		
15. Other (Specify)…….		
16. Other (Specify)…….		
17. Other (Specify)…….		
18. Other (Specify)…….		
19. Other (Specify)…….		
20. Other (Specify)…….		

Kanchanaburi Project

Round 5 (Year 2004)

Institute for Population and Social Research, Mahidol University

Household Questionnaire

Household ID

District ___ ___

Sub-district ___ ___

Village ___ ___

Household No. ___ ___ ___

Name of household head ……...……

Name of respondent ……His/her order in the household listing……

If respondent is not a household member, then

1. Specify his/her relationship with the eligible household ……..…….

2. Reason why the household 's member could not give information ……..…….

Household No. ……..…… Village No.…..…… Village name ……..……..

Sub-district…….…….. District…… Kanchanaburi Province

Household type 1. Old 2. New

Area 1. Urban 2. Rural

Attempt interviewing no. 1 2 3 4 5 6 7 8 9 10

Date of final interview.……month…..…..Start……End……Total time…… minutes

Result of interview 1.Complete 2. Incomplete 3. Can not interview

Specify the reason for the incompletion……..……

Name of Interviewer ……..……..…….

Name of Field Supervisor ……..……..……..……D/M/Y……..……

Name of Editor…….…… D/M/Y ……..……..

Name of Coder…….…….……..D/M/Y…….

Consent form

To……

The Institute for Population and Social Research, Mahidol University is collecting basic socio-demographic, economic and environmental data from 89 villages and 13 census blocks for the fifth year in Kanchanaburi. The data from the interview will be used to follow population changes in Kanchanaburi Province. The interview will take around 40 minutes.

All concerned data from the interview are confidential and will be used only for research purpose. The data will be analyzed and presented as a research report without quoting the name of the respondent. The respondent has absolute right to refuse to give interview or to answer any specific question. The respondent can stop answering questions any time during the interview if he/she feels uncomfortable.

The institute looks forward to your cooperation. Any other question or any other information can be directed to the institute at the following address.

Yours sincerely,

(Assc.Prof. Dr. Bencha Yoddumnern-Attig)
Director of Institute for Population and Social Research,
Mahidol University at Salaya,
Putthamonthon, Nakhonpathom
Tel. 0-2441-9520

I clearly understand the interview purpose reading by myself or by interviewer and give my signature or interviewer's signature for confirmation.

Name……	Name……...
Interviewer (Sign for interviewee)	Interviewee
Date……month…….....2004	Date……month…….....2004

Interviewer: Household characteristics (observation & interview)

House characteristics

1. What is the house type?

1. Single House
2. Twin-house
3. Block/Shop House/ Home town/ Townhouse
4. Condominium
5. Rental room inside a house/building
6. Wooden rowed house/Boat house/Mobile car
7. Other (specify)……..……

2. Characteristics of the house

1. Bungalow
2. One story house with space under the floor
3. Two stories house
4. More than two stories house
8. None of the above

3. What is the material that the roof is made of?

1. Cepack
2. Tile
3. Zinc Plate
4. Lamparata cylindrica/elephant grass/nipa palm leaf/ teak leaf
5. Bamboo
6. Cement
7. Used material
8. Other (specify)……

4. What is the material the house walls are made of?

1. Concrete/Brick/Stone
2. Tile
3. Zinc plate
4. Lamparata cylindrica/elephant grass/nipa palm leaf/ teak leaf
5. Bamboo
6. Wood
7. Half cement and wood
8. Used material
9. Other (specify)……

5. Does the house have a fence? 1. Yes. 2. No.

If yes : What is the material the fence is made of?

1. Concrete/Brick/Stone
2. Barbed-wire
3. Zinc plate
4. Trees
5. Wood
6. Other (specify)…….……

6. Is the house used as the location for production?

1. Yes (Specify each production activity) …….
   Labor force (in each activity)…….persons
2. No

7. How is air ventilation and sunlight in the house?

1. Good condition
2. Rather poor
3. Poor

8. Are animals raised near the house? (Within 10 meters from the house and neighbor's houses)

1. Yes Specify (kind of animals)……...……distance from house…….…….meters
2. No

Part 1: Basic Information on Household Occupants

1.1 **No.**	1.2 **First/Last Name** Member who lived in this household for at least one month or more	1.3 **Form 1st July 2003 till now, did this person live in this house for 11 months or more?** 1. Yes 2. No	1.4 **Resident status** (see codes)	1.5 **Date of birth**			1.6 **Age** (years)	1.7 **Sex** 1. Male 2. Female	1.8 **Weight** (kgs)	1.9 **Height** (cms)
				Day	Month	Year				
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Code for 1.4 Resident status :

1. Old member and still lives in this household
2. Old member in this household but now moved away
3. Old member but passed away (skip to Part 2)
4. New member and still lives in this household
5. Temporarily lived (means a person who lived in this household more than 1 month since 1st July 2003
6. Temporarily member but passed away
7. Old member that moved away and now moves back
8. Old member that moved away and had not moved back

1.10 **Relationship with head of household** (See codes)	1.11 **Order no. of father in household** (If not have, fill 0)	1.12 **Order no. of mother in household** (If not have, fill 0)	1.13 **Marital status** (See codes) 1. Single 2. Married 3. Widowed 4. Divorced 5. Separated	1.13a **Order no. of spouse in household** (If not have, fill 0)	1.14 **Education level, the highest level of education** (Specify)…….	1.15 **Occupation** (Ask only persons aged 4 and over) What does this person do? (explain in detail on job description, characteristic and type of job)

Codes for 1.10 Relationship with head of household :

1. Head of household	5. Father/mother-in-laws	9. Brother/sister	13. Great grandchild	17. Lodger
2. Spouse	6. Son/daughter	10. Son-in-law	14.Grandfather/grandmother	18. Employee
3. Father	7. Sibling	11. Daughter-in-law	15. Relative	19. Other (Specify)……...
4. Mother	8. Grandchild	12. Nephew/niece	16. Friend	

1.1 **No.**	1.2 **First/last name** Member who lived in this household for at least one month or more	(Q 1.16 - 1.17) **Ask only the persons who answer 4, 5, 6, 7 in Q 1.4 and the new households**							
		1.16 When did this person move into the household? (Month…..… Year……..)		1.17 Before living here, where did this person live? 0. Just born/live here since delivery 1. In this village (Fill previous ID) 2. In this Sub-district (Specify the village code) 3. Other (Specify house no. ……Soi…… Road……Sub-district…….. District…….……..…… Province……..……...…Country……..……..…)					
		Month	Year	Code	Home no./Soi/Road	Sub-district	District	Province	Country
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									

Household summary

Total members in this household ……**persons No. of current members**…… **persons**

This household is

1. New household moved from other villages
2. New household separated from the old one
3. New household occurring by under enumeration in the previous year (lived here before 2003)
4. Old household with household listing in 2003

If answered no. 2, 5 in Q 1.4		**(Q 1.19-1.20) Ask only persons who no longer lived in this household (Answer no. 2, 5 and 8 in Q 1.4)**							
1.18 If the person did not live here anymore when did he move away? (Month….. Year…..)		1.19 **Where is this person currently living?** 1. In this village (enter the code of new household member)……..… 2. In the study village (Specify village code) ……..…... 3. Other places (Specify house no. ……Soi…….Road…… Sub-district……...District……Province…..……Country...…….. Including telephone number of the migrant)							1.20 The person's house location 1. Municipality 2. Rural area 3. Abroad (Specify)……
Month	Year	Code	Home no./Soi/Road/Telephone	Sub-district	District	Province	Country	Code	

1.1 **No.**	1.2 **First/last name** Member who lived in this household for at least one month or more	**Ask only the person who currently lives (Answered 1,4 or 7 in Q 1.4)**									
		1.21 Does the person have difficulty in carrying out normal daily activities (Answered 1,2 then interviewer asks Q 1.22 , if answered 3 then interviewer shift to part 2 (see codes)					1.22 Cause of difficulties in carrying out normal daily activities (see codes)				
		1. Eating	2.Defecation/ Voiding	3.Bathing/ Dressing	4. Daily activity in house	5. Dementia/ Disorientation	1. Eating	2.Defecation/ Voiding	3.Bathing/ Dressing	4. Daily activity in house	5. Dementia/ Disorientation
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

Code for 1.21 Identification in difficulties in carrying out normal daily activities :

1. cannot perform at all 2. can do something but it is difficult 3. no difficulties

Code for 1.22 Cause of self-care difficulties :

1. Congenital deformity
2. Accident in a house / housing area
3. Traffic accident
4. Work accident
5. Sickness (Specify) ……..
6. Old age
7. Other (Specify) …….…….

Part 2: Mortality **(Field Supervisor: Please check the household name list from July 1, 2003 till now. Has anyone died? If no, please skip this part)**

2.1 Did any person in Q 1.4 receive code 3 or 6?
1. Yes ↓ 2. No **(skip to part 3)**

Name of information provider…….……
Relationship with dead person ……...…….…….
Are you a member in this household?
1. Yes (Specify the number in page2. Q 1.1)……...….
2. No.

2.2 First/Last Name	**2.3 No.** (on page 2)	**2.4 D/M/Y of death**			**2.5 Age (years) when the person died**	**2.6 Sex** 1. Male 2. Female	**2.7** Cause of death (see codes)	**2.8** Place of death 1. Government hospital 2. Private hospital 3. Health center 4. Clinic 5. Home 6. On road 7. Other (Specify) …….. ..	**2.9 Did you register the death?** 1. Yes (Continue to Q 2.10) 2. No. (Continue to Q 2.11)	**2.10 If registered, Did you receive a death certificate** 1. Yes 2. No.	**2.11 If not, Why did you not register?** (Specify …...…)	**2.12 Are you a close person of the deceased?** 1. Yes 2. No.	**2.13 Specify Sickness of main cause of death** (Use PALM for the death investigation) **Can not use PALM because…**
		Day	Month	Year									
1.													
2.													
3.													

Code for 2.7 Cause of death :

1. Communicable disease
2. Non- communicable disease
3. Accident
4. Homicide
5. Suicide
6. Old age (for female: age over 70 and for male, age: over 65)
7. Other (specify) ……

Part 3: Household characteristics

3.1 Normally what is the main language that members use for communication in this household? *(only one answer)*

1. Central -Thai	4. Burmese	7. Pol Karen
2. Northestern-Lao	5. Mon	8. Chinese
3. Other group of Lao	6. Sakor Karen	9. Other(Specify) ……

3.2 Does this household have electricity?

1. Yes ↓ 2. No.

3.2.1 What type of electricity?
1. Public electricity
2. Private electricity
3. Own household electricity i.e. Solar cell, Batteries

3.3 What kind of ***fuel*** is used in daily use? *(Please rank from maximum to minimum used.)*

a. Fire	Rank ……..
b. Charcoal	Rank ……..
c. Gas	Rank ……..
d. Electricity	Rank ……..
e. Other (specify ……)	Rank ……..

3.4 What is the usual type of ***cooking oil*** in this household?

1. Lard	3. Bean oil	5. Other (Specify)…….
2. Palm oil	4. Rice-bran oil	

3.5 What is the source of ***drinking water*** in this household? *(can answer more than one source)*

a. Rain water	c. Natural source	e. Underground water
b. Tap water	d. Shallow Well	f. Purchase drinking water

3.6 What is the source of ***water for household use***? *(can answer more than one source)*

a. Rain water	c. Natural source	e. Under ground water
b. Tap water	d. Shallow Well	f. Purchase drinking water

3.7 **From 1st July 2003 till now,** did this household have enough water supply?
1. Yes 2. No.

3.8 Where this household uses toilet?

1. Own toilet
2. Neighbour's toilet
3. Public toilet
4. Other (Specify) ……

3.9 What is the type of toilet? *(can answer more than one item)*

1. Flush toilet (western type)
2. Squat type (wit septic tank)
3. Squat type (without septic tank)
4. Open pit (latrine)
5. Open fill/river/bush
6. Other (Specify) …….

3.9.1 What is the characteristic of toilet?
1. Hang legs toilet 2. Squat toilet 3. Both 1 and 2

3.10 Now, does the household have any debt (100 Baht and over, in any form)
(can answer more than one item)

1. Yes 2. No. (skip to 3.11)

Source of debt	**Value (Baht)**
a. Relative	
b. Neighbor/Friend /Friend in office (workplace)	
c. Employer/House owner/Money lender	
d. Store or shop	
e. Cooperative/ saving group	
f. Village fund / One million baht village fund	
g. Poverty eradication project	
h. One hundred thousand baht fund	
i. Bank of Agriculture and cooperative	
j. Saving Bank	
k. Other Banks	
l. Government organization (i.e. pawnshop, cooperative in organization)	
m. Financial institution (i.e. private pawnshop, financial firm)	
n. Other (Specify)……..	

3.11 Does your family ***own*** any of the following items? If so, how many of each? *(Please read all items to respondents)*

Item	Number (If none fill -)
a. Colour T.V.	
b. VDO/VCD/DVD/Karaoke Player	
c. Sattellite disk	
d. Audio Equipment Stereo	
e. Mobile phone	
f. Telephone	
g. Computer	
h. Pump Water machine/Electricity machine/Springer	
i. Air conditioner	
j. Sewing machine	
k. Washing machine	
l. Microwave	
m. Refrigerator	
n. Boat (use motor)	
o. Bicycle	
p. Motorcycle	
q. Tuk tuk	
r. Local truck (use only in agriculture sector)	
s. Car	
t. Pick up/Van	
u. Bus/ coach	
w. Tractor/Harvest Tractor/Trashing machine/Ploughing machine	

Part 4: Environment

4.1 **From 1st July 2003 till now,** did this household have any of the following problems?

(Please read all items to respondent)

Problem	**Have problem?** 1. Yes 2. No.	**Degree of severity** 1. Severe 2. Moderate 3. Mild
1. Noise		
2. Smoke		
3. Smell		
4. Dust		
5. Water pollution		
6. Garbage/Waste products		
7. Mosquito		
8. Insect (Specify)……		

Part 5: Government's policy

5.1 Does this village have the 1 million baht village fund project?

1. Yes 2. No. (Stop interview) 3. Do not know (Stop interview)

5.1.1 Has any member in your household been involved in this project?

1. Yes 2. No. 3. Not Sure

5.1.2 (If yes) What is the type of participation? Please read all items to respondent.

(Respondent can answer more than one item)

a. Committee
b. Member
c. Stock owner
d. Having savings
e. Borrowed money from this fund
f. Other (Specify) …….

5.1.3 When did you borrow money?

1. Before 1 July 2003
2. After 1 July 2003 (Specify amount of borrowed money) ……baht

At this moment, are you still indebted?

1. Yes, ……..bath 2. No.

Interviewer's Opinion

♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠

Interviewer: After ending this interview, please answer these questions frankly.

1. How was the place of interview like?
   1. Free from disturbances.
   2. There was disturbance, but it did not affect the interview.
   3. There was disturbance and it affected the interview.
   4. There were a lot of disturbances and the interview had to be stopped often /it spoiled the atmosphere.

2. Was there anyone else present during the interview?
   1. Yes, all the time.
   2. Yes, sometimes.
   3. No. (go to Q.5)

3. If yes, who was present? (Can answer more than one persons)
   1. Other family members……..persons
   2. Friend ……..persons
   3. Neighbor ……..persons
   4. Others (specify) ……..persons

4. Did such person answer or give opinions on behalf of the respondent?
   1. Yes, a lot.
   2. Yes, sometimes.
   3. Yes, a little.
   4. No.

5. To what extent the respondent was cooperative during the interview ?
   1. Very good
   2. Good
   3. Average
   4. Little

6. How did the respondent behave during the interview?
   1. Enjoyed answering
   2. Indifferent
   3. Reluctant to answer some questions. (Specify part/number) ……
   4. Showed dissatisfaction with some questions. (Specify part/number) ……

7. In your opinion, as a whole, what is the quality of the data obtained from this interview?
   1. Very good
   2. Good
   3. Satisfactory
   4. Not good, because ……

Kanchanaburi Project

Round 5 (Year 2004)

Institute for Population and Social Research, Mahidol University

Individual Questionnaire
For Respondents aged 15 and over

Household ID
District ___ ___
Sub-district ___ ___
Village ___ ___
Household No. ___ ___ ___
Individual No. ___ ___

Name of respondent……...…….
Name of head of household……..……..
In case respondent can not provide all information ask from person close to them, and then…...…

1. Identify his/her relationship with the eligible respondent…….
2. Reason that the respondents cannot provide all information……..…….…….

House No……Village's No……..……..Village name…….……..
Sub-district……..……..District…….…….……..Kanchanaburi Province
Area 1. Urban 2. Rural

Attempt interviewing no. 1 2 3 4 5 6 7 8 9 10
Date of final interview…...…month…..…..Start…..……End…..……Total time…… minutes
Result of interview 1. Complete 2. Incomplete 3. Can not interview
Specify the reason for the incompletion……..……

Name of Interviewer …….……...…...…….
Name of Field Supervisor ……...……..…….……D/M/Y……..……
Name of Editor…….…… D/M/Y ……..……..
Name of Coder…….…….……..D/M/Y…….

Consent form

To……

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Yours sincerely,

(Assc.Prof. Dr. Bencha Yoddumnern-Attig)
Director of Institute for Population and Social Research,
Mahidol University at Salaya,
Putthamonthon, Nakhonpathom
Tel. 0-2441-9520

I clearly understand the interview purpose reading by myself or by interviewer and give my signature or interviewer's signature for confirmation.

Name……	Name……
Interviewer (Sign for interviewee)	Interviewee
Date……month…….....2004	Date……month…….....2004

Part 1: Personal Data

1.1 What is your birthday?

Day…….Month……Year……...

1.2 How old you are?

Age in years……...Years

1.3 Weight……..Kg.

1.4 Height……...cm.

1.5 Sex of respondent

1. Male 2. Female

1.6 What is your nationality?

1. Thai 4. Karen 7. Cambodian 10. Other(Specify)……...
2. Burmese 5. Chan 8. Vietnamese
3. Mon 6. Lao 9. Chinese

1.7 What is your religion?

1. Buddhist 3. Islam 5. Other (Specify)…….……..…
2. Christian 4. Hindu 6. No religion

1.8 What is your marital status?

1. Single
2. Married → 1.8.1 First marriage (specify) M/Y……..….or age…....years
1.8.2 In last marriage, did you register?
1. Yes 2. No.
3. Divorced
4. Separated
5. Widowed

Ask only person aged 15-49

1.8.3 Do you plan to marry?

1. Yes, at age……Years
2. No…….
3. Not sure…….....
4. Not comfortable to answer

1.9 Are you studying?

1. Yes,……..
2. No, I completed level…….in years……or at age…….

1.10 Are you working?

1. Working 3. Student/vocational student 5. Do not work
2. Looking for a job 4. Housewife 6. Working and studying

1.10.1 What type of work do you do?
Main occupation……..Minor occupation…….……..
1.10.2 How much do you earn (income)? (Include income from all work)
1. Annual income……..……Baht
2. Do not have income because……..……...

(Record in 1.10.3 when cannot separate your income from the household income)

1.10.3 Your annual income included in household income…….Baht

1.10.4 Reason for not working (Please specify)……...……

1.11 Do you have a mobile phone? 1. Yes 2. No.

1. Own mobile phone. Expenditure per month……...……..bath
2. Use mobile phone with others. Expenditure per month……...……..bath

1.12 Do you use internet? 1. Yes 2. No 3. Do not know

Specify a place you use internet *(can specify more than 1 item)*
a. at home c. at school e. Other (Specify)……..……
b. at internet café d. at work place

Part 2: Migration

2.1 Where is your birthplace?

1. In this village 2. In this sub-district 3. Other (Please specify District….Province….Country…….)

2.2 At the time when you were born, was your birthplace located in?

1. Municipality 2. Sanitary district 3. Rural area 4. Other countries

2.3 **From 1st July 2003 till now,** did you ever **move to stay somewhere else for one month or more?**
(If no, interviewer has to ask the place of residence of interviewee in each month since July 2003 till now)

Recording place and date for each change

Have you ever stayed elsewhere during July 2004 till now? (record place of residence where interviewee stays one month and more)

2.3.1 Month	2.3.2 1. Village (Specify house no.)…… 2. Municipality (Specify)……..… 3. Bangkok 4. Other village (Specify)…..…… 5. This studied village 8. Abroad	2.3.3 Sub-district	2.3.4 District	2.3.5 Province	2.3.6 Country
July 2003					
August 2003					
September 2003					
October 2003					
November 2003					
December 2003					
January 2004					
February 2004					
March 2004					
April 2004					
May 2004					
June 2004					
July 2004					
August 2004					

Code for 2.3.7 Person stayed with :

1. Alone	5. Father/mother in law	9. Sister/brother	13. Great-grand children	17. Lodger
2. Spouse	6. Son/daughter	10. Son-in-law	14. Grandmother/grandfather	18. Employee
3. Father	7. Adapted child	11. Daughter-in-law	15. Relative	19. Other (Specify)……..
4. Mother	8. Children of the child	12. Niece/nephew	16. Friend	

2.3.7 Person(s) you stayed with (can be more than one person) (See codes)	2.3.8 Reason for moving out there (Only main reason) (See codes)	2.3.9 What was your major activity? (Record job characteristics) Unemployed (Go to 2.3.11)	2.3.10 Money/item brought back or sent back (record if the value is more than 100 baht)	2.3.11 Reason for moving in here (Only main reason) (See codes)

Code for 2.3.8 Reason for moving there and 2.3.11 Reason for moving in here :

1. Looking for a job	9. Extend branch	17. join spouse	25. Return home
2. Seasonal work	10. Ordained	18. Join parents	26. Economic problem
3. Work	11. Study	19. Delivery	27. More civilization
4. Finished work/contract	12. Receive medical treatment	20. Child care/elderly care	28. Hometown
5. Want to change a job	13. Visit friend	21. Do housework	29. Leave the monkhood/ nunhood
6. Military service	14. Visit relative	22. Individual/Family problem	
7. End of military services	15. Vacation/make merit	23. Set up new family	30. Other (Specify)…..…
8. forced move	16. In prison	24. Stay with parents home	

Part 3: Fertility

Interviewer : (Q.31-3.7) The following are questions to ask only married women aged 15-50

3.1 Have you ever been pregnant?

1. Yes ↓ 2. No. (Skip to Q 3.7) 3. Currently pregnant ↓

No. of pregnancies……..…..
No. of children ever born…….……
No. of abortions/other……..
3.1.1 Have you ever been pregnant with twins? 1. Yes 2. No

3.2 At this moment, how many living children do you have? (include children who stay with you and stay elsewhere)

Total number……..person Male……person Female……person

3.3 How many of your children ever born have died? (specify No. of males, No. of females)

Total number……..person Male……person Female……person

Interviewer: Please record the total number of children in 3.2 and 3.3 in the box.
Total number……..(person)
Male……(person)
Female……(person)
(Please check the number of pregnancies and the total number of children ever born. If not consistent, please ask questions again.)

Interviewer: The questions no. 3.4-3.6 are questions to ask women who were ever been pregnant between age 15-50

3.4 Did you plan for your last pregnancy?

1. Yes (skip to 3.7) 2. No.

3.5 When you realized you were pregnant, did you feel happy to continue your pregnancy?

1. Yes 2. No.

3.6 Did you have 9 months gestation age when delivered?

1. Yes 2. No. 3. Currently pregnant……..Month (Skip to Q 3.7)

1. At this moment, age of the living child ……..…….. (Skip to Q 3.7)
2. Ever born child has died at age……
   Reason of death (Specify)……..……..

3.6.1 What is the reason that you deliver before 9 months of pregnancy?

1. Early spontaneous delivery 2. Spontaneous abortion
3. Induced abortion 4. Other (specify) ……..

Interviewer: The questions 3.7 asks only married women aged 15-50

3.7 Have you or your spouse ever used contraceptive method?

1. Yes 2. No. (skip to 3.8)

3.7.1 The first contractive method is ……...
started in month…… year …….…….
reason to use above contraceptive method is

1. Spacing
2. Stop pregnancy
3. Prevent pregnancy
4. Other (specify)……

3.7.2 At this moment, do you use contraceptive methods?

1. Yes 2. No

3.7.3 When did you stop using contraceptive methods? Month …..…Year …..……
3.7.4 Reason for stopping using contraception.

1. Think that they will not have any more children (including naturally sterile or infertile)
2. No sexual contact
3. Want more children
4. Breast feeding
5. Afraid of side effect
6. Faced with side effect
7. Dislike the current method
8. Other (Specify)……..

Interviewer: The questions 3.8-3.12 ask only women aged 15-50

3.8 Pregnancy history and contraceptive use in each month.

Interviewer: For women who do not use contraceptive methods or have never been pregnant, please ask the question "Since January 1, 2003 till now, have you had months without menstruation? If so, fill Am in months when no menstruation occured. If not, ask if there was sexual contact and if not fill in NS.

If married or ever used contraceptive method, please ask for pregnancy and contraceptive method during January 2003 till now and fill in abbreviation in the table for each month.

Guideline and abbreviations

1. Termination of pregnancy
(Ask for pregnancy and its result during January 2003 till now)
Record the result in terminated pregnancy month as follows.
LB = Live Birth
SB = Still Birth (the gestation age was 7 months and over)
A = Spontaneous Abortion (the gestation age was less than 7 months)

2. Time of pregnancy
(Ask for gestation age when delivered and focus on the 1st month of pregnancy and replete with this question "Did you get pregnancy in (month)……?
Fill G (Gestation) in the month duration the gestation time (If had pregnancy before January 2003 please record the 1st month of pregnancy in question 3.9
Except the 1st month of fertilizable month fill G and follow by ( )

3. Contraceptive method in fertile month
(Check for the first month of pregnancy G ( ) and ask with this question "did you use the contraceptive method in the first month of pregnancy?"
If "yes", please fill an abbreviation of contraceptive method in the parentheses.
If "no", please ask for the reason for non-use contraceptive method and fill an abbreviation in the parentheses.

4. Postpartum amenorrhea (Amenorrhea: Am)
(After termination of pregnancy (LB or SB or A), please ask with this question "how many months after birth did you not have your period?)
Fill Am ( ) in the month of amenorrhea and then erase 1 month
If has postpartum amenorrhea only one month, do not fill Am ( )

5. Contraceptive use
Please start from the last month which is blank or has Am ( ) and ask that "did you use the contraceptive method in this month?" If "yes", please ask how long of using this method. Please make sure that this method was used continuously more than 2 months. If she did not use contraceptive continuously for 2 months.
You can not fill in table. Please ask for the blank month or Am ( ).
If changed method of discontinued between months, please fill the abbreviation of method used at the end of the month.

Abbreviation for contraceptive method

(1)	L	= Ligation	(9)	R	= Rhythm
(2)	V	= Vasectomy	(10)	VM	= Vaginal Methods
(3)	Imp	= Subdermal Implant	(11)	IA	= Induced Abortion
(4)	I	= Injection	(12)	Ab	= Abstinence
(5)	IUD	= Intra Uterine Device	(13)	R+W	= Rhythm & Withdrawal
(6)	P	= Pill	(14)	R+C	= Rhythm & Condom
(7)	C	= Condom	(15)	C+W	= Condom & Withdrawal
(8)	W	= Withdrawal			

O = Other (Please note below the table)

} Make sure that both are used at the same

Record details of pregnancy history and contraceptive usage

……

……

……

……

6. Reason for not using contraceptive method

Please asking for the reason in each blank month, if it has more than one,

please ask for the main reason.

For the month with Am ( ), Please fill – in the parentheses Am (-)

Abbreviation for do not use the contraceptive method

(70) Am (-) = Amenorrhea and do not use contraceptive method

(81) U = Unable (Including natural sterile and unexpected do have children)

(82) NS = No sexual contact

(83) D = Desire pregnancy

(84) B = Breastfeeding

(85) SE = Concern on side effect

(86) DM = Dislike method

X = Other reasons (Please note below the table)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2003												
2004												

X : Other reasons (Specify)……

Interviewer: Check the above table, and make sure that all cells has been filled. Then check whether is there any use of contraceptive methods or any pregnancy. If

3.9 If respondent used contraceptive method or was pregnant in January 2003, please ask the question that
What contraceptive method that you continually used…..……/
OR when did you get pregnant? Record the month……year..…….

3.10 Check from the above table about the contraceptive method usage and ask the respondent "what is your current method?" (Specify)……

3.11 If respondent currently use a non-scientific contraceptive method, ask these questions.

3.11.1 Where do you usually get contraceptives? *(can specify more than 1 item)*
- a. Public hospital in Bangkok
- b. Public hospital
- c. Private hospital
- d. Health care center
- e. Drug store
- f. Retailer
- g. Herb specialist
- h. Convenience store with drug-provided corner
- i. Other (Specify) ……

3.11.2 Where did you get contraceptives the last time?
- a. Public hospital in Bangkok
- b. Public hospital
- c. Private hospital
- d. Health care center
- e. Drug store
- f. Retailer
- g. Herb specialist
- h. Convenience store with drug-provided corner
- i. Other (Specify) ……

3.11.3 How much did you pay for the last contraceptive service (exclude traveling cost and others)?
……..……. baht.

3.11.4 Are you satisfied with the latest service?
1. Yes 2. No Because ……..

3.12 If respondent ever used a contraceptive method, but have stopping using it, please ask the following questions:

3.12.1 What is your last contraceptive method used? (Specify) ……..……
(interviewer: the answer should consistent with answer in the above table)

3.12.2 last time, where did you get this contraceptive?
- a. Public hospital in Bangkok
- b. Public hospital
- c. Private hospital
- d. Health care center
- e. Drug store
- f. Retailer
- g. Herb specialist
- h. Convenience store with drug-provided corner
- i. Other (Specify) ……

3.12.3 How much did you pay for the last contraceptive service (exclude traveling cost and others)?
……..……. baht.

3.12.4 Were you satisfied with the service?
1. Yes 2. No Because ……..

Part 4: Health Status

4.1 Do you have any **chronic illness** (since 3 months or more) (i.e. diabetes, heart disease, allergies, back pain, dizziness, feel faint, weak, etc.)

1. Yes ↓ 2. No.

4.1.1 Name of disease or chronic illness (if do not know the name, give details of illness)	4.1.2 Who diagnosed your illness? (See the code)	4.1.3 How long have you had this illness?	4.1.4 What are your treatment methods? (from starting method to a current one) (See the codes)	4.1.5 Why do you choose this method for treatment? (See the code)
1. ……...	……	Year……	1. ……	1. ……...
……...…	……	Month……	2. ……	2. ……...……
……...…	……		3. ……	3. ……...…
……...…	……		4. ……	4. …...……
2. ……...	……	Year……	1. ……	1. ……...
……...…	……	Month……	2. ……	2. ……...……
……...…	……		3. ……	3. ……...…
……...…	……		4. ……	4. …...……
3. ……...	……	Year……	1. ……	1. ……...
……...…	……	Month……	2. ……	2. ……...……
……...…	……		3. ……	3. ……...…
……...…	……		4. ……	4. …...……

Code for 4.1.2 Who diagnoses your illness? :

1. Physician
2. Health personnel at health center
3. Health personnel elsewhere
4. Traditional expert
5. Him/herself
6. No diagnosis
7. Other (Specify) ……

Code for 4.1.4 What are your treatment methods? (If answer 1, 2 and 3 please specify the hospital's name) :

0. No treatment
1. Public hospital in Bangkok
2. Public hospital
3. Private hospital/clinic
4. Health center
5. Purchase drug from drugstore
6. Purchase drug from retailer/convenience store with drug corner
7. Herbalist/traditional/witch/priest/black magic
8. Self-care i.e. exercise, food concerned
9. Other (Specify) ……..……

Code for 4.1.5 Why do you choose this method for treatment? (Answer only one) :

1. Mild sickness
2. Low price
3. Comfortable traveling
4. Severe illness
5. Illness can relief itself without any treatment
6. Persistent illness
7. "Can not cure" illness
8. No money
9. Got suggestion from other experienced sickness people
10. Keep the sickness as a secret
11. The illness does not cause by disease
12. Having health welfare
13. Effective method/regular treatment
14. Followed suggestions/faith treatment
15. Free
17. Physician provides a suitable treatment
18. Having health care (gold) card
19. Good service
20. Believe in physician or expert
21. Located near home
22. Other (specify) ……...…

4.2 **In the last month**, did you get sick or have any accident? (Include only sickness or accident which directly affects undertaking regular activities i.e. studying, homework, work, or any routine activity)

1. Yes ↓ 2. No

4.2.1 Illness and symptom in the last month (specify symptom in detail)	4.2.2 Who diagnosed your illness? (See the code)	4.2.3 What are your treatment methods? (from starting method to a current one) (See the code)	4.2.4 Why do you choose this method for treatment? (See the code)
1. …….. ……..…… ……..…… ……..……	…… …… …… ……	1. …… 2. …… 3. …… 4. ……	1. ……... 2. ……...…… 3. ……..… 4. …...……
2. …….. ……..…… ……..…… ……..……	…… …… …… ……	1. …… 2. …… 3. …… 4. ……	1. ……... 2. ……...…… 3. ……..… 4. …...……
3. …….. ……..…… ……..…… ……..……	…… …… …… ……	1. …… 2. …… 3. …… 4. ……	1. ……... 2. ……...…… 3. ……..… 4. …...……

Code for 4.2.2 Who diagnoses your illness? :

1. Physician
2. Health personnel at health center
3. Health personnel elsewhere
4. Traditional expert
5. Him/herself
6. No diagnosis
7. Other (Specify) ……

Code for 4.2.3 What are your treatment methods? (If answer 1, 2 and 3 please specify the hospital's name) :

1. No treatment
1. Public hospital in Bangkok
2. Public hospital
3. Private hospital/clinic
4. Health center
5. Purchase drug from drugstore
6. Purchase drug from retailer/convenience store with drug corner
7. Herbalist/traditional/witch/priest/black magic
8. Self-care i.e. exercise, food concerned
9. Other (Specify) ……..……

Code for 4.2.4 Why do you choose this method for treatment? (Answer only one) :

1. Mild sickness
2. Low price
3. Comfortable traveling
4. Severe illness
5. Illness can relief itself without any treatment
6. Persistent illness
7. "Can not cure" illness
8. No money
9. Got suggestion from other experienced sickness people
10. Keep the sickness as a secret
11. The illness does not cause by disease
12. Having health welfare
13. Effective method/regular treatment
14. Followed suggestions/faith treatment
15. Free
17. Physician provides a suitable treatment
18. Having health care (gold) card
19. Good service
20. Believe in physician or expert
21. Located near home
22. Other (specify) ……...…

4.3 From July, 1 2003 till now, did you engage in the following behaviors?
(Interviewer: read all items to the respondent)

Behavior	Do you usually engage in this behaviour? 1. Yes 2. No
a. Eating spicy food	
b. Eating salty food	
c. Eating sour food	
d. Eating sweets	
e. Eating pickles	
f. Eating instant food (i.e. instant noodles)	
g. Eating high fat food	
h. Eating raw or half-fried food	
i. Eating fast food (i.e. sandwich, pizza, hamburger, etc.)	
j. Eating snacks	
k. Eating supplementary food (i.e. chicken soup, bird nest soup, herb juice, etc.)	
l. Taking vitamins	
m. Sleeping in mosquito net or mosquito screen	

4.4 How many days in a week you usually eat fresh vegetables?

1. 1 day
2. 2 days
3. 3 days
4. 4 days
5. 5 days
6. 6 days
7. 7 days
8. Sometimes

4.5 How many days in a week you usually eat fresh fruits?

1. 1 day
2. 2 days
3. 3 days
4. 4 days
5. 5 days
6. 6 days
7. 7 days
8. Sometimes

4.6 What type of water do you usually drink?
(Interviewer: do not read all items to respondent, can answer more than 1 item)

Type	Do you drink regularly? 1. Yes 2. No	How do you treat your drinking water? 1. Boil 2. Filter 3. do nothing
a. Rain water		
b. Tap water		
c. Well water		
d. Under ground water		
f. Soft drink		
g. Bottle water/Purify water		
h. Other (Specify) …….....		

4.7 At this moment, do you consume the following items? And how often do you consume?

(Please read all items to respondent)

Type	**4.7.1 Do you consume it?** 1. Yes (continue to 4.7.2 and 4.7.3) 2. No (continue to 4.7.4– 4.7.7)	**4.7.2 How often?** (See codes)	**4.7.3 At what age you started to consume?** (Specify…. years)	**4.7.4 Have you ever consumed it before?** 1. Yes (continue to 4.7.5 and 4.7.7) 2. No (continue to 4.7.7)	**4.7.5 At what age you started to consume?** (Specify…. years)	**4.7.6 How long have you stopped consuming?** (Specify….. years)	**4.7.7 What is the main reason behind not consuming anymore?** (Specify……)
a. Cigarette							
b. Beer							
c. Liquor							
d. Vine							
e. Traditional liquor							
f. Traditional pickle drug							
g. Stimulant drink							
h. Drug for relief pain(Narcotic drug)							
i. Canned Coffee							

Codes for 4.7.2 How often? :

1. Once a week
2. Twice a week
3. Three times a week
4. Four times a week
5. Five times a week
6. Six times a week
7. Everyday
8. Once a month
9. Twice or three times a week
10. Seldom (Festival or Special occasion)

4.8 Except for daily activities such as work, have you exercised **regularly**? (Please do not read all items to respondent)

1. Yes ↓ 2. No

Type of exercise	4.8.1 Do you usually exercise? 1. Yes 2. No.	4.8.2 When you started to exercise? Month	Year	4.8.3 How often? (See code)	4.8.4 How long? (minutes)	4.8.5 Where? (See code)
a. Jogging						
b. Fast walking						
c. Aerobic						
d. Traditional Chinese exercise						
e. Play sports						
f. Exercise						
g. Other (Specify) ……..						

Code for 4.6.3 How often per week? :

1. Once a week
2. Twice a week
3. Three times a week
4. Four time a week
5. Five times a week
6. Six times a week
7. Everyday
8. Uncertain

Code for 4.6.5 Where? :

1. Inside/or around a house
2. Park
3. The village's meeting hall
4. Public area in the village
5. Sport play ground in the village
6. Private sport club
7. Government sport center
8. Other (Specify) ……

4.9 **From 1st July 2003 till now,** have you ever used the 30 baht scheme card (gold card)?

1. Yes (skip to 4.10-4.15)
2. No (Answer only one reason) (Skip to part 5)
3. Have no gold card

1. Never get sick
2. Not convenient
3. Have a familiar health center/clinic
4. Not sure about the quality of drug and service
5. Concern on time consuming
6. Do not have enough money for traveling or for other fees
7. Move away from the service provision area
8. Can use gold card in specific service area
9. Emergency accident (have to use nearest hospital/health center)
10. Use other card (specify) ……
11. Other (specify) ……..

4.10 How many times you used the gold card (Specify) ……. Times

4.11 Where did you use the gold card last time?

1. Health care center
2. District hospital
3. Provincial hospital
4. Private hospital
5. Other (specify) ……..

4.12 What were the illness/ symptoms when you take treatment with the gold card, last time?

1. ……..
2. ……..
3. ……..

4.13 Were you satisfied with the service, last time?

0. Did not receive any services
1. High satisfaction
2. Medium satisfaction
3. Low satisfaction
4. Not satisfaction because ……..

4.14 Were you satisfied with the service of other health officers, last time?

0. Did not receive any services
1. High satisfaction
2. Medium satisfaction
3. Low satisfaction
4. Not satisfaction because ……

4.15 Were you satisfied with the quality of the drugs, last time (include injection)?

0. Did not receive any services
1. High satisfaction
2. Medium satisfaction
3. Low satisfaction
4. Not satisfaction because ……

Part 5: Community Development

Interviewer: The following are questions to ask every one aged 15-59

5.1 In your point of view, does your community have urgent needs?

1. Yes 2. No 3. Don't know

↓

5.2 What is the most urgent need of your community? (do not read all item to respondent and can answer only 1 item)

1. Road
2. Natural water storage
3. Land for cultivation
4. Minor job
5. Drug problem
6. Trap system
7. Electricity system
8. Telephone system
9. Drainage system
10. Waste
11. Mosquito annoyance
12. No security for life and property
13. Alien labor
14. Price of agricultural product
15. Water for agriculture/irrigation
16. No security for life and property

Part 6: Economic and social security of aging (ask persons who are aged 50-64)

6.1 What is your expected source of income when you are aging? (Please read all items to the respondent)

Income Source	1. Yes 2. No.
a. Job	
b. Property (rental income, income from selling)	
c. Deposit/saving money (include interest)	
d. Money/property or goods from son and daughter	
e. Retired fund/a pension	
f. Social security fund/aging security fund	
g. A cooperation/Sharing profit	
h. Life insurance/health insurance	
i. Money in non-system (i.e. from personal lender)	

6.2 When you become elderly, who do you intend to stay with?

1. Alone
2. Spouse
3. Father
4. Mother
5. Father/mother in law
6. Son/daughter
7. Adapted son/daughter
8. Grand child
9. Sibling
10. Son in law
11. Daughter in law
12. Nephew/niece
13. Great grand child
14. Grandfather/grandmother
15. Relative
16. Friend
17. Public welfare center
18. Nursery
19. Temple
20. Other (specify) ……

Part 7: Condom

Interviewer: Ask only men who are aged 15-59

7.1 Have you ever used condom?

1. Yes 2. No (Stop interview) 3. Don't know what condom (Stop interview)

↓

1.1 How old were you when you used condom for the first time? (Specify) ……....(year)

1.2 Whom did you use condom with? (Specify the relationship) ……..……

1.3 What was the main reason behind using condom for the first time? ……..……

……..……..

7.2 **From 1st July 2003 till now,** when was the last time you used condom?

1. Used on date ……..…….. Month ……..……. Year …….
2. Did not use (Stop interview)

7.3 **From 1st July 2003 till now,** where did you buy the condom when you last used?

1. Public hospital
2. Private hospital/clinic
3. Health care center
4. Drug store
5. Convenience store
6. 24 hours opened store
7. Drug retailer
8. Coined machine
9. Other (Specify) ……..

7.4 **From 1st July 2003 till now,** how much did you pay for a piece of condom when you last used?

……..……. Baht/piece

7.5 **From 1st July 2003 till now,** whom did you use condom (for HIV protection, pregnancy protection/sexual diseases) with? What was the reason for using condom?

7.5.1 Whom did you use condom with? (Can answer more than 1 item)	7.5.2 Main reason to use condom …….....
1. Spouse	
2. With whom you regularly have intercourse (Specify the relationship) …….	
3. With whom you have intercourse sometimes (Specify the relationship) ……..…….....	

7.6 **From 1st July 2003 till now,** did you use condom every time you have intercourse?

1. Yes 2. No, use for sometime or …….. per cent of all

7.7 **From 1st July 2003 till now,** have you ever accidentally used condom with a hole?

1. Yes 2. No

Interviewer's Opinion

♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠

Interviewer: After ending this interview, please answer these questions frankly.

1. How was the place of interview like?
   1. Free from disturbances.
   2. There was disturbance, but it did not affect the interview.
   3. There was disturbance and it affected the interview.
   4. There were a lot of disturbances and the interview had to be stopped often /it spoiled the atmosphere.

2. Was there anyone else present during the interview?
   1. Yes, all the time.
   2. Yes, sometimes.
   3. No. (go to Q.5)

3. If yes, who was present? (Can answer more than one persons)
   1. Other family members……..persons
   2. Friend ……..persons
   3. Neighbor ……..persons
   4. Others (specify) ……..persons

4. Did such person answer or give opinions on behalf of the respondent?
   1. Yes, a lot.
   2. Yes, sometimes.
   3. Yes, a little.
   4. No.

5. To what extent the respondent was cooperative during the interview ?
   1. Very good
   2. Good
   3. Average
   4. Little

6. How did the respondent behave during the interview?
   1. Enjoyed answering
   4. Indifferent
   5. Reluctant to answer some questions. (Specify part/number) ……
   4. Showed dissatisfaction with some questions. (Specify part/number) ……

7. In your opinion, as a whole, what is the quality of the data obtained from this interview?
   1. Very good
   2. Good
   3. Satisfactory
   4. Not good, because ……

Appendix 3

Contributors

Contributors

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