Report of Round 3 Census (2002)

Kanchanaburi Project

Institute for Population and Social Research

Mahidol University

Supported by The Wellcome Trust

February 2004

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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 3 Census (2002) is one of the studies under the Kanchanaburi project. The report analyses data mainly on demographic, economic, social and health status of population in the field site. This includes an analysis of changes that occurred over the first three 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 would 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 Bencha Yoddumnern-Attig

Director

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

Research Team

February, 2004

ABSTRACT

Report of Baseline Survey (2002)
Institute for Population and Social Research, Mahidol University

The Kanchanaburi Project is a demographic surveillance system, which records the changes of population status (demographic, social, economic and health) in the study areas of 100 villages/census blocks. This third round survey was conducted between 1st July to 18th August 2002.

The enumeration listed 12,680 households with a population of 45,053 (21,673 males and 23,370 females). Comparing to the second round, the number of households increased by 0.2 percent, but the population decreased by 2 percent. Majority of population was working in agriculture sector. There was a significant proportion of population that never been in school, about 19 percent of males and 23 percent of females.

About 20 percent of population were migrants. Majority of migrants was between 15-29 years old. Most of them had migrated within Kanchanaburi province. This pattern was not different from the two previous rounds.

Fertility and family planning patterns did not change much also. The total fertility rate remained at 2.0 and women in the highland stratum still had the highest fertility. Female sterilisation was the most popular contraceptive method, followed by pills and injection.

Mortality rate was 6 persons per thousand. Non-communicable disease was the highest reported cause of death.

Consumption of addictive substances, which were cigarettes beer, liquor and tonic drink, was low. There were not more than 11 percent each with the exception of cigarettes, where 48 percent was reported as routinely smoking in the highland stratum.

It was found that approximately 75 percent of population received the “30 Baht Health Care Card Scheme”. More than 80 percent of households knew about the “One Village - One Million Baht Project”. About half of households that knew about this project had participated in the project.

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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 villagers 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 large 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 also close to Bangkok and is the location of many industries. 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 field site communities was structured to reflect this diversity in social, economic and ecological conditions found in the province.

The Kanchanaburi project is based on the principle of demographic surveillance. An annual census follows the changes of population in the field site. The field site is comprised of 100 villages/census blocks, and is divided into five strata, urban/semi-urban, rice, plantation, uplands, and mix economy stratum. Each stratum consists of 20 villages or census blocks.

A central component of the project is the annual enumeration of all households in the field site communities. The first enumeration, undertaken in 2000, is referred to as the baseline census and the basic results of this enumeration have been published. The annual enumeration of households is conducted during the middle of each year, starting from July 1st. This report describes the population of the field site as enumerated in the 2002 round of data collection.

The enumeration consists of two main components. In the first component, data on fertility, mortality, and migration is collected. This data is collected annually. The second component includes questions related to social, economic, health and environmental issues. The issues included in the enumeration in this component may change each year in order to maintain the census instrument at an acceptable size and to respond to the changing social and policy context.

The 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 presents data 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, the health status of the population is discussed in chapter eight, chapter nine explores mortality, and chapter ten describes land use and agricultural products. Ageing and government policies are discussed in chapter 11 and chapter 12 respectively.

2. Design and Methodology

Sirinan Kittisuksathit

2.1 Concepts and definitions

This project has as its main aim the establishment of a field research and training centre dedicated to the monitoring of population change and the evaluation of the effects of intervention-based research. 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 3 (2002) census, interviewers matched households and each individual to households in Round 3 (2002) by using the household listing from Round 2 (2001). 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 2 (2001) listing and then added to the Round 3 (2002) listing the new members who had moved into the household after July 1st 2002. All household members are named

in the household listing included any member who migrated or who had died since the Round 1 (2000) and Round 2 (2001) censuses.

2.1.1 Definition of household

The Round 3 (2002) census employed the same definition between "new" and "old" households and individual as in Round 1 (2000) and Round 2 (2001). The definitions of households age as follows:

An old household refers to a household that:

1. Was recorded in Round 1 (2000) and in Round 2 (2001) and remains the same household in Round 3 (2002);

2. Was recorded in Round 1 (2000) and Round 2 (2001) 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 was established after Round 1 (2000) or household that was not interviewed in Round 1 (2000) because of the following reasons:

1. A household which is newly settled;

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

3. A old household (the same number) from which all persons had moved out and all new members have moved in (e.g. new rental household)

A household where all members had moved out is a household that was interviewed in Round 1 (2000) and Round 2 (2001) but in Round 3 (2002) all members had moved to live outside the village or had migrated to work outside the village during the third round census. 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.

2.2 Study area and village selection

The villages for the Kanchanaburi project was selected using a stratified systematic design. The primary selection units for rural areas were villages and for urban areas were census blocks.

The data for selection were collected from the Kanchanaburi provincial offices of various ministries concerning the amount of agricultural land in each village, the amount of wet rice crops grown, the amount of plantation crops grown (cassava and sugar cane), the number of adult workers employed in industry, and the total population.

The study area in Round 3 (2002) included 101 villages/census blocks because one village of Round 1 (2000) and Round 2 (2001) has split into 2 villages. This village is Nong Po village (Muu 8) located in Panon Tuan District. The study area was divided into five strata, which were categorised according to the main occupation of the population and land use patterns. These strata 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, Thongpapham and Sakhaburi districts.

The Mixed Economy strata contains villages that could not be classified into the other categories as mentioned above.

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 six parts: general village data, agriculture, occupation, infrastructure and transportation, health and community development.

The Household questionnaire consisted of five sections: basic data on the household's 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 five sections: personal data, migration, fertility, health, and aging.

(All questionnaires are shown in appendix)

A module focusing on the issue of mother and child health was added to the Round 3 (2002) census. This module was used only for pregnant women, mothers who have children under 2 years old and mothers who experienced in abortion or **still birth** during the Round 2 (2001) and Round 3 (2002) censuses. The questionnaire consisted of four sections: live birth, pregnancy, abortion and stillbirth.

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 : 2nd – 3rd March, 2002 in one village,
- 2nd Pretest : 6th – 7th April, 2002 in one village, and
- 3rd Pretest : 23rd – 24th May, 2002 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, 2002 and ended on August 18th, 2002 (49 days in total).

2.6 Data collection team

For Round 3 (2002), The Institute for Population and Social Research collaborated with a local education Institute "The Research Center - Kanchanaburi Rajabhat Institute" in the selection of supervisors and interviewers. Priority in the selection of interviewers was given to local residents of Kanchanaburi.

A Local Interviewer Model was experimented with in Round 3 (2002) in order to examine whether this method of data collection provided better quality data. The selection of local interviewers was as follows;

Step 1: Selection of 12 villages where use of a locally recruited interviewer was feasible.

Step 2: Simple random sample of 3 of the 12 villages in order to recruit the local interviewer. The 3 villages were;

1) Wangkrajae village Muu 4, Wangkrajae subdistrict, Saiyoke district,

2) Nongpo village Muu 8, Dontapet subdistrict, Panomtuan district, and

3) Takradarn village Muu 1, Takradarn subdistrict, Srisawad district.

Step 3: The selection of local interviewers was undertaken as follows;

a) Listing all persons (who met the qualification of interviewer selection) from the 3 villages. Persons who graduated from vocational and high school were included in this listing,

b) Contacting the listed persons for interviews, and

c) Interviewing and recruiting the local interviewers.

There were 73 people in the data collection team, including 10 field supervisors, 60 interviewers and 3 local interviewers. Ten teams were responsible for collecting the data. On average, each team consisted of one field supervisor and six interviewers, with the number depending upon the number of villages and area to be covered. Each local interviewer was responsible for his/her village where he/she resided. Each team arrived in the first village on June 30th, 2002 and began data collection on July 1st, 2002.

The process of training field supervisors was divided into two steps. The first step entailed recruiting and training field supervisors by mapping sample villages and listing households over a two-week period from 20th – 26th May, 2002. In the second step from 17th – 28th June, 2002, the interviewers were trained, and concepts and definitions of each question in the questionnaires were explained. The interviewers learned about interviewing techniques and practiced interviewing.

(See details in appendix)

2.7 Data collection

2.7.1 Updated village mapping

Village mapping in Round 3 (2002) was updated from village maps from Round 2 (2001) 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 in Round 2 (2001) 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 during the Round 3 (2002) census, 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) Arranged for ten teams to collect data in the urban/semi urban area in Thamaka district in the first week of the data collection period,

2) Distributed ten teams to finish the schedule of data collection in all study areas, and

3) Expected any team that finished their schedule of data collection early to re-check and interview the households that remained from the first week of data collection in Tamaka.

2.7.3.2 Data collection

The method of face to face interviews that were used in the first and second rounds were also used in the third round. There were 4 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 or women's group members. A minimum of 3 members from the community were interviewed. They began by introducing the background of the Kanchanaburi project and asking for their consent.

Household questionnaire, Individual questionnaire and MCH questionnaire

Interviewers obtained household data by interviewing household heads, and individual data by interviewing individuals aged 15 and over. Interviewers obtained MCH data by interviewing mothers who had children under 2 years old, pregnant women, and women who experienced an abortion or stillbirth. Interviewers began by providing respondents with background information about the Kanchanaburi project, why their information was important, and asked them for their consent. Field supervisors assisted interviewers in explaining the objectives of the Kanchanaburi project.

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.

2.8 Data quality control

The process of data quality control started during the first week of data collection. The ten data collection teams not only went to gather the data in Tamaka 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;

- Sixty 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. For the 3 local interviewers, he/she carefully checked each questionnaire after interviewing. The local interviewers were directly supervised by the researchers. Researchers also went to visit and supervise the ten data collection teams every week.

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

- Researchers were considered as the local interviewers' supervisors. Supervisors visited and monitored the areas where local interviewers were responsible for data collection.

The field edited questionnaires were sent to the field station at Saiyoke where they were re-edited.

After completion of the fieldwork, 15 persons from the data collection teams were recruited for data processing. This process took 4 months (27th August – 30th December 2002).

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.

Interviewers recorded the reason for non-response and this information was used to analyse the response rate. There were 15,308 eligible households in the sampled communities, and of these 12,680 were interviewed. This results in a response rate of 83 percent. From the households interviewed, there were 31,575 eligible individuals, of whom 28,899 cases were interviewed. Therefore, the response rate for individuals is 92 percent (see Table A2.1 in the Appendix 1).

The time spent for household interviews ranged from 2 minutes to 1 hour and 15 minutes with the amount of time depending upon the difficulty of the interview. The average time spent on a household interview was 15 minutes. Individual

interviews ranged from 1 to 60 minutes. The average time spent on individual interviews was 11 minutes (see Table A2.1 in the Appendix).

Reasons most frequently cited for non-response among individuals were busy working (67 percent) and sick/old/handicapped (23 percent) and refusal to be interviewed (9 percent). For non-response among households in Round 3 (2002), 10 percent was due to a closed or empty house or nobody at home during the time of interview. Sixty six percent resulted from all household members having moved outside the village, 10 percent resulted from the members of household only residing temporarily, 7 percent resulted from busy working, seven percent was due to other reasons, and only 3 percent of non-response among households was because of refusal to be interviewed (see Table A2.2 in the Appendix).

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).

Overall, opinions were similar for both questionnaires. Nearly one-half of interviewers thought that the quality of data was excellent, with more than one-half of them reporting good level quality. Only two percent of interviewers thought the data were of average quality.

About one-half thought that the setting for the interview was private and quiet (50 percent for household interviews and 46 percent of individual interviews). A noisy but private setting was reported for a further 47 percent of household

interviews and 51 percent of individual interviews. Only for 3 percent of interviews with households as well as 3 percent of interviews with individuals did the interviewers report that the setting was not private and that this affected the interview. However, less than 1 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 interview, only about one-half of interviews were completed in the absence of a third party. Thirty six percent of interviews had a third party present all through the interview and 17 percent had a third party present at some stage of the interview. However, that person(s) were mainly other household members (71 percent) and one-third of others present included neighbours and friends. About 38 percent of third parties present at interviews caused no interruption. More than one-quarter of third parties present at interviews were reported to have interrupted at some time during the interviews.

During the individual interviews, whereas 47 percent of interviews were completed in the absence of a third party, 53 percent had a third party present throughout the interview and a small proportion had a third party present at some stage of the interview. During the household interview, about 81 percent were household members, 25 percent were neighbours. About 43 percent of third parties present at interviews caused no interruption and one out of four were reported to have interrupted at some time during the interviews.

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.

Eighty six percent of respondents were reported to have enjoyed the interview. One of ten was reported to be neutral about the interview. Less than one percent was reported to be unhappy about the interview on some questions.

The most sensitive topics in the household questionnaire were related to background data of the household members (8 respondents), household characteristics (3 respondents) and debt (3 respondents). Only seven respondents refused to answer those questions.

In conclusion, it could 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 has been collected every year at the same time as household and individual data is collected. The purpose of collecting village data in Round 3 (2002) is to examine demographic, socio-economic and development changes at the village level. The number of villages has changed over the three rounds. From 86 villages in Round 1 (2000) there were 89 villages in Round 3 (2002). One census block in the urban area (i.e. Ban Wang Thong, Tambon Wai Neow, Amphoe Ta Maha) covers both municipal and rural characteristics, so one part of Ban Wang Thong was categorized as a semi-urban village so that the number of semi-urban villages increased from 6 to 7 villages. Another part of Wang Thong community was categorized as a municipal area so eight urban/semi-urban questionnaires were completed. In the rice strata, the number of rice cultivation villages increased from 20 to 21 because Ban Nong Pho, Tambon Dontapetch, Amphoe Panomtuan was split into 2 villages because the number of households increased.

This chapter presents data on 88 villages, with the data obtained by interviewing at least 3 village key informants (such as village headman, assistant village headman, senior villagers etc.)

The results of village data are presented by 5 strata

1.	Semi-urban strata	7 villages
2.	Rice strata	21 villages
3.	Plantation strata	20 villages
4.	Upland strata	20 villages
5.	Mixed Economy strata	20 villages

3.1 General information

Comparing by strata, the semi-urban areas had more households on average than other strata (i.e. 201 households per village). Fewer households were found in the upland, mixed economy, plantation and rice growing areas respectively (see Table 3.1).

Data on average population per village showed that there were more people per village in the upland villages (1,125 persons). The next most highly populated villages were found in the semi-urban, mixed economy, plantation and rice areas respectively (see Table 3.1)

In comparison with the Round 1 (2000), change in the number of households was not marked. However, village leaders generally indicated that the number of households and population were likely higher. It was noted that the population in upland villages had increased from 556 per village in Round 1 (2000) to 1,125 in Round 3 (2002). This was because of high movement of uplands people.

Table 3.1 Average number of households and population per village by strata

	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Average households	201	100	103	142	132
Average population	958	429	470	1,125	581
Average male population	444	207	232	352	280
Average female population	514	222	238	372	301

In Round 3 (2002), there were questions about the number of industrial establishments in the village where villagers worked. It was found that there were 11 factories in 6 villages of mixed economy areas, 9 factories in 4 semi-urban villages and 1 factory in a plantation village (see Table 3.2).

Overall 32 factories were situated in 20 study villages, i.e. 4 fertilizer and insecticide factories, 3 plastic factories, 3 flour mills and 2 factories each making shoes, garments, animal foods, bamboo shoots, bronze and plywood. In other villages, there was one sugar factory, sewing leather bag, making noodles, ice, cement pillars, cement blocks, toys, silverware and jewelry.

Size of factories varied from 5 of small size (less than 10 workers) to 2 large factories (about 10-100 workers). The biggest factory was a sugar mill with 700 workers. Not only workers from outside the village but also villagers worked in the factories nearby.

Table 3.2 Number of villages where factories are located by strata

Number of factory	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
1 factory	2	1	1	4	3
2 factories	2	3	-	-	2
3 factories	1	-	-	-	-
4 factories	-	-	-	-	1
Total (village)	**5**	**4**	**1**	**4**	**6**

3.2 Agriculture

Both natural sources and man-made sources of water were used for agriculture. However, rain was always the main source in every surveyed area except for half of the mixed economy villages and 3 of 8 villages in semi-urban areas where people used rain water for agricultural purposes. The next most commonly used source of water was irrigated canals, found in most strata but most common in rice growing areas (9 villages), mixed economy areas (7 villages) and semi-urban areas (6 villages) but were not found in plantation and upland villages. Underground water was also found in every strata but was most commonly reported in mixed economy areas (13 in 20 villages) and 6 of 8 semi-urban villages (see Table 3.3).

Table 3.3 Number of villages and source of agricultural water

Source of water	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Irrigated canal	6	9	0	0	7
Underground					
- less than 5	2	2	4	1	2
- more than 5	4	1	2	0	11
Natural canal					
- less than 5	0	0	1	2	2
- more than 5	1	0	3	7	3
Natural pond	0	0	2	1	0
Small dam	0	0	3	3	2
Rain water	3	15	19	19	10
Digging pond	0	0	3	0	2
Fountain	0	0	0	1	1
Water supply	0	0	0	0	1
Shallow well	0	0	0	0	1

Note : Multiple responses

The volume of water from natural sources compared to the previous year decreased in more villages than it increased (see Table 3.4).

Table 3.4 Number of villages comparing volume of natural source of water in 2001 and 2002 by strata

Volume of natural source of water compared with last year	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Decrease	4	7	10	9	9
Increase	-	2	3	3	2
Same	3	6	2	7	8
Don't know	-	2	2	0	0
(no natural source)	1	4	3	1	1
Total (village)	**8**	**21**	**20**	**20**	**20**

3.3 Occupation

The results from Round 3 (2002) census indicate that the main occupation of villagers in the study areas were agriculture. This was the same as reported in previous rounds. Even in semi-urban areas, most people in half of surveyed villages (4) were occupied with agriculture.

The other half of villages in semi-urban areas had the majority of their population working in factories and business. All 21 villages in rice areas were engaged in agriculture, six villages in plantation and upland areas had a mixture of agricultural labor and factory workers (see Table 3.5).

Table 3.5 Number of villages by main occupation of people and by strata

Occupation	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Agriculture	4	21	17	17	18
Agricultural labour	0	0	2	2	0
Non agriculture labour	0	0	0	0	1
Government service	0	0	0	0	1
Business	1	0	0	0	0
Others	3	0	1	1	0
Total (villages)	**8**	**21**	**20**	**20**	**20**

In rice villages people mostly grow rice, while in plantation areas more people grow cash crops. There were plantations of sugar cane, corn and cassava as well as gardens of vegetables and fruits scattered in many villages (see Table 3.6).

Table 3.6 Number of villages growing cash crops by strata

	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Rice	3	19	7	10	6
Cash crop	7	19	19	18	18
Vegetable	5	9	13	12	17
Fruit	4	10	12	14	10
Tree	-	9	10	9	6
Other	-	1	1	2	1

Note : Multiple responses

Animal husbandry was found in every village. Most popular animals were cows, pigs and chicken. Raising buffalo for sale was uncommon. In brief, in addition to crops, raising animals was undertaken in every study areas (see Table 3.7).

Table 3.7 Number of villages with animal husbandry by strata

Animal Husbandry	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Cows	6	21	16	17	19
Buffalo	-	5	2	9	5
Pigs	3	16	16	15	16
Chicken	5	14	16	16	15
Fish	2	5	3	12	6
Prawns	-	2	1	-	-
Frogs	-	1	1	3	1
Other (sheep, cluck, silk)	-	1	1	2	1

Note : Multiple responses

3.4 Public facilities and communication

Change in the presence of public facilities between Round 1 (2000) and Round 3 (2002) was evident, with the presence of telecommunications e.g. home telephone, public telephone, cellular phone, internet communication and broadcasting posts increasing while the presence of 2 way radio decreased because the villagers used more advanced telecommunication. In all except 6 upland villages people could watch television. A satellite dish is necessary for TV reception in most of Kanchanaburi Province.

There was little change in the number of bus routes to the villages, although access decreased in plantation villages (from 12 to 8 villages this year) (see Table 3.8).

Table 3.8 Number of villages by public facilities, Round 1 (2000) and Round 3 (2002)

Public facilities	Semi-urban		Rice		Plantation		Uplands		Mixed Economy	
	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)
TV. Signal	-	8	-	21	-	20	-	6	-	19
Public telephone booth	2	15	8	15	6	12	14	16	15	18
Working public telephone	1	7	7	21	6	20	6	19	11	20
Home telephone	-	7	-	10	-	8	-	9	-	15
Cellular phone signal	5	8	17	20	14	19	10	13	18	20
Broadcasting post	4	6	13	20	12	19	14	16	12	17
2 way radio	4	5	14	11	16	8	16	15	17	12
Internet connection	1	3	2	0	0	0	1	2	2	5
Bus route	2	3	6	11	12	8	14	14	6	7

There was an increase in the presence of paved roads from the villages to the district centers from Round 1 (2000) to Round 3 (2002). This was most evident in upland areas where the number of villages connected by paved roads increased from zero to 17. This resulted in much greater convenience in travelling between villages and districts. However, some villages still faced floods, especially 5 villages in the upland strata. Among 20 plantation villages, 7 experienced floods in the previous year (see Table 3.9).

Table 3.9 Number of villages by type of road and strata

	Semi-urban		Rice		Plantation		Uplands		Mixed economy	
	Within village	Between district	Within village	Between district	Within village	Between district	Within village	Between district	Within village	Between district
Soil/Carterite and asphalt	0	0	9	0	16	1	12	3	9	0
Asphalt and concrete	0	0	5	0	0	19	2	0	1	0
Concrete	8	8	7	21	4	0	6	17	10	20

3.5 Health

Baseline data in 2000 showed that there were government sub-district health centers and primary health care centers that served groups of villages and small private small shops in every village that provided essential medicine.

The major diseases mentioned by village leaders were slightly different from the first round. The most prevalent disease was colds, found in every area, such as in every village in semi-urban areas. It was observed that colds were more often reported than in Round 1 (2000). The second most reported disease was malaria, especially in upland areas. Other diseases such as bone disease and hypertension were mentioned (see Table 3.10). Moreover, some key informants disclosed new diseases in their villages that were not previously found such as allergy, hemorrhage fever, and leptospirosis.

Table 3.10 Number of villages by major diseases and strata

	Semi-urban		Rice		Plantation		Uplands		Mixed Economy	
	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)	Round 1 (2000)	Round 3 (2002)
Colds	0	8	11	19	12	16	6	10	7	17
Malaria	0	0	0	0	2	1	17	9	5	2
Bone diseases	-	0	-	1	-	0	-	1	-	0
Allergy	-	0	-	0	-	2	-	0	-	1
Pain	0	0	4	0	0	1	0	0	0	0
Tension	-	0	-	1	-	0	-	0	-	0
Hemorrhagic fever	1	-	0	-	1	-	3	-	1	-
Hypertension	1	-	2	-	0	-	0	-	1	-
Diabetes	1	-	2	-	0	-	0	-	0	-
Conjunctivitis	0	-	0	-	0	-	2	-	0	-
Elephantiasis	0	-	0	-	0	-	1	-	0	-

Note : Multiple response

3.6 Community development

During the first round of baseline data collection the Royal Thai Government inaugurated many projects to assist villagers such as “One-Million-Baht-Village Fund-Project” “Economic push-up project”, etc. In Round 3 (2002) information on development projects in villages were collected. It was found that there were many projects under different names and organizations, e.g. Sub-district Administration Organization, Department of Public Welfare, Department of Irrigation, etc. Village key informants indicated that their villages received assistance from various projects. The most frequently cited project was called

"100,000 Baht Fund". For example, 10 of 21 rice growing villages got 100,000 Baht per village but only 4 out of 88 villages received the "One-Million-Baht Village-Fund-Project" (see Table 3.11).

Table 3.11 Number of villages with development projects by strata

Development project	Semi-urban	Rice	Plantation	Uplands	Mixed Economy
One million Baht village fund	0	1	2	0	1
100,000 Baht fund	3	10	9	6	8
Economic push-up	0	5	1	0	0
Road construction	0	1	1	6	0
Electricity	0	0	2	3	1
Water supply	0	2	2	3	3
Water tank construction	0	3	1	1	2
Elderly	0	0	2	2	2
Children's health	0	2	2	2	2
Supplement food (milk)	0	1	3	0	2
Occupation promotion	1	0	0	9	4
Drug free village	0	2	1	2	0
Sport plaza	0	2	0	2	0
Community slop	0	0	0	0	2
Other (1) well, rice	1	11	9	13	8
Other (2) SIF, income generating fund	0	3	7	7	4
Other (3) dam, PTT fund	0	1	2	1	0

Comparing data from Round 1 (2000) and Round 3 (2002) the main change in economic and social structure in the study villages was the increase of public facilities and communications as well as development projects inaugurated during the past two years.

4. General Characteristics of the Population

Anchalee Varangrat

The general characteristics of the population that are discussed in this chapter consist of: 1) Population size; 2) Sex ratio; 3) Age-sex structures; 4) Median age; and 5) Dependency ratio:

4.1 Population size

In Round 3 (2002), 12,680 households were enumerated. The population living in the field site communities consisted of 45,043 household members, of whom 21,673 were male and 23,370 were female (see Table 4.1). Twenty-seven percent of the population resided in the upland strata while 21 percent each lived in the urban/semi-urban and mixed economy strata. Approximately 16 and 15 percent of the population lived in the rice and plantation strata respectively.

Table 4.1 Number of population by sex and strata, Round 3 (2002)

Strata	Male	Female	Total	Households
Urban / Semi-urban	4,431	4,985	9,416	2,664
Rice	3,358	3,881	7,239	2,024
Plantation	3,324	3,545	6,869	1,986
Uplands	6,182	6,117	12,299	3,399
Mixed Economy	4,378	4,842	9,220	2,607
Total	**21,673**	**23,370**	**45,043**	**12,680**

When comparing the enumerated population between the three rounds, the number of enumerated households increased by nine percent between Round 1 (2000) and Round 2 (2001), with a further small increase of 0.2 percent between Round 2 (2001) and Round 3 (2002). The number of households at Round 3 (2002) was 12,680, compared to 12,657 households in Round 2 (2001). The number of enumerated household members increased by 8 percent (8.9 percent for male and 7.2 percent for female) between Round 1 (2000) and Round 2 (2001). However, a decline in the number of residents was found between Round 2 (2001) and Round 3 (2002), with the decline for males being 2.4 percent and for females 1.9 percent, resulting in a total decline of 2.1 percent (see Table 4.2).

Table 4.2 Number of households and population by sex, Round 1 (2000) - Round 3 (2002)

	Round 1 (2000)	Round 2 (2001)	% change from Round 1 to 2	Round 3 (2002)	% change from Round 2 to 3
Number of households	11,612	12,657	*9.0*	12,680	*0.2*
Number of Population	42,614	46,029	*8.0*	45,043	*-2.1*
Male	20,378	22,197	*8.9*	21,673	*-2.4*
Female	22,236	23,832	*7.2*	23,370	*-1.9*

Table 4.3 shows the population distribution and percentage change for each strata during 2001-2002. It was found that the number of households increased in the rice, plantation and uplands strata, while a slight decline in the number of households was found in urban/semi-urban and mixed economy strata. The number of population decreased in every strata from Round 2 (2001) to Round 3 (2002). The area with the highest percentage change in population was the

uplands strata (4 percent), while the upland strata had the lowest percentage change in population (less than 1 percent). The decrease in population was generally similar for both males and females, except in uplands strata where the number of females increased slightly.

Table 4.3 Number of households, population and percent change in population by sex and strata, Round 2 (2001) – Round 3 (2002)

	Strata					
	Urban / Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Households						
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
Percent change	-4.0	2.8	0.9	2.1	-0.3	0.2
Population						
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
Percent change	-3.9	-1.5	-3.0	-0.2	-2.8	-2.1
Male						
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
Percent change	-3.5	-2.3	-3.1	-0.7	-3.0	-2.4
Female						
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
Percent change	-4.2	-0.8	-2.9	0.4	-2.7	-1.9

4.2 Age structure

Figures 4.1 - 4.5 show the population pyramid of the five strata in Round 3 (2002). The data show that the age structure of the population is similar throughout the three rounds of the census where urban/semi-urban strata had a higher proportion of "older" or "aging" population than the other strata. The uplands area had a younger population than other strata, while the rice, plantation and mixed economy strata had more "working age" population than other areas.

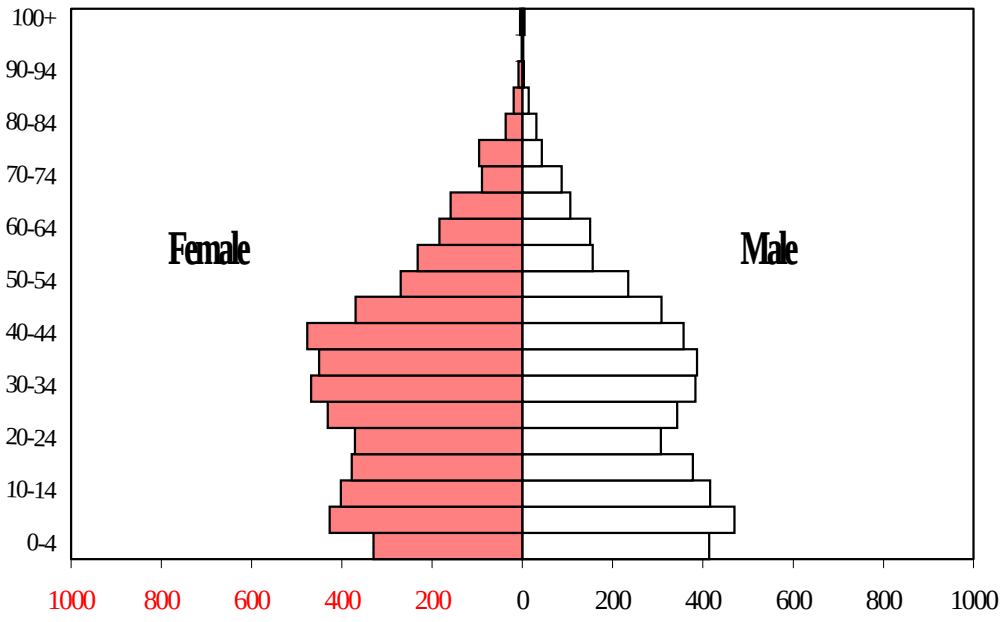

Figure 4.1 Population pyramid: urban/semi-urban strata, Round 3 (2002)

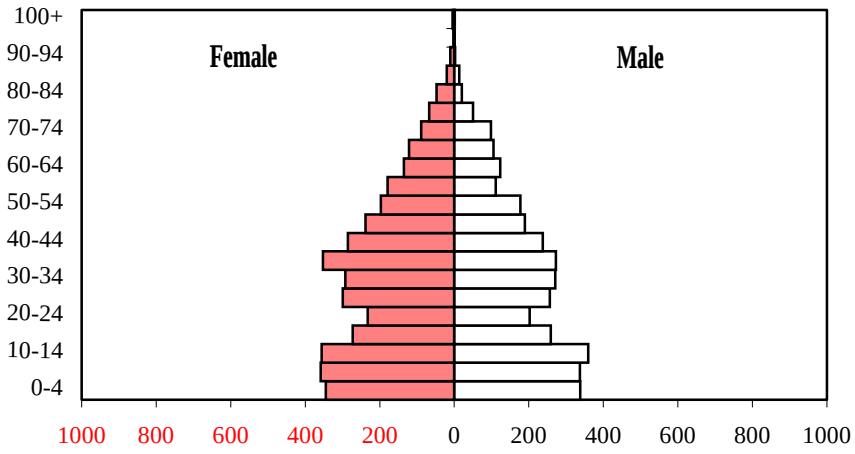

Figure 4.2 Population pyramid: rice strata, Round 3 (2002)

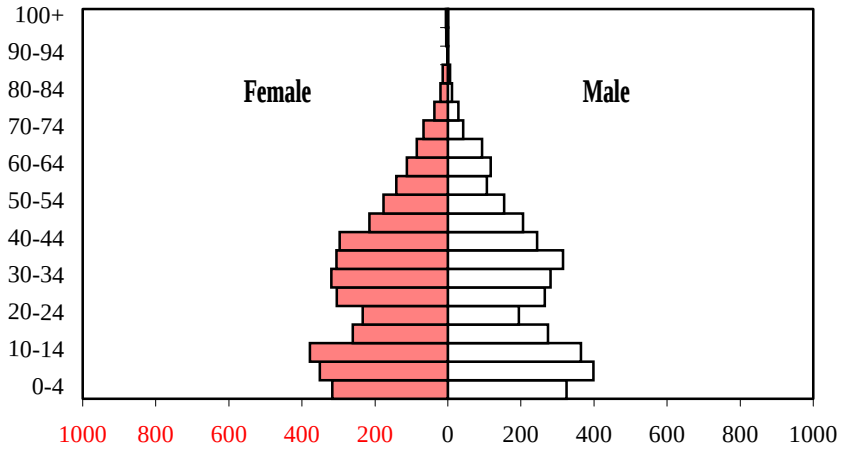

Figure 4.3 Population pyramid: plantation strata, Round 3 (2002)

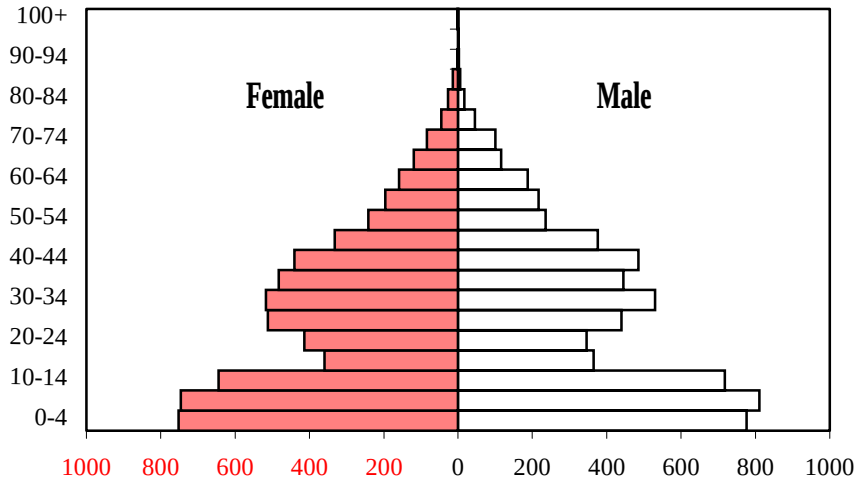

Figure 4.4 Population pyramid: uplands strata, Round 3 (2002)

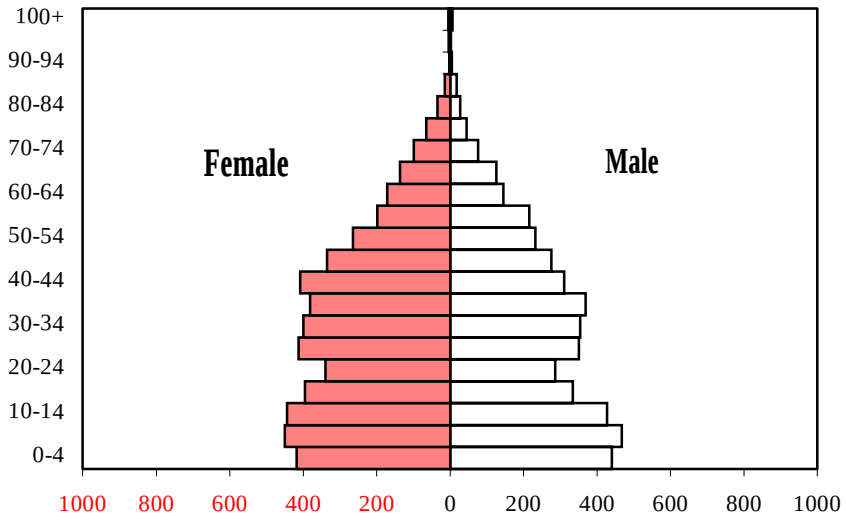

Figure 4.5 Population pyramid: mixed economy strata, Round 3 (2002)

The age structures of the strata are compared in terms of three broad age groups, which identify the population below labour force ages (below age 15), persons in the working ages (15-59), and persons above the working ages (60 and above). It was found that on average, the population in the study areas were concentrated in the working ages (60 percent). The uplands area had the highest proportion in the younger age groups (36 percent) and the lowest proportion at working ages (56 percent). The urban/semi-urban strata had the lowest proportion of young population (25 percent) and the highest proportion at working ages (64 percent). The area with the highest proportion of the population at older ages was the rice strata, where 13 percent of the population was aged 60 years and over.

Table 4.4 shows the population distribution of the three broad age groups for Round 1 (2000), Round 2 (2001) and Round 3 (2002). Similar age structures are observed in the three rounds and across strata. The uplands had the highest proportion of younger age group; urban/semi-urban had the highest proportion in working ages, while the highest proportions at older ages was found in the rice strata.

Table 4.4 Percentage distribution of population by age group and strata, Round 1 (2000) - Round 3 (2002)

Strata	0-14			15-59			60+		
	Round 1	Round 2	Round3	Round1	Round 2	Round 3	Round 1	Round2	Round3
Urban/Semi-urban	24.5	*25.1*	**24.8**	65.2	*64.3*	**64.3**	10.3	*10.6*	**11.0**
Rice	28.7	*28.5*	**28.6**	59.0	*59.0*	**58.2**	12.3	*12.5*	**13.2**
Plantation	30.3	*30.1*	**29.9**	60.5	*60.7*	**59.5**	9.2	*9.2*	**9.7**
Uplands	36.1	*36.1*	**35.5**	56.6	*56.3*	**56.2**	7.3	*7.6*	**7.8**
Mixed Economy	28.5	*27.9*	**27.3**	61.2	*61.8*	**61.0**	10.3	*10.3*	**10.6**
Total	29.9	*29.9*	**29.8**	60.4	*60.2*	**60.0**	9.7	*9.8*	**10.2**

In Thailand, and in Kanchanaburi, attention is being focused on the elderly population due to the increasing size of this group. Table 4.5 presents the percentage of ageing population divided into two main age groups, 60 and over and 80 and over or the oldest old. In general, it was found that the proportion of the population in these two age groups is increasing. For example, the proportion of the population aged 60 and over increased from 9.7 in Round 1 (2000) to 10.2 in Round 3 (2002). Similarly, the proportion of the oldest old (80+) slightly increased during the three rounds.

Table 4.5 Percent of population aged 60+ and 80+ by strata, Round 1 (2000) - Round 3 (2002)

	Strata					
	Urban / Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Age 60 and over						
Round 1 (2000)	10.3	12.3	9.1	7.3	10.3	***9.7***
Round 2 (2001)	10.6	12.5	9.2	7.6	10.4	***9.8***
Round 3 (2002)	**11.0**	**13.2**	**9.8**	**7.8**	**10.7**	**10.2**
Age 80 and over						
Round 1 (2000)	1.2	1.6	0.9	0.5	1.1	***1.0***
Round 2 (2001)	1.3	1.7	0.9	0.6	1.3	***1.1***
Round 3 (2002)	**1.4**	**1.8**	**0.9**	**0.6**	**1.2**	***1.1***

4.3 Sex ratio

The sex ratio is defined as the number of males per 100 females. Overall, there were more females than males in every stratum, except for the uplands. The sex

ratio, at 87, was lowest in the rice strata (see Table 4.6). In the age groups below 15 years, the urban/semi-urban strata has more males than females and this ratio is higher than other strata. There were fewer males than females at working ages in all strata, with the lowest ratio of 82 observed for the rice strata.

Generally the sex ratios decline with increasing age, particularly in the older age group. The sex ratio declined from 105.7 among the younger age group to 84.3 in the age group 60 and over. This means that for every 100 females aged 60 and over there were 84.3 males while there were only 57 males for every 100 females in the age group 80 and over (see Table 4.6).

Table 4.6 Sex ratio by age group and strata, Round 3 (2002)

Age group	Urban / Semi-urban	Rice	Plantation	Uplands	Mixed Economy	**Total**
0-14	110.8	99.2	107.4	108.8	100.1	***105.7***
15-59	84.5	82.2	88.8	96.0	87.8	***88.3***
60+	72.5	80.4	85.9	104.9	82.3	***84.3***
80+	56.3	48.3	48.8	56.5	76.2	***57.1***
Total	**88.9**	**86.5**	**93.8**	**101.1**	**90.4**	***92.7***

Note: sex ratio = (number of males / number of females) x 100

The sex ratio pattern in Round 3 (2002) and Round 2 (2001) were similar to Round 1 (2000), where there were more females than males, except in the uplands area. A similar pattern was also found for each age group in all strata (see Table 4.7).

Table 4.7 Sex ratio by age group and strata, Round 1 (2000) - Round 3 (2002)

Survey	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***

Table 4.8 shows the sex ratio pattern by 5-year age groups from Round 2 (2001) to Round 3 (2002). A similar pattern is observed across these rounds. However, there were more males than females in the uplands areas during Round 2 (2001) while this pattern was not found in Round 3 (2002).

Table 4.8 Sex ratio by age group and strata, Round 2 (2001), Round 3 (2002)

Age	Urban / Semi-urban		Rice		Plantation		Uplands		Mixed Economy	
Group	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3
0-4	*125.5*	**120.3**	*98.0*	104.0	*102.5*	**116.9**	*103.2*	**100.3**	*105.3*	108.5
5-9	*110.1*	**114.9**	*93.9*	98.4	*113.4*	**108.5**	*108.7*	**107.3**	*103.8*	107.7
10-14	*103.5*	**99.2**	*101.1*	**96.2**	*96.3*	**99.7**	*111.3*	**93.1**	*96.2*	**101.2**
15-19	*100.0*	**90.8**	*94.9*	**90.8**	*105.0*	**102.0**	*101.4*	**97.2**	*84.6*	**94.8**
20-24	*82.7*	**93.6**	*87.1*	**100.0**	*82.9*	**96.6**	*83.6*	**84.5**	*84.4*	**90.5**
25-29	*79.6*	**93.6**	*85.7*	**78.4**	*86.9*	**83.3**	*85.9*	**80.2**	*85.2*	**83.8**
30-34	*81.8*	**82.2**	*92.5*	**79.2**	*87.8*	**92.5**	*102.5*	**88.8**	*88.5*	**87.6**
35-39	*86.0*	**82.8**	*77.3*	**76.4**	*102.9*	**92.0**	*92.1*	**89.3**	*96.9*	**89.6**
40-44	*74.8*	**82.2**	*83.2*	**80.8**	*82.2*	**80.5**	*110.0*	**80.1**	*76.0*	**85.4**
45-49	*83.5*	**71.8**	*79.5*	**81.1**	*95.8*	**91.9**	*113.3*	**87.7**	*82.4*	**87.2**
50-54	*87.0*	**81.6**	*90.4*	**94.1**	*87.0*	**87.6**	*97.5*	**87.5**	*87.9*	**91.6**
55-59	*67.2*	**81.9**	*62.6*	**62.9**	*75.4*	**67.1**	*110.7*	**103.4**	*109.1*	**85.5**

Table 4.8 (Continued)

Age Group	Urban / Semi-urban		Rice		Plantation		Uplands		Mixed Economy	
	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3	Round 2	Round 3
60-64	*81.5*	**82.3**	*91.2*	**71.1**	*103.5*	**96.8**	*118.2*	**82.8**	*84.8*	**88.8**
65-69	*66.7*	**66.0**	*86.9*	**97.3**	*109.3*	**92.3**	*96.7*	**87.7**	*92.6*	**86.8**
70-74	*97.8*	**90.6**	*111.2*	**95.9**	*62.7*	**81.0**	*120.2*	**72.3**	*76.8*	**91.0**
75-79	*44.8*	**59.6**	*75.0*	**98.3**	*78.4*	**82.9**	*102.2*	**93.2**	*69.2*	**86.1**
80-84	*83.8*	**43.5**	*44.7*	**39.2**	*55.0*	**57.1**	*63.0*	**60.0**	*79.4*	**48.4**
85-89	*73.7*	**77.3**	*70.0*	**61.5**	*42.9*	**50.0**	*42.9*	**118.8**	*120.0*	**68.9**
90-94	*33.3*	**66.7**	*30.0*	**42.9**	*100.0*	**0.0**	*150.0*	**100.0**	*250.0*	**53.6**
95-99	*200.0*	**33.3**	*50.0*	**50.0**	*25.0*	**0.0**	*0.0*	**75.5**	*50.0*	**66.7**
100+	*100.0*	**71.4**	*50.0*	**100.0**	*20.0*	**100.0**	*50.0*	**0.0**	*120.0*	**93.3**
Total	*88.3*	**88.9**	*87.9*	**86.5**	*93.9*	**93.8**	*102.2*	**90.4**	*90.7*	**92.7**

4.4 Median age

The median age is the age that divides a population into two numerically equal groups; that is, half the people are younger than this age and half are older. The median age is an index of the aging of population. Overall, the median age of the population in the field site is 28. The uplands strata had the lowest median age (25 years), while the urban/ semi-urban had the highest median age (30 years). This finding is consistent with the younger age structure of the upland strata. The median age for Round 1 (2000) and Round 2 (2001) was almost the same, while the median age for Round 3 (2002) was one year lower than the previous Round (see Table 4.9).

Table 4.9 Median age by strata, Round 1 (2000), Round 2 (2001) and Round 3 (2002)

Survey	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***

4.5 Dependency ratio

The dependency ratio is defined as the ratio of people who are at economically dependent ages (under age 15 and 60 and over) to the people who are in labor force ages (15-64 years). The dependency ratio depends on population structure. If a population has a high proportion of younger and older population it will have a high dependency ratio.

Table 4.10 shows the total dependency ratio, young dependency ratio and old age dependency ratio. It was found that overall, for every 100 working age population there were 50 younger persons and 17 older persons. The uplands strata had the highest dependency ratio, while the urban/semi-urban strata had the lowest dependency ratio. In the uplands area, for every 100 working age population there were 63 younger persons and 14 older persons. On the other hand, there were only 39 younger persons and 17 older persons for every 100 working age persons in the urban/semi-urban strata. This is because the urban/semi-urban strata had the lowest proportion of population younger than 15 years.

The dependency ratio in Round 3 (2002) was slightly higher than the other two rounds of the survey, particularly the old dependency ratio. A similar pattern of dependency ratio in each strata were found for the three rounds of survey. For example, the uplands strata had the highest young dependency ratio while the highest rate of old dependency ratio was found in the rice strata (see Table 4.10).

Table 4.10 Total dependency ratio, young dependency ratio and old dependency ratio by strata, Round 1 (2000), Round 2 (2001) and Round 3 (2002).

Strata	Total Dependency Ratio			Young Dependency Ratio			Old Dependency Ratio		
	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3
Urban/ Semi-urban	53.4	55.6	**55.6**	37.5	39.0	**38.5**	15.8	16.5	**17.1**
Rice	69.6	69.5	**71.8**	48.7	48.3	**49.1**	20.9	21.2	**22.7**
Plantation	65.2	64.7	**66.6**	50.1	49.6	**50.5**	15.1	15.1	**16.3**
Uplands	76.8	77.6	**76.9**	63.8	64.1	**63.1**	13.0	13.4	**13.8**
Mixed Economy	63.3	61.9	**62.1**	46.5	45.2	**44.8**	16.8	16.7	**17.3**
Total	**65.6**	**66.0**	**66.7**	**49.5**	**49.7**	**49.6**	**16.1**	**16.3**	**17.1**

4.6 Summary

The census enumerated 45,043 household members in the field site communities. Among those, the highest proportion were found in the uplands strata (27 percent), while the plantation strata contained the lowest proportion, or only 15 percent of the total population. The population in the urban/semi-urban and

mixed economy strata decreased in Round 3 (2002) when compared with the other two previous censuses of the field site communities. The population decreased in every area. Compared with other areas, the urban/semi-urban strata had the highest rate of population change. Overall, the age-structure of the population did not change significantly over the three census rounds. The uplands strata had the highest proportion in the younger population age group while the rice strata had the highest proportion in the older population age group resulting in the lowest median age and highest (old) dependency ratio in this area. Overall, it was found that in Round 3 (2002) there were more females than males in every strata except in the uplands strata. The median age of population in this census (2002) was 28 years, which is one year lower than the previous two censuses. The average dependency ratio was approximately 66.7, which means that for every 100 working age population there was 50 young persons and 17 older persons.

5. Socio-economic Status

Aree Chumpaklai

This chapter describes the socio-economic status of women and men. Information about socio-economic status in this chapter includes occupation and educational attainment. In addition, data on language use in daily life is also presented. Unlike occupation and education, information about language is collected at the household level. Data on socioeconomic status of women and men are presented based on the five strata included in the field site. Changes and trends from the data collected in Round 1 (2000), Round 2 (2001), and Round 3 (2002) are also shown.

5.1 Economic activity

Economic activity refers to the main occupation of individuals residing in the Kanchanaburi field site communities. The main occupation is defined as the main economic activity that occupies most of an individual's time. It is categorized in this chapter as agriculture, professional, administrative and clerical, sales, service, transport and communication, craft and labor, other occupation, and students. Occupation is reported for individuals aged 15 years and older.

In general, agriculture remains the dominant occupation for Kanchanaburi residents. More than half of men in the study earn a living in agriculture. From Round 1 (2000) to Round 3(2002), the proportion of men in agriculture did not decline (see Figure 5.1). The second largest activity for men is craft and labor. About one-eighth worked in craft and labor occupations. The proportion of men

in this field seems to be increasing. The remaining men are scattered in other activities, with less than 10 percent for each category.

Although we do not see a large shift in occupation composition from Round 1 (2000) to Round 3 (2002), some changes are worth noting. There is a decrease in proportion of men in administration and clerical work, while an increase is seen in the proportion of men in transport and communication occupations.

The proportion of men aged 15 years and older who were unemployed is another important indicator. In the last round of available data, 9 percent of men were not working. This figure shows a small decrease from Round 1 (2000) data in which about 1 out of 10 men were unemployed. Another group of not-working men are students who comprise about 5 percent of all men.

There are both similarities and dissimilarities in patterns of occupation for women compared to men (see Figure 5.1). Like men, the majority of women worked in the agricultural sector. The proportion of women participating in farming increased more than that of men, although women's level of participation in farming was less than that of men due to the lower level of labor participation among women compared to men.

The second largest share of women (about 1 out of 10) was found in sales occupations. Craft and labor was the occupation of about 7 percent of women. While men are increasingly participating in craft and labor, the proportion of women in this occupation seems to be declining. Beside those occupations, the proportions of women in professional, administration and clerk, and service occupations are similar (less than 5 percent).

About one-fourth of women were not working by the time of the survey. This is more than two times the level recorded for men. This represents a slight increase from Round 1(2000) and Round 2 (2001) to Round 3 (2002). Note, however, that this proportion includes married women who were engaged in full-time home duties, which is not considered an economic activity in this study.

Table 5.1 and 5.2 present occupation data for each of the five strata comprising the field site. There is substantial variation in occupational composition among the five strata, particularly between the occupation of individuals living in urban/semi-urban areas and individuals living in other areas. While agriculture dominated other occupations for women and men in most strata, the most dominant occupation of individuals in the urban/semi-urban strata was craft and labor for men and sales for women. The proportion of men in urban/semi-urban strata who worked in craft and labor occupations increased, with more than one fifth in Round 1 (2000) and Round 2 (2001) and about one fourth in Round 3 (2002) in these occupations. However, agriculture is still a significant occupation even in the urban/semi-urban strata. Though not ranked first in terms of the proportion employed in the sector, agriculture ranked the second for both women and men in the urban/semi-urban strata. Moreover, the proportion of women and men working in agriculture in the urban/semi-urban strata increased between Round 1 (2000) and Round 3 (2002). The proportion of farmers did not increase in every strata. In the rice and plantation strata, the proportion of the population who were farmers decreased.

Not only is the urban/semi-urban strata different from other strata in terms of the relative share of agriculture and craft and labor occupations, it is also different in other economic activities. Compared to other strata, the proportion of both women and men in professional occupations was highest in the urban/semi-urban strata.

The proportion of those in professional occupations living in urban/semi-urban strata was at least two times higher than that of those living in other strata. Male unemployment was also highest in urban/semi-urban strata, although the proportion of those not working in every strata declined across census rounds. For women, the highest proportion not working was found in the upland strata where the proportion of the population belonging to ethnic groups is the greatest.

The preliminary information about economic activity described above not only identifies agriculture as the backbone of the economic structure of Kanchanaburi as a whole, it also implies differentials in economic structure of people between strata as well as between women and men.

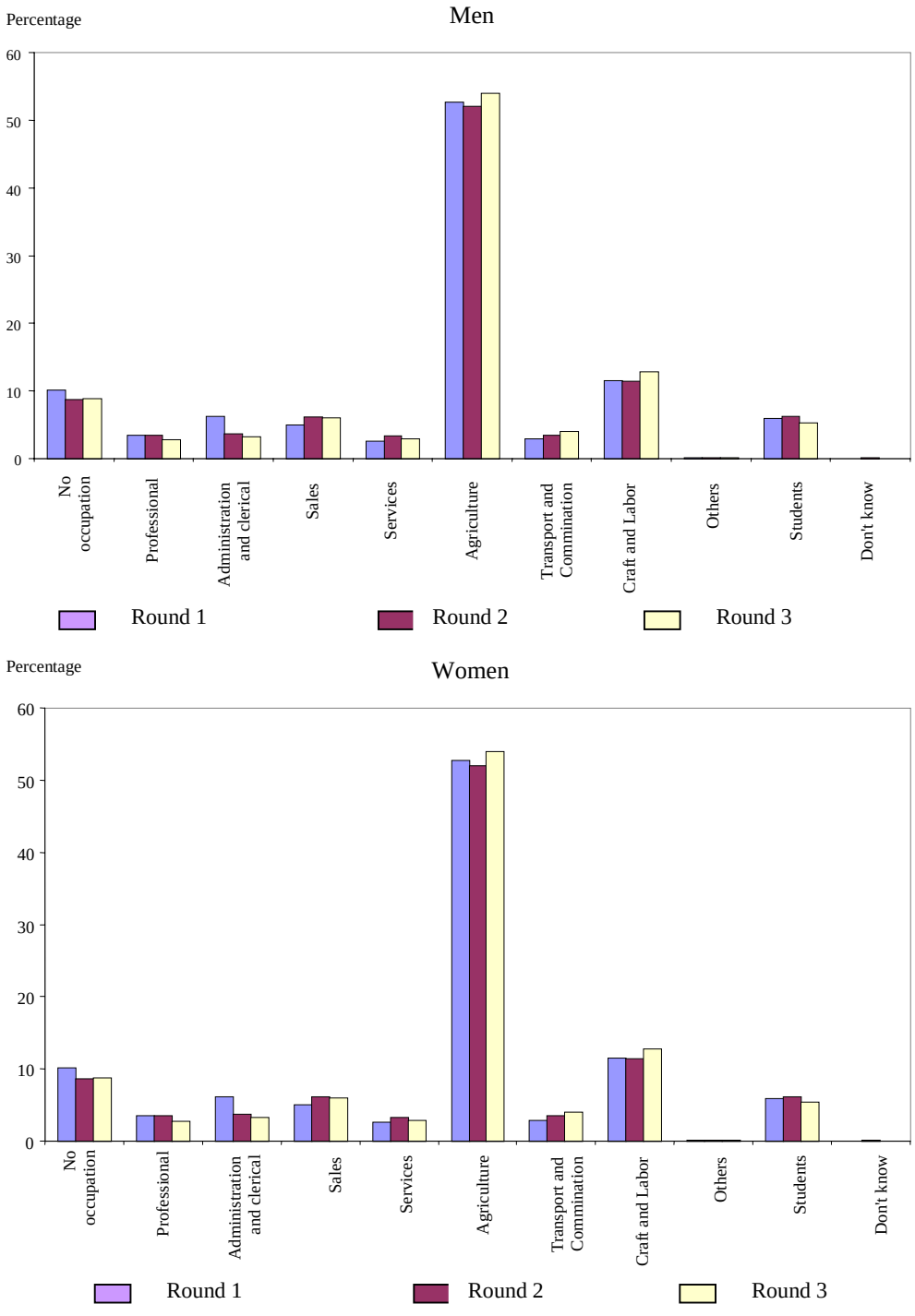

Figure 5.1 Occupation of individuals 15 years and older by sex, Round 1 (2000) – Round 3 (2002)

5.2 Educational attainment

Education increases access to resources in a society and is generally considered an important indicator of social status. This section of the report presents women and men's educational attainment. Education in this report refers to both formal and informal education. However, it does not include those who had religious education. There are two persons in Round 2 (2001) and 7 persons in Round 3 (2002) who hold a religious qualification. Neither does it include those who gave no answer about education (less than 1 percent in both rounds). Educational attainment is categorized into 6 groups. They are no school or less than grade 1, have some primary school but not completed grade 6, completed grade 6, have some lower secondary level or completed lower secondary level, have some upper secondary level or completed upper secondary level, completed higher than secondary level (see Table 5.3).

Information about education clearly reflects variation in educational chances of people living in urban/semi-urban stratum and in other strata. It moreover suggests inequality between women and men in accessing education. The proportion of those with no schooling is quite high, and comprises one fifth for men and one fourth for women. There is only a small reduction in these levels between Round 2 (2001) and Round 3 (2002). Among strata, there was a substantial variation in educational attainment. The difference is easily seen between urban/semi-urban stratum and other strata. The urban/semi-urban stratum has the smallest proportion of people with no schooling, about 1 out of 10 for men and about 1 out of 8 for women. Apart from urban/semi-urban stratum, diversity in educational access is also observed among other strata. People in upland stratum have the highest proportion of those without schooling. More than one

third of men and more than two fifths of women in the uplands stratum have never been to school. There was almost no change in proportion of those with no schooling in the uplands stratum. This is especially true for women. The uplands stratum has the highest proportion of people with no schooling because the area contains the highest proportion of the population who belong to minority groups. Ethnic populations are less likely than the Thai population to have access to the Thai educational system. Another additional reason that may inflate the proportion of no schooling people is the way the study treats the education of foreign born people. There may be some foreign-born ethnic people who may have education from their original countries. These people's education was coded as no education in this study. Although the first proposition seems to weigh more in resulting in high proportion of no schooling people, the latter may play some role and should not be ignored.

The proportion of people with no schooling in all other strata is smaller than of people in upland stratum. Nevertheless, differences are noticeable, especially for women. There is a greater proportion of women in the plantation stratum than in the rice and mixed economy strata who have no schooling. For men, the proportion who had never been in school is similar for the rice, plantation, and mixed economy strata.

The advantage of living in urban/semi-urban areas is confirmed when looked at proportion of people who have more than a compulsory education. The proportion of people living in urban/semi-urban stratum who completed more than grade 6 is far higher than other strata. This is clearly seen when considering education at higher than secondary level. The proportion of those in urban/semi-urban who finished more than a secondary level of education is more than five times higher

than those in rice plantation and upland strata, and almost three times greater than those in the mixed economy stratum.

Another significant result is gender differences in educational attainment. Generally, women receive less education than do men. In all strata, compared to men, the proportion of women who have never been in school is higher, while the proportion of women who have completed more than the compulsory level of education is smaller. Gender differences in educational attainment among strata are also varied. Figure 5.2 not only portrays differences in the proportion of the population who have no schooling among strata, it also depicts variation in gender differences in educational access between strata. Gender differences in educational attainment are smallest in urban/semi-urban stratum but greatest in the plantation and rice strata. Interestingly, in upland stratum where the educational level is lowest, gender differences in educational attainment are not as high as in the plantation or rice strata.

If educational attainment indicates individuals' social status, this preliminary report confirms inequalities among populations in different strata. The differences are not only displayed between urban/semi-urban and non-urban/semi-urban people, among non-urban/semi-urban people themselves, the differences also prevail.

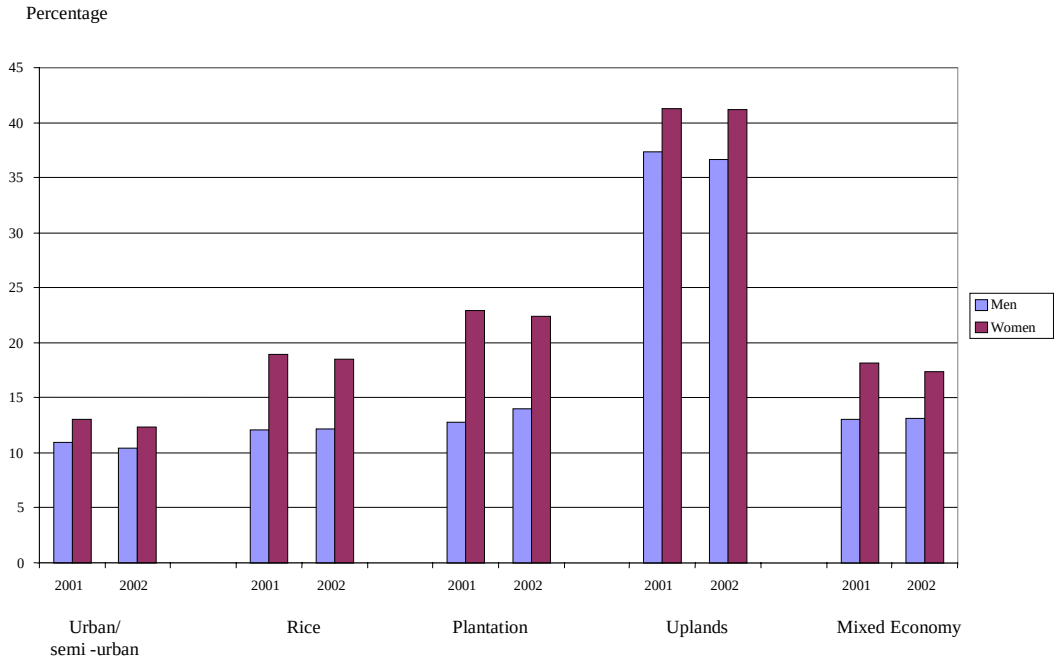

Figure 5.2 Percentage of population aged 7 and over who have never been in school by sex and strata, Round 2 (2001) and Round 3 (2002)

5.3 Language used in daily life

Not only do people in the study population vary in terms of demographic and economic characteristics, they are also vary with regard to culture. One measure of this variation is found for language used in daily life. To some extent, this information implies ethnic differences among strata.

Table 5.3 shows daily used language in general and by strata at household level. With the exception of people in the upland stratum, almost every household speak Thai in their normal daily life. In these strata, very few households use other

languages. Unlike other strata, languages spoken other than Thai are clearly evident in upland stratum. Only two thirds of household in this stratum speak Thai in daily use. This confirms that households in upland stratum are composed of a variety of ethnic groups. The biggest group of households who speak other languages than Thai, speak Karen and Karang (about one fifth). However, other languages are also used. Around one tenth of households speak Mon, while Burmese is spoken by about 6 percent of households in the upland stratum.

Understanding what language people speak is necessary in order to approach the community successfully.

Table 5.4 Language spoken in daily life by strata, Round 3 (2002)

Language	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed	Total
Thai	98.8	99.6	98.6	61.2	97.7	88.6
Mon	0.2	0.0	0.1	9.6	1.0	2.8
Lao	0.5	0.3	0.9	2.2	0.0	0.9
Burmese	0.2	0.0	0.3	5.8	0.8	1.8
Karen/Karang/ Pa Ka Yaw	0.1	0.0	0.1	20.2	0.2	5.5
Others	0.2	0.2	0.1	1.0	0.3	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	2,664	2,024	1,986	3,399	2,607	12,680

5.4 Summary

Variations in occupation, education, and language used in daily life indicate variations in socioeconomic background among Kanchanaburi people particularly between people in the urban/semi-urban stratum and in other strata. With regard to occupation, agriculture remains the most important occupation in Kanchanaburi in all strata except the urban/semi-urban stratum. The second most important occupation is craft and labor for men, and sales for women. For those in the urban/semi-urban stratum, the largest proportion of population work in craft and labor. This is true for both women and men. Aside from type of work, data on occupation suggest that levels of labor force participation of women are about one-half those of men.

Data on education indicate that people living in urban/semi-urban stratum have the best access to education, especially when viewed from the proportion of those who have never been to school and those who completed an educational level higher than compulsory education. The proportion of people who have never received any formal education is smallest in the urban/semi-urban stratum. Consistently, the percent who have a higher than primary education are highest in urban/semi-urban stratum. The data also suggest inequality between genders in educational attainment.

The data about language spoken in daily life suggest cultural differences among strata, with the upland stratum very different from other strata. Although Thai is spoken by most households in all strata, less than two thirds of households in the uplands stratum speak Thai in their daily life, while about one fifth speak Karen or Karang.

6. Migration

Philip Guest, Sureeporn Punpuing

Migration is defined as movement in or out of the village of current residence during the 12 months prior to the census. The 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, 2001 and June 30th, 2002. Migration information is obtained from the household questionnaire. In Round 3 (2002), the list of family members from Round 2 (2001) was updated. Therefore if a family member who was listed in Round 2 (2001) 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 2 (2001) but who are usual residents in Round 3 (2002) were defined as in-migrants.

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. Comparisons of in and out migration rates can be calculated for Round 2 (2001) and Round 3 (2002). However, as Round 1 (2001) could only identify in-migration only a comparison of in-migration rates can be made with Round 1 (2000).

Slightly over 80 percent of the field site population were non-migrants, with an in-migration rate of seven and an out-migration rate of twelve per hundred population, which results in a net out-migration rate of approximately five per

hundred population. Compared to Round 2 (2001), for Round 3 (2002) there was a slight decrease in in-migration rates and a substantial increase in out-migration, resulting in a doubling of the net-migration rates. The results point to a rapid and increasing decline of the population of the field site fueled by net out-migration.

All strata experienced net out-migration. The highest levels were recorded for the mixed economy (5 percent) and plantation strata (5 percent) and the lowest for the urban (4 percent) and rice strata (4 percent). The uplands stratum had the highest level of out-migration (13 percent) but also the second highest level of in-migration (9 percent). The highest in-migration rate (9 percent) was recorded for the urban strata (see Table 6.1 and Figure 6.1). The increase in net-migration rates that occurred between Round 2 (2001) and Round 3 (2002) were a result of different trends of in- and out-migration rates among strata (see Figures 6.2 and 6.3).

In general, however, it was greater increases in out-migration compared to decreases in in-migration that drove the large increases in net out-migration. It is interesting that although the urban/semi-urban strata remains an attractive place for in-migration, there was a substantial increase in out-migration from this strata. It is possible that improvements in the national economy since 2001 may have increased levels of out-migration from Kanchanaburi.

6.1 In-migration

The in-migration rates recorded in Round 3 (2002) were lower than those of Round 2 (2001) in all strata except for the urban/semi-urban stratum, where the rate remained constant at 9 percent (see Figure 6.2). The largest decreases are observed for the mixed economy (7.9 percent to 6.7 percent) and plantation strata (8.0 percent to 6.7 percent). The in-migration rates observed for Round 3 (2002)

remain substantially higher than those recorded for Round 1 (2001), primarily as a result of the improved ability to locate temporary migrants.

The proportion of male in-migrants was higher than that of female in-migrants in every strata. The largest difference in male and female in-migration rates was in the plantation and mixed economy strata. In-migration rates are highest for both males and females at ages 20-24, with almost 18 percent of males and 14 percent of females at those ages being in-migrants. In the urban/semi-urban strata the in-migration rates for males is 19 and 16 for females. The concentration of in-migrants at young ages is particularly marked for the urban/semi-urban strata, reflecting the movement of young people from rural to urban areas for study and work.

Approximately 57, 60, 60, 44 and 47 percent of in-migrants in urban/semi-urban, uplands, mixed economy, rice and plantation strata respectively, migrated from within Kanchanaburi. The next largest proportion came from other provinces in the Central region. The proportion of in-migrants from Bangkok was highest in the rice stratum (14 percent), and lowest in the uplands stratum (9 percent). The proportion of in-migrants from the Northeast region was highest in the plantation (8 percent), and lowest in the urban/semi-urban, and rice (3 percent). In every study area only small proportions of in-migrants were from the North and South regions of Thailand. As in the previous rounds, the results from Round 3 (2003) indicate that a substantial proportion of in-migrants to the uplands stratum (8 percent) come from a foreign country – almost all from Myanmar.

The major difference between Round 3 (2002) and previous rounds in terms of origins of in-migrants is the decreased proportion of in-migrants to the urban/semi-urban originating in Kanchanaburi, with increases in the proportion

coming from other Central region provinces and Bangkok. Other geographical patterns are very similar over the three rounds of data collection

6.2 Out-migration

Almost 13 percent of the male population and 11 percent of the female population of the field sites moved from their village of usual residence between Round 2 (2001) and Round 3 (2002). The level of male out-migration was higher than that of female out-migration in every strata, with the largest difference between male and female out-migration rates occurring in the uplands strata (see Table 6.2). Even more so than in-migration, out-migration is concentrated at young adult ages. Females ages 15-19 have the highest level of out-migration, while for males the highest levels of out-migration are at ages 20-24. Over 1 in 5 of males and females between ages 15 and 24 moved out of their usual village of residence in the one-year period being analyzed. The rates at these ages were highest in the uplands stratum. It should be stressed that only a small proportion of this migration of young adults is related to marriage. Most young migrants are moving for employment and education reasons.

Overall, half of out-migrants moved within Kanchanaburi. Approximately 54, 56, 48, 50 and 40 percent of out-migrants in the uplands, mixed economy, plantation, rice and urban/semi-urban strata respectively migrated within Kanchanaburi. For all strata, an increased proportion of out-migrants moved within Kanchanaburi between Rounds 2 (2001) and Round 3 (2002) compared to between Rounds 1 (2000) and Round 2 (2001). Other provinces in the Central region were major destinations of out-migrants in every study area, particularly for rice strata migrants, where about 32 percent of migrants moved to other Central region provinces. The proportion of out-migrants to Bangkok was highest in the

plantation stratum (26 percent), and lowest in the urban/semi-urban stratum (14 percent). The proportion of out-migrants to the Northeast region was highest in the mixed economy (6 percent), and there were small proportions of out-migrants to the North and the South. Seven percent of migrants from the uplands moved to foreign countries, mainly Myanmar, while about six percent of out-migrants in the mixed economy strata moved to foreign countries (see Table 6.3).

6.3 Summary

The field site population is losing population through net out-migration. The net out-migration rate of five recorded for Round 3 (2002) is approximately double the rate recorded for Round 2 (2001). ln general, the out-migration rate has increased more rapidly than the in-migration rate. The mixed economy and the plantation strata had the highest levels of net out-migration, while the lowest levels of next out-migration were recorded for the urban/semi-urban and rice strata. It appears that improved economic conditions after 2001 have stimulated migration in Kanchanaburi. For field site communities this has resulted in large increases in out-migration but smaller increases in in-migration.

Males were more migratory than females, and the proportion of migrants at ages 15-24 was the highest compared with those of other age groups. This probably is related to migration for education and work. The concentration of migrants at young adult ages is more pronounced among out-migrants than in-migrants. Out-migrants also tend to be somewhat younger than in-migrants. The high levels of out-migration of young persons and the much lower rates of in-migration at the same ages means that many areas are being depleted of their younger populations. For example, for women aged 15-19 there is net out-migration of 18.2 in the mixed economy stratum and 17.4 in the plantation sector. Only in the urban/semi-

urban strata is the net out-migration rate less than 10 (5.9) for this age group. The urban/semi-urban stratum remains an important destination for education and for non-agricultural work in Kanchanaburi province. Education and job opportunities encourage adolescents and young adults to migrate in for study and work and this offsets flows out.

In the field site study, 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 and Bangkok. There was an increase in the proportion of migration, both in and out, that took place within the province. 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.

Table 6.1 Percentage distribution by migration status in the year before Round 3 (2002)

Migration	Urban/ Semi urban	Rice	Plantation	Uplands	Mixed Economy	Total
Out migration to other villages	11.4	8.7	11.9	13.1	12.0	11.7
In migration from other villages	8.6	4.8	6.7	8.5	6.7	7.3
No migration	80.0	86.5	81.4	78.4	81.3	81.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	10,823	8,209	8,099	14,751	10,823	52,705

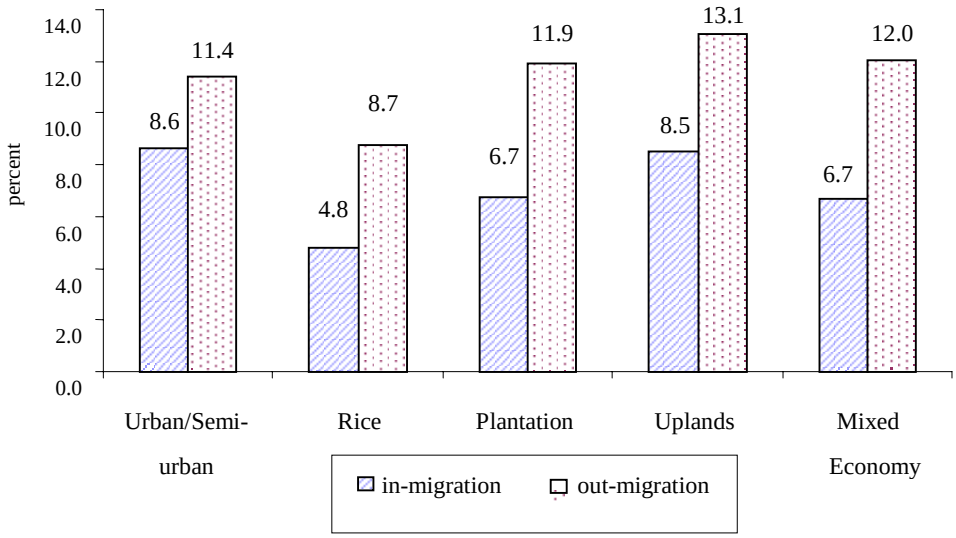

Figure 6.1: In-migration and out-migration rates, Round 3 (2002)

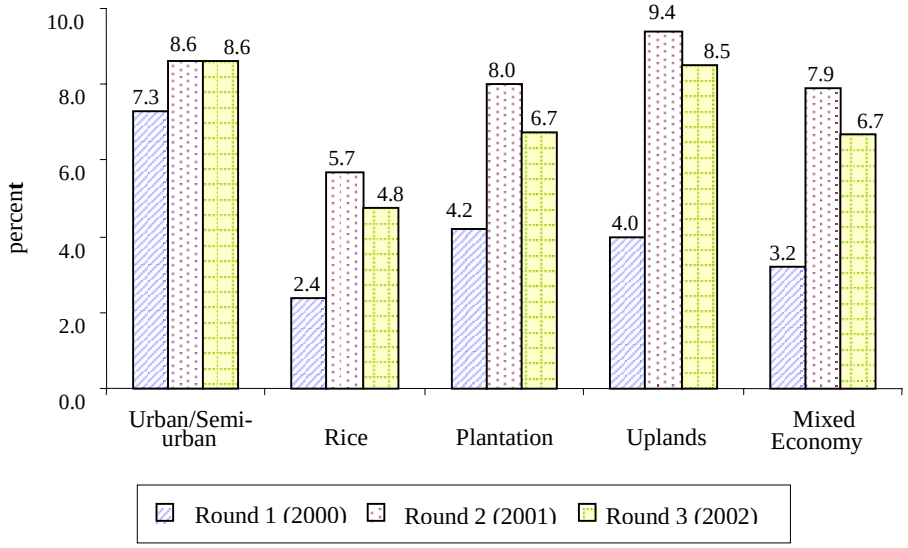

Figure 6.2: In-migration rate: Round 1 (2000) - Round 3 (2001)

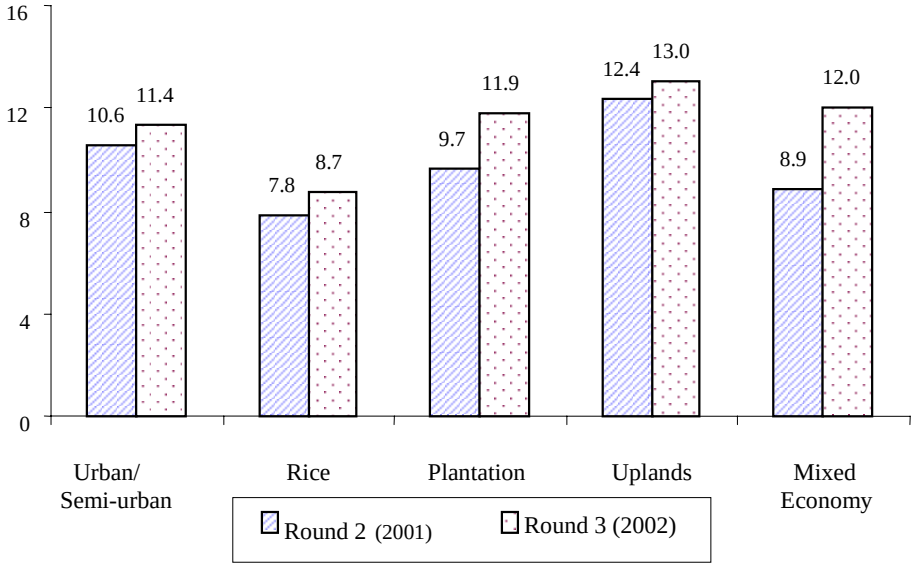

Figure 6.3: Out-migration rate, Round 2 (2001), Round 3 (2002)

Table 6.2 Percent migrants: July 1st, 2001- June 30th, 2002 by strata, sex and age

Age group	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	8.6	10.7	4.5	5.6	6.6	8.1	7.9	10.2	6.4	9.1	7.1	9.1
10-14	5.9	10.8	2.6	4.1	5.4	7.3	7.3	12.4	6.1	12.0	5.8	10.0
15-19	7.9	16.9	7.2	23.1	7.6	21.2	10.4	26.3	10.3	24.5	8.9	22.6
20-24	19.4	21.6	14.7	26.3	17.4	24.8	18.8	24.8	15.9	27.4	17.5	24.8
25-29	17.3	17.7	7.3	18.2	12.8	19.0	15.4	18.7	10.8	19.2	13.3	18.6
30-34	10.7	13.7	6.5	14.0	9.2	12.9	10.1	18.2	7.7	13.1	9.1	14.8
35-39	9.9	11.8	4.9	6.3	6.4	17.4	7.9	14.8	7.1	12.1	7.5	12.9
40-44	7.9	6.2	6.5	6.5	4.2	13.9	7.4	12.0	7.6	11.3	6.9	10.1
45-49	5.0	10.6	1.9	3.8	7.2	7.6	7.3	8.4	7.1	7.6	6.0	8.0
50-54	4.0	8.8	2.5	5.4	5.1	7.9	6.4	11.1	4.7	6.9	4.7	8.3
55-59	5.0	8.9	2.8	5.7	4.7	7.5	4.2	5.2	3.5	6.2	4.1	6.6
60+	4.3	3.9	2.4	5.1	4.2	5.5	5.1	7.9	3.1	7.5	3.9	6.1
unknown	-	35.0	5.6	44.4	0.0	64.3	-	45.8	-	40.0	1.2	45.3
Total	**9.2**	**12.1**	**5.2**	**10.0**	**7.6**	**12.7**	**9.0**	**14.1**	**7.5**	**13.0**	**7.9**	**12.7**

Table 6.2 Continued

Age group	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	6.7	9.3	3.7	6.0	5.9	9.5	7.8	11.3	6.6	10.5	6.5	9.8
10-14	6.8	8.3	3.4	4.4	5.4	6.6	4.6	11.6	5.5	10.8	5.1	8.9
15-19	15.3	21.2	6.2	20.1	8.9	26.3	14.3	26.0	7.3	25.5	10.9	24.0
20-24	15.9	23.1	13.1	20.2	13.3	20.8	14.8	19.5	11.7	21.3	14.0	21.0
25-29	12.7	12.7	6.5	11.6	9.5	15.7	13.1	11.2	7.3	11.8	10.2	12.4
30-34	10.1	12.1	7.1	6.8	4.1	13.3	9.1	10.4	6.4	11.2	7.7	10.8
35-39	7.5	10.5	4.5	6.1	5.1	8.7	4.6	9.1	6.5	7.9	5.7	8.6
40-44	4.9	9.2	2.7	3.9	3.9	5.7	6.9	7.5	4.8	7.4	4.8	7.0
45-49	5.3	4.4	2.3	2.7	3.7	7.4	4.8	8.8	5.3	6.8	4.5	6.2
50-54	4.8	4.8	1.9	3.7	3.6	5.6	2.9	9.0	2.2	7.0	3.1	6.2
55-59	3.7	7.4	0.6	3.6	4.5	5.1	1.5	4.9	2.7	6.7	2.6	5.7
60+	2.8	4.7	1.5	3.0	2.9	4.2	4.4	7.9	3.1	5.2	2.9	5.0
unknown	-	26.9	3.2	38.7	-	42.1	0.0	55.6	0.0	33.3	0.9	38.5
Total	**8.1**	**10.9**	**4.3**	**7.6**	**5.9**	**11.1**	**7.9**	**12.0**	**5.9**	**11.1**	**6.7**	**10.7**

Table 6.3 Percentage distribution of destination and origin place of migration by strata , Round 3 (2002)

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	57.1	40.4	44.1	49.9	46.9	47.7	59.9	53.6	60.2	56.0	55.8	49.9
Bangkok	13.2	13.9	14.3	19.0	14.0	26.4	8.6	12.8	9.7	21.6	11.3	17.5
Central	19.8	19.8	32.1	32.2	25.9	36.5	13.6	16.7	19.8	27.7	19.9	24.4
Northeast	2.5	2.9	2.6	3.8	7.7	5.6	3.3	6.8	5.0	10.4	4.0	6.1
North	3.6	1.2	2.3	2.1	2.9	2.9	4.3	2.9	1.7	1.2	3.3	2.1
South	3.2	2.2	4.3	0.8	1.8	1.4	1.7	1.4	2.2	2.4	2.4	1.7
Foreign	0.5	0.5	0.3	0.8	0.4	1.3	8.2	7.1	1.4	6.1	3.1	3.8
Unknown	0.1	33.9	0.0	2.1	0.4	6.0	0.4	17.4	0.0	6.5	0.2	15.1
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	**934**	**1,007**	**392**	**609**	**544**	**717**	**1,253**	**1,546**	**722**	**920**	**3,845**	**4,799**

7. Fertility and Family Planning

Varachai Thongthai

7.1 Fertility

Fertility is a central component in demographic surveillance. It is a process that adds to the population and affects the age and sex structure of a population. Fertility also influences health, especially for pregnant women and mothers.

7.1.1 Patterns and trend of fertility

Levels and patterns of fertility had changed little in the study area. The Total Fertility Rates (TFR) were 2.1 in both the first and second rounds, and declined to 2.03 in the third round. Age specific fertility rates were lowest amongst women aged 15-19 years old. The rate increased rapidly in the next age group (20-24 years old), then declined till the end of the reproductive ages. In the third round, compared to previous rounds, fertility decline was observed in every age group (see Table 7.1).

Table 7.1 Age specific fertility rates, total fertility rates of women aged 15-49 : Round 1 (2000) – Round 3 (2002)

Age	Age specific fertility rate		
	Round 1 (2000)	Round 2 (2001)	Round 3 (2002)
15-19	0.07821	0.06929	0.06466
20-24	0.12874	0.13320	0.12644
25-29	0.09780	0.10261	0.10561
30-34	0.06127	0.06913	0.06515
35-39	0.04005	0.03593	0.03199
40-44	0.01106	0.00742	0.01051
45-49	0.00192	0.00279	0.00179
Total fertility rate	**2.10**	**2.10**	**2.03**

Fertility declines occurred in all strata but at different rates. The urban/semi-urban area, which had the lowest TFR in previous rounds, was replaced by the mixed economy area (TFR = 1.54). The second lowest fertility was in the urban/semi-urban (TFR = 1.61), followed by rice growing area (TFR = 1.76), and plantation area (TFR = 1.77). The highest fertility was still in the highland area (TFR = 3.07). Fertility in the uplands strata was nearly twice as high as the mixed economy strata.

A large proportion of single women in the youngest age group (15-19) were a major factor in low fertility. As the proportion of married women increased as age increased the fertility rate also increased. When women had completed family size, they would use contraception. Thereafter fertility declined until the end of reproductive age.

Contraception was used not only to stop childbearing but also to postpone pregnancy. The postponement could be during first pregnancy or a successive pregnancy. The delay might be due to health or economic reasons. This ability of women to control their own fertility had resulted in fertility differentials amongst strata.

However, fertility patterns, as measured by age specific fertility rates, were similar in all strata (see Figure 7.1). It was low in the beginning of the reproductive period (15-19 years old), and then increased rapidly in the next age group (20-24 years old). In all strata except, the urban/semi-urban area, this was the peak of their fertility. For the urban/semi-urban area, the peak was in the 25-29 age group, probably as a result of delayed marriage in this environment. Fertility rates then gradually declined thereafter. Women in the mixed economy area stopped giving birth at the earliest age. They did not have any children at age 40-44 years. In urban/semi-urban, rice cultivation and plantation areas, women stopped having children at ages 45-49 years.

The fertility pattern in the uplands area was different from other areas. The fertility rates were higher at all ages, with births still occurring among women at ages 45-49. This was the result of early marriage and large desired family size in this strata.

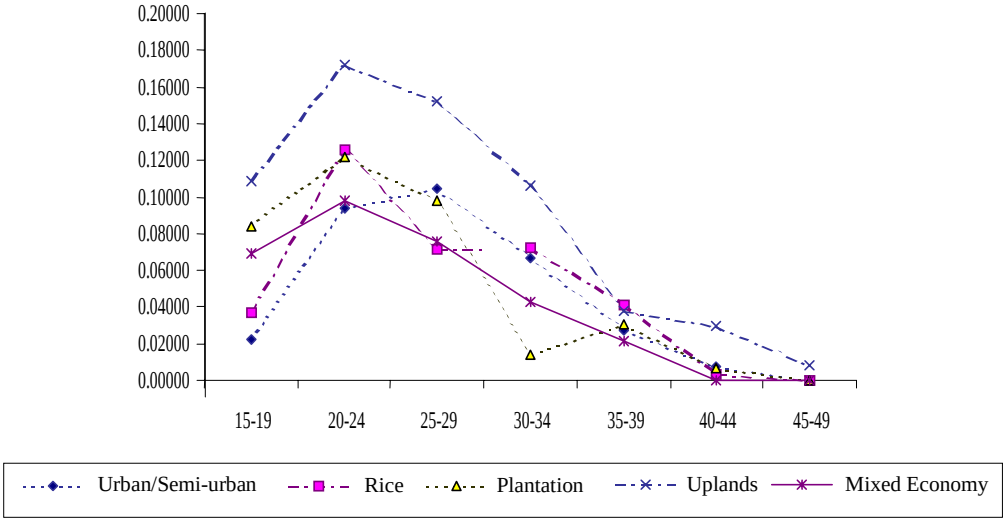

Figure 7.1 Age specific fertility rates by strata

7.1.1 Desire for additional children

Although all women in reproductive ages (15-49 years) are included in the analysis of the total fertility rate regardless of their marital status, in the analysis of the desire for additional children we only include currently married women.

In Round 3 (2002), one-fifth of currently married women reported wanting additional children. The proportion was higher for those who no or few children. Three fifths of childless women reported wanting children. For those with one child, there were two-fifths that wanted additional children. One-tenth of women with two children still wanted more children. Only 3 percent of women with three or more children reported wanting additional children (see Table 7.2).

Table 7.2 Percent of currently married women who want additional children by number of living children and strata, and average number of desired family size by strata.

Number of living children	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
0	50.8	59.4	57.8	73.2	59.9	60.5
1	34.0	39.2	43.1	54.7	44.5	43.9
2	3.8	8.4	9.6	17.9	5.8	9.5
3	2.4	1.9	1.5	7.3	0.9	3.4
4+	0.0	0.9	1.5	4.1	0.7	2.5
Total	**17.4**	**17.8**	**19.8**	**24.7**	**20.2**	**20.6**
Average desired family size	**1.99**	**2.25**	**2.31**	**2.84**	**2.22**	**2.38**

As the majority of married women had attained their desired number of children they did not want another child. The desired completed fertility can be measured by adding the number of living children and number of additional children desired (see last line of table 7.2). The overall desired family size was 2.4, which is slightly higher than the national desired family size.

The pattern of desire for additional children was similar amongst strata. The level was highest for uplands strata women. Table 7.2 shows that for every parity, a larger proportion of women in the uplands strata reported wanting additional children as compared to women in other strata. Overall, one-fourth of uplands women still wanted additional children. For women with two living children, 18

percent wanted additional children. This proportion was twice as high as women in other strata.

Although most women could report how many additional children they wanted, only two-thirds knew when they wanted additional children. Nevertheless, the majority did not want children soon. As shown in Table 7.3, only one-fourth of women who stated a time for having additional children reported that they wanted more children within a year. These patterns were the same for all strata.

Table 7.3 Percent distribution of women who reported they want more children by the time they want children and strata

Time to have next child	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	All
Within 6 months	9.4	11.7	9.9	8.7	7.6	9.1
6 months -1 year	9.4	9.9	9.1	8.0	7.3	8.5
1 - 3 year	30.3	36.0	36.4	23.6	32.0	29.9
More than 3 year	17.3	13.1	14.9	22.1	14.0	17.4
Cannot tell	33.5	29.3	29.8	37.7	39.2	35.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

In sum, fertility has slowly declined in the past three years. High fertility was still prominent in uplands areas where its pattern was also different from other areas. Uplands women tended to have children earlier and stop having children later compared to women in other areas.

A higher proportion of uplands women also wanted additional children. Moreover, the desired family size was also the highest amongst uplands women. Nevertheless, the time for wanting additional children of uplands women was not different from other strata. For all strata, the majority did not want children soon.

Less than one-fifth of women who said that they wanted more children reported wanting them within one year.

7.2 Family Planning

The following analysis of family planning is limited to currently married women in reproductive ages (MWRA). These women comprised 80 percent of all women in reproductive ages or about 58 percent of all women aged 15 years old and over.

7.2.1 Level and trends of contraceptive use

The Contraceptive Prevalence Rate (CPR) is an indicator of contraceptive use. It is the percent of MWRA who are currently using any method of contraception.

CPR had increased every year since 2000, from 74 percent to 77 percent in 2001 and to 79 percent in 2002. The increase occurred at similar rates in all strata and therefore did not alter the order of prevalence among strata. CPR was lowest in uplands area and highest in the mixed economy area. The second highest CPS was found in the plantation strata, followed by urban/semi-urban and rice cultivation strata (see Table 7.4).

Table 7.4 Contraceptive prevalence rates by strata Round 1 (2000) – Round 3 (2002).

Round	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	All
Round 1 (2000)	74.9	74.3	78.7	64.3	80.2	73.5
Round 2 (2001)	78.5	77.2	81.0	69.3	81.1	76.6
Round 3 (2002)	82.0	80.3	82.5	71.5	83.9	79.1

7.2.2 Pattern of contraception

CPR by method of use and age group is an indicator of the contraceptive pattern. There was little change in contraceptive pattern over the last three years. Overall, female sterilization remained the most popular contraceptive method. It was used by one-third of current users. The second popular method was the oral pill, followed by the injectable. About nine-tenths of current users were using one of these three methods (see Table 7.5).

Table 7.5 Contraceptive prevalence rates by method and strata, Round 3 (2002)

Method	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Female sterilization	36.1	28.5	26.7	19.5	33.4	28.0
Male sterilization	2.8	1.8	1.8	1.7	2.1	2.0
Norplant	0.6	0.4	2.3	3.6	1.9	2.0
Injectable	9.9	24.2	23.4	18.3	19.9	18.8
IUD	0.7	1.0	0.6	1.7	0.8	1.0
Pills	24.0	22.6	25.2	24.7	23.6	24.1
Condom	4.3	0.6	1.0	0.8	0.7	1.4
Withdrawal	0.9	0.3	0.2	0.1	0.5	0.4
Safe period	2.0	0.4	0.8	0.6	0.4	0.8
Others	0.7	0.4	0.5	0.6	0.6	0.6
Contraceptive prevalence rate	82.0	80.3	82.5	71.5	83.9	79.1

Female sterilization was the most popular method for women in all strata except in the uplands area. Highland women preferred the oral pill to female sterilization. Nevertheless female sterilization was the second most popular method in the uplands strata, followed by the injectable (see Table 7.5).

The proportion using the pill was similar amongst strata, which demonstrated its popularity. However, the proportion of injectable users was less in urban/semi-urban area compared to other areas (see Table 7.5). It should be noted that condoms were widely used only in urban/semi-urban area., and even in this strata only 4.3 percent of women used condoms as a method of family planning.

7.2.3 Sources of contraception

Public outlets remain important sources of contraceptives. More than three-fourths of contraceptive users received services from the public sector, namely hospitals, public health centers, and Mother and Child Health Centers (MCH). Public hospitals provided services to more than half of public sector users. On the other hand, drugstores were important sources of contraception in the private sector, with 16.1 percent of users obtaining their contraceptive supplies form this source (see Table 7.6).

Table 7.6 Percentage distribution of contraceptive users by source of supplies and strata, Round 3 (2002)

Source	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Public hospital	48.3	40.1	39.6	38.2	49.6	43.3
Public health center	9.0	45.4	40.2	40.3	24.0	31.4
MCH center	2.1	0.7	0.5	0.2	1.6	1.0
Drug store	26.8	9.5	14.5	12.9	16.1	16.1
Private hospital/ clinic	8.1	3.7	3.1	4.4	6.4	5.2
Others	1.7	0.4	0.7	2.4	1.1	1.4
Using traditional methods	1.9	0.2	0.5	0.8	0.2	0.7
No answer	2.1	0.2	1.0	0.7	0.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Public outlets for contraceptives were most important in rural areas. Women in the rice cultivation area had the highest proportion of public users (86 percent) compared to only 60 percent in the urban/semi-urban area.

In rural areas, public health centers played an equal role to public hospital in providing contraceptive service. In contrast, most public services in urban areas were provided by public hospitals (see Table 7.6).

Drugstores were also an important source of contraception, especially in urban areas. It serviced more than one-fourth of contraceptive users in urban/semi-urban areas. Nevertheless, a significant proportion of contraceptive users in rural areas sought services from drugstores, ranging from 10 percent in rice cultivation areas to 16 percent in mixed economy areas (see Table 7.6).

7.3 Husband participation in family planning

Ideally a husband and wife should consult each other on family matters, especially on family planning. In reality, however, contraceptive use often is the responsibility of the wife, as demonstrated by dominance of female methods in contraceptive use. There are only two male methods, namely vasectomy and condom.

Although husbands appear to rarely be directly involved in family planning, they could participate indirectly. Indirect participation ranges from talking about number of desired family size and time to have children, to using contraceptive methods.

In this round, husbands participation was measured by frequency of conversation between husband and wife on number of children and contraceptive methods. It was derived from the question, "Had you ever talked to your husband about number of children or contraceptive methods? If yes, how often?".

More than two-fifths of women reported that they had talked to their husbands on either the number of children or contraception or both (see Table 7.7). Of those women who had talked to their husbands, half of them talked about both topics, two-thirds talked only about the number of children and the rest (one-tenth) talked only about contraception. Nevertheless, they seldom talked about these topics. There was only one-third that talked often.

Table 7.7 Percentage distribution of currently married women by topic discussed with husbands and strata

Nature of communication	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Number of children only	17.3	15.6	12.5	17.2	15.9	16.0
Contraceptive method only	5.0	2.4	2.7	6.1	2.9	4.1
Both topics	23.2	20.0	20.6	22.0	19.5	21.2
Never talk	54.5	62.0	64.2	54.6	61.7	58.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Husbands participation varied amongst strata. Husband participation was highest in urban/semi-urban and uplands areas, followed by mixed economy and rice cultivation areas. The lowest level of participation was in plantation areas (see Table 7.7). However, the patterns of husband participation were similar in all areas. Of those who discussed these topics, the majority discussed both topics, quite a portion talked only about the number of children, and only a few would talked only about contraceptive methods.

7.4 Summary

Fertility had gradually declined in the last three years. The decline occurred in all strata. Fertility was low in all strata except the uplands area. The fertility in the uplands area was twice that of the mixed economy area, which had the lowest fertility.

The fertility pattern in uplands areas was quite distinctive from other areas. uplands women tended to have children faster and stop having children later. Nevertheless, timing of having additional children was similar in all strata. There

were only one-fifth of women who wanted more children who would like to have them within one year.

Contraceptive prevalence rates increased in all strata. Female sterilization was still the most popular contraceptive method, except in the uplands area where the pill was the most popular method. Other popular contraceptive methods were the oral pill and the injectable. These three methods combined comprised nine-tenths of all current users.

Public outlets were the most important sources of family planning. More than three-fourths of current users received contraception from public outlets. Public hospitals were the most popular outlet, followed by public health centers. However, maternal and child health centers provided services to only a few women.

Drugstores were also popular sources amongst private outlets, especially in urban areas. For rural areas, public health centers were as popular as public hospitals.

Husbands participation in family planning was moderate. The majority discussed the number of children and contraception, but the frequency of discussion was low. Only one-third reported frequent discussion.

8. Health Behaviour

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Pattama Wapatthanapong,
Sirinan Kittisuksathit

A person's health-related behaviour and his/her health care and status are closely related. In Round 3 (2003) of the Kanchanaburi Project, questions related to health behaviour were included, i.e. consumption of food, drinking water, alcohol and drug, exercising, sleeping, oral care, and access to the "30 Baht Health Scheme for All" service. Some of these questions had been asked every year since the first round census in 2000.

8.1 Food consumption

In their daily life, more than 90 percent of the population in the study areas eat 3 main meals, 94 percent have breakfast, 93 percent have lunch and 98 percent have dinner. Besides these 3 meals, 6 percent of the population reported that they have a regular supper or meal late at night.

Nine percent of the population in urban/semi-urban strata do not eat breakfast, which is the highest reported for any strata. Eleven percent of the population in the uplands strata do not eat lunch, while the highest proportion reporting eating supper is found in the urban/semi-urban strata (see Table 8.1).

Table 8.1 Percentage distribution of consumption of meals by strata, Round 3 (2002)

Meal	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Breakfast					
Eat	89.6	94.1	95.4	94.9	94.4
Not eat	8.5	3.6	3.5	4.2	4.7
Lunch					
Eat	92.8	96.4	97.3	86.9	95.8
Not eat	4.4	1.7	1.7	10.5	3.1
Dinner					
Eat	96.2	97.8	98.9	98.9	98.0
Not eat	2.2	0.9	0.6	0.7	1.2
Supper					
Eat	9.0	5.2	5.2	3.5	6.1
Not eat	80.3	85.8	89.2	90.8	87.8
Number	**6,001**	**4,811**	**4,522**	**7,310**	**6,255**

Note: The total percentage is less than 100 because the items "Uncertain" and "Not know, not answer" are not included.

The main reasons given by the people who do not eat main meals are "not hungry", "have no time", and "on diet" are shown in Table 8.2.

Table 8.2 Percentage distribution of reasons for not eating main meals by strata, Round 3 (2002)

Reasons for not having the meal	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Breakfast					
Not hungry	48.3	48.5	55.1	62.7	54.2
No time/rush	33.8	42.6	41.1	21.5	36.9
Others	17.9	8.9	3.8	15.8	8.8
Lunch					
Not hungry	67.6	73.4	79.7	84.2	72.5
No time/rush	11.7	16.5	9.5	4.6	19.7
Others	20.7	10.1	10.8	11.1	7.8
Dinner					
Not hungry	61.8	44.4	56.0	64.7	50.7
On diet	22.1	28.9	32.0	23.5	29.3
Others	16.0	26.7	12.0	11.8	20.0

The population in the study areas mainly eat food cooked by themselves. Only a small proportion eat food that is purchase. When classified by area, it is found that the population in urban/semi-urban has the lowest proportion of eating own-cooked food. For each meal, more than 90 percent of the population in rice, plantation, uplands, and mixed economy areas eat food they prepared, compared to only 60 to 73 percent of those in urban/semi-urban areas. People in the urban/semi-urban areas are least likely to prepare lunch compared to the other main meals. This may be due to the availability of food shops and markets and the busy schedules of people in the urban/semi-urban areas (see Table 8.3).

Table 8.3 Percentage distribution of characteristics of food eaten in each meal by strata, Round 3 (2002)

Characteristics of food	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Breakfast					
Own-cooked	70.5	94.9	97.5	97.1	90.5
Bought	18.9	3.1	1.7	2.4	5.6
Own-cooked and bought	10.6	2.0	0.8	0.5	3.9
Lunch					
Own-cooked	59.6	90.3	94.6	96.3	84.6
Bought	28.7	7.3	4.5	2.7	11.2
Own-cooked and bought	11.7	2.4	0.9	1.0	4.2
Dinner					
Own-cooked	72.8	95.8	97.5	98.8	91.0
Bought	12.8	2.1	1.2	0.6	2.8
Own-cooked and bought	14.4	2.1	1.3	0.6	6.2

The proportion of respondents saying that they regularly eat strongly spiced food was higher in Round 3 (2002) than in Round 2 (2001) in every area. More than 40 per cent of the population in each area eat heavily spiced food (see Table 8.4).

The habit of eating raw meat is still found in all areas, though in very low proportions (2 – 7 percent). When comparing the results of Round 2 (2001) and 3 (2002), it is found that the proportions of people eating raw meat are slightly higher in every study area (see Table 8.5).

Table 8.4 Percentage distribution of population regularly eating highly spiced food by strata, Round 2 (2001) and Round 3 (2002)

Census round	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed economy
Round 2 (2001)	36.7	45.6	46.7	43.2	43.0
Round 3 (2002)	42.0	48.8	48.1	51.5	45.5

Table 8.5 Percentage distribution of population regularly eating raw meat by strata, Round 2 (2001) and Round 3 (2002)

Census round	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed economy
Round 2 (2001)	1.6	2.8	3.3	2.7	3.3
Round 3 (2002)	2.1	2.9	4.9	6.9	3.1

In Round 3, the hypothesis that eating behaviour results from modernization is also investigated. Questions on regular eating of fast food, so-called “junk food”, health supplements and vitamins were asked. It is found that the population in the urban/semi-urban area have a higher proportions eating these foods in every category, except junk food (see Table 8.6).

Table 8.6 Percentage distribution of population regularly eating fast food, junk food, health supplementary and vitamins by strata, Round 3 (2002)

Type of food	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Fast-food	4.5	1.9	1.5	1.3	1.8
Junk food	21.7	22.8	20.9	18.3	16.5
Supplementary	4.9	1.1	0.9	1.2	2.1
Vitamins	5.3	3.2	1.8	2.6	2.5

8.2 Drinking water

In Round 3 (2002) questions concerning type of drinking water and the means of water treatment are asked. Differentials among study areas are found, especially with respect to the source of drinking water (see Table 8.7).

The three main sources of drinking water of the population in urban/semi-urban area are bottled water (59 percent), tap water (29 percent) and underground water (13 percent). The population in "rice area" rely on two main sources, namely rainwater (79 percent) and tap water (17 percent). Ninety percent of the population in the plantation area drink rainwater, while only 5 percent drink tap or bottled water.

As in other non-urban areas, the upland population relies mainly on rainwater for drinking. Besides rainwater, the population in this area also drink water from other sources such as from rivers, and mountain water-supply.

The population in the mixed economy area has more variety of drinking water than other areas. They drink rainwater (54 percent), bottled water (23 percent), tap water (17 percent) and underground water (13 percent)

Table 8.7 Percentage distribution of population drinking water from various sources by strata, Round 3 (2002)

Drinking water	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Rainwater	5.4	78.7	89.8	73.5	53.8
Tap water	28.6	16.5	4.9	16.2	16.9
Well	0.5	2.0	2.9	4.2	0.9
Underground water	12.7	3.6	1.9	0.9	12.9
Bottled water	59.2	6.5	5.0	4.3	22.6
Others	0.7	0.1	1.2	17.4	1.1

8.3 Exercise

Regular exercise contributes to in good health. It is found from Round 3 (2002) that 16 percent of the population aged 15 years and over in Kanchanaburi Project undertake regular exercise.

When classified by strata, the population in the urban/semi-urban area have the highest proportion exercising (26 percent). The population in the mixed economy area are ranked second (15 percent). The lowest proportion is among the population in plantation areas (12 percent). Among the population in all strata, males exercise more than do females, with a ratio of 1.8 males to 1 female (Table 8.8).

When breaking down the exercising population by age, it is found that males and females have the highest proportion exercising in the 15 – 19 age group. The higher the age the lower the proportion exercising (see Figure 8.1).

The types of exercise performed most area can be ranked as follows: sport, jogging and aerobic dance (see Table 8.9).

Table 8.8 Regular exercises of population by strata, Round 3 (2002)

Exercise	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Total population	6,001	4,811	4,522	7,310	6,255
Number of exercisers	1,530	707	561	990	956
Percent of exercisers	25.5	14.7	12.4	13.5	15.3
Ratio male to female exercise	1.3 : 1	1.8 : 1	2.8 : 1	2.2 : 1	1.8 : 1

Table 8.9 Percentage distribution of types of exercise by strata, Round 3 (2002)

Types of exercise	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Jogging	25.6	21.6	18.0	19.3	24.7
Fast-walking	6.5	1.0	0.9	4.3	3.9
Aerobic dance	8.6	2.1	1.4	1.8	2.5
Martial art	0.3	0.0	0.0	0.3	0.3
Sport	45.2	59.5	73.3	65.5	55.5
Body exercise	21.0	13.4	9.3	14.4	16.3
Others	2.7	6.9	1.1	2.9	2.4

Note: Since each person can do exercise of more than one type, the percentage in each strata does not necessary sum up to be 100.

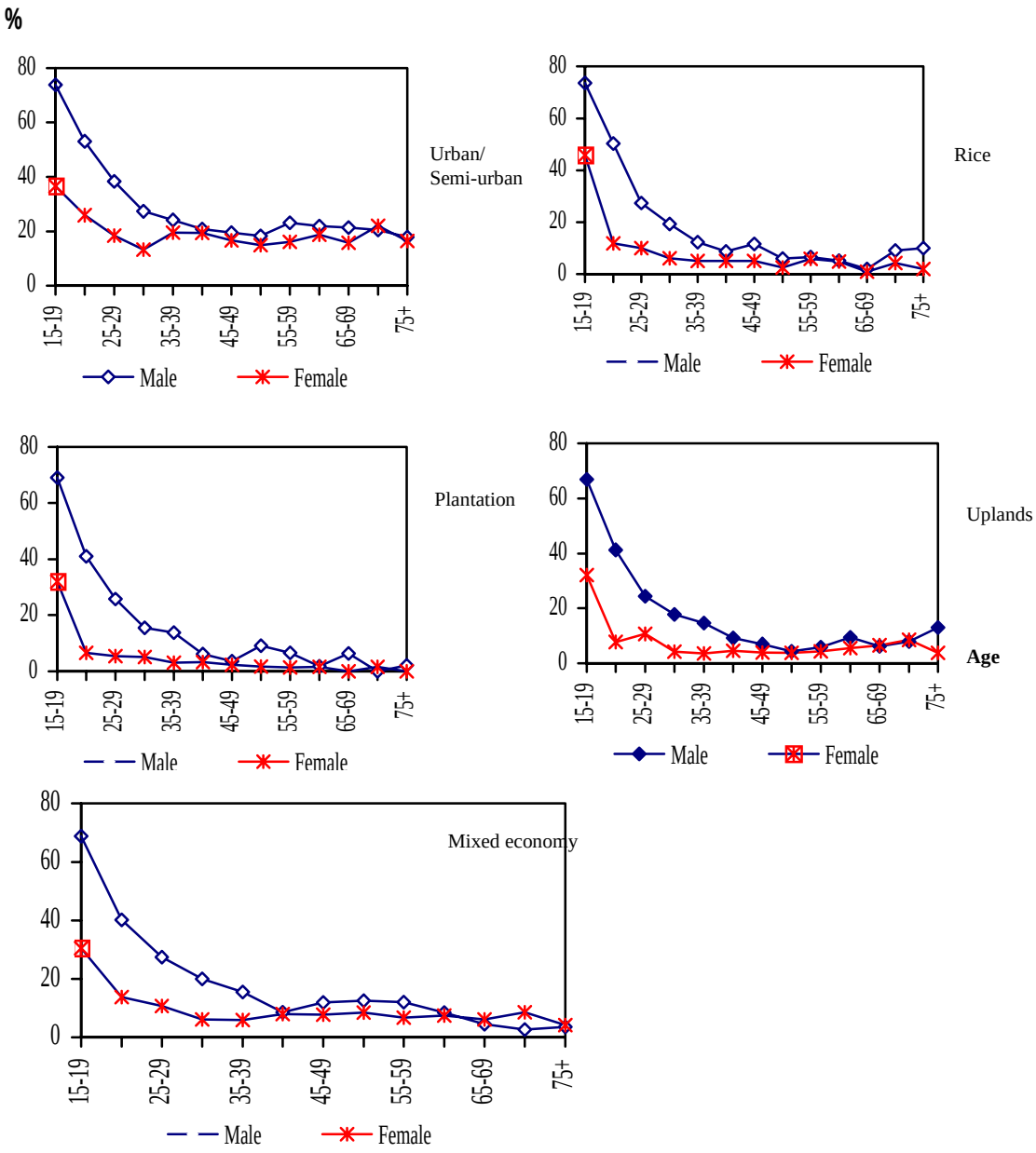


Figure 8.1 Proportion of population who exercise, by strata, age and sex, Round 3 (2002)

The places where people exercise are mainly the space inside or by their houses and open spaces in the neighborhood such as school or temple. Some people go to public parks, sport fields and community centers (see Table 8.10).

Table 8.10 Percentage distribution of places for exercise by strata, Round 3 (2002)

Place for exercise	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Inside/by the house	42.9	100.0	67.4	73.0	69.3
Public park	0.0	0.0	0.0	5.4	6.3
Community center	0.0	0.0	0.0	0.0	1.0
Open space in the neighborhood	57.1	0.0	27.9	16.2	18.2
Village sport field	0.0	0.0	4.7	5.4	0.5
Total	100.0	100.0	100.0	100.0	100.0

8.4 Sleeping patterns

In Round 3 (2002), it is found that about half of the population in the study areas (56 percent), spend on average 8 – 10 hours per day sleeping. About one-fourth of the population, or 26 percent, spend 6 – 8 hours per day sleeping, 15 percent spend 10 – 13 hours sleeping. The people who sleep less than 6 hours a day account for 3 percent, and those who sleep more than 12 hours are only 1 percent (see Figure 8.2).

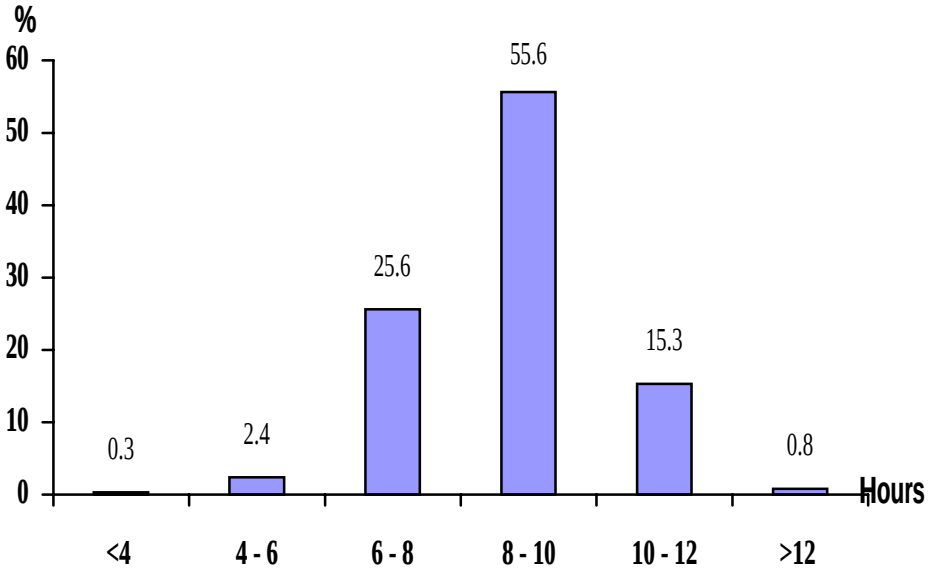


Figure 8.2 Percentage distribution of population in the study areas by number of hours of sleep per day, Round 3 (2002)

More than 90 percent of the population in the study areas use mosquito nets when sleeping. When compared to the data of Round 2 (2001), the proportion of population using mosquito net increased slightly in every area, except for the urban/semi-urban area (see Table 8.11).

Table 8.11 Percentage distribution of population sleeping under a net by strata, Round 2 (2001) and Round 3 (2002)

Census Round	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Round 2 (2001)	92.5	95.3	95.4	95.5	94.2
Round 3 (2002)	91.7	97.6	97.1	97.0	96.0

8.5 Dental health

Round 3 (2002) also includes questions on oral care such as brushing teeth, visiting dentists and tooth and gum problems.

Behaviour on brushing teeth is categorized into 4 groups.

1) *Brushing twice a day* after waking up in the morning and before going to bed or after dinner
2) *Brushing once a day* after waking up in the morning
3) *Brushing twice a day* before going to bed or after dinner
4) *No brushing at all*

It is found that 69 percent of the population in the study areas brush their teeth twice a day, 23 percent brush once in the morning, and 1 percent in the evening. The 7 percent who do not brush at all are mainly those using artificial teeth (see Figure 8.3).

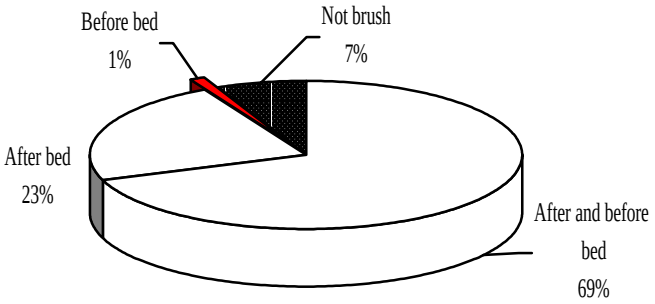


Figure 8.3 Percentage distribution of population by their behaviour of brushing teeth, Round 3 (2002)

During the previous year (July 1st 2001 to June 30th 2002), 21 percent of the population visited a dentist. The highest proportion (27 percent) was for those residing in urban/semi-urban area, while the lowest was for the uplands population of only 15 percent (see Figure 8.4).

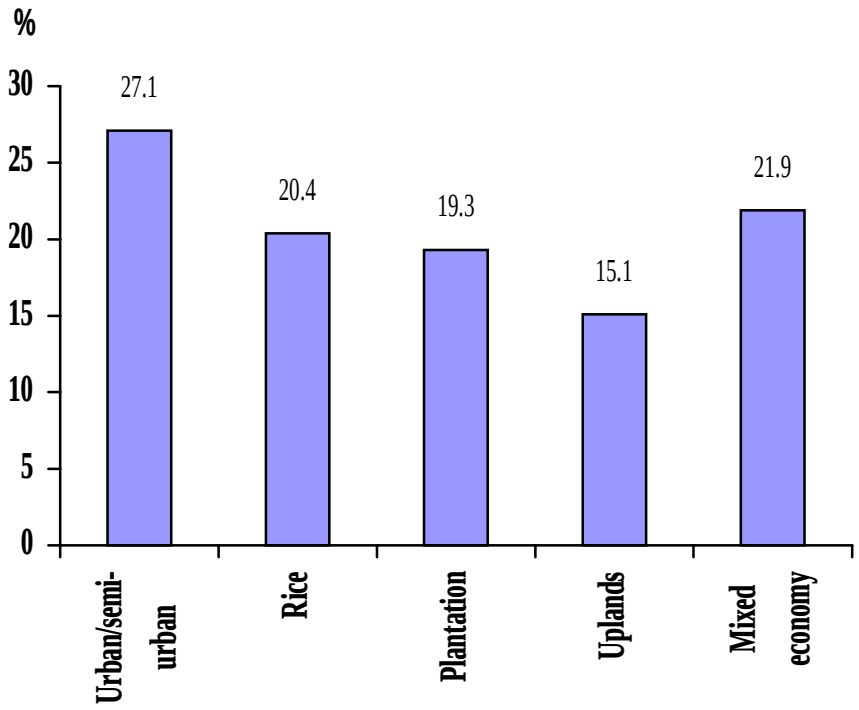


Figure 8.4 Percentage distribution of population who visited a dentist during the past year by strata, Round 3 (2002)

The reasons for visiting dentists are in the following order; to have a tooth extracted, to have a tooth filled, to have fluorite cleaning, to have a tooth checked (see Table 8.12)

It is found that caries is ranked the main problem. More than 60 percent of population in every strata reported a problem of caries. Other significant dental problems are toothache, sensitivity, and gingivitis (see Table 8.13).

Table 8.12 Percentage distribution of reasons for visit dentist by strata, Round 3 (2002)

Reasons to visit dentist	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
To have a tooth extracted	59.4	63.0	56.1	57.8	53.8
To have a tooth filled	14.4	13.0	13.8	17.1	16.6
To have a fluorite cleaning	15.1	13.5	18.9	14.0	16.5
To have a tooth checked	6.6	6.2	5.8	4.6	6.5
Others	4.5	4.2	5.3	6.4	6.6

Table 8.13 Percentage distribution of population having dental problems by strata, Round 3 (2002)

Dental problems	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Toothache	41.7	48.6	51.7	47.7	52.3
Sensitivity	42.1	44.4	46.4	42.3	47.5
Caries	65.3	69.9	68.6	62.3	69.0
Gingivitis	45.9	40.0	37.0	46.9	36.1
Chewing problem	13.0	14.5	7.1	14.2	10.7
Dental accident	3.0	1.9	0.9	3.9	1.8
Others	0.2	0.1	0.3	0.2	0.3

8.6 Access to the "30 Baht Health Scheme for all" project

The "30 Baht Health Scheme for all" project is the implementation of a government welfare policy. Theoretically, every Thai citizen has the right to receive health care services from the government. The person who has this right will get "a gold card" and has to pay only 30 Baht for any medical service. This project was extended to cover the whole country in 2002.

Round 3 (2002) reveals that 60 – 80 percent of the population in the study areas have received the gold cards. The population in the plantation areas have the highest proportion, 84 per cent, with gold cards, while those in the urban areas constitute the lowest at 61 percent (see Table 8.14).

For those who have gold cards, about half the rice, plantation, uplands and mixed economy area have used them for receiving health services. Only one-third of the population in the urban/semi-urban strata have used the gold cards (see Figure 8.5)

Table 8.14 Percentage distribution of population receiving gold card by strata, Round 3 (2002)

Receiving "gold card"	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Received	61.4	79.0	83.7	72.1	75.5
Not received	38.6	21.0	16.3	27.9	24.5
Total	100.0	100.0	100.0	100.0	100.0

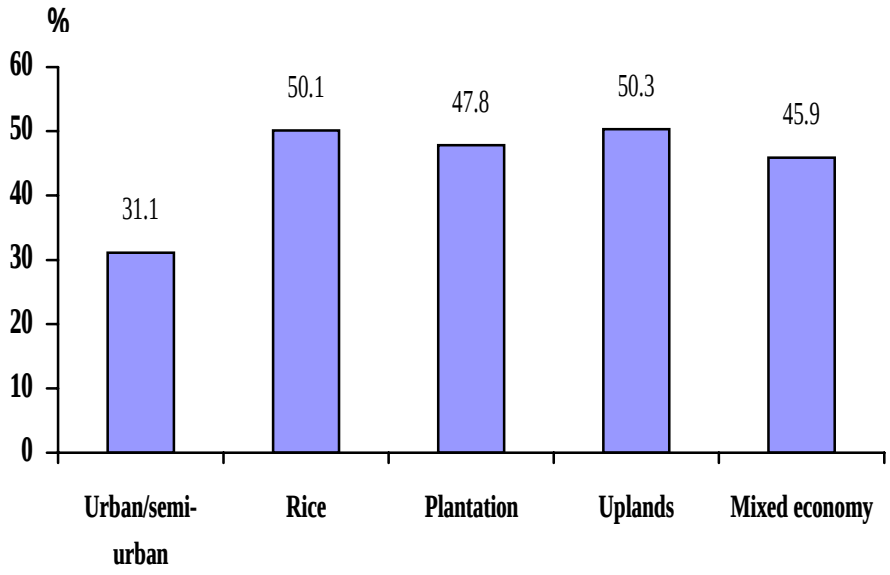


Figure 8.5 Percentage distribution using the gold card for medical service by strata, Round 3 (2002)

"Not sick" is the main reason of not using the gold cards, which accounts for more than 70 percent in every study stratum. The urban/semi-urban area has the lowest proportion of gold card use (see Table 8.15).

Table 8.15 Percentage distribution of reasons for not using gold card by strata, Round 3 (2002)

Reasons not using golden card	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Not sick	72.9	87.8	84.0	89.7	76.5
Having other card	12.0	4.9	3.9	2.4	7.2
Not residing here	3.2	0.7	3.0	3.4	2.9
Others	11.9	6.7	9.1	4.4	13.4
Total	100.0	100.0	100.0	100.0	100.0

8.7 Consumption behavior affecting health status

Round 3 (2002) explored consumption behavior that could affect the health status of the study population. Consumption behavior covered smoking, drinking behavior such as consumption of alcohol, beer, herbal liquor, energy beverages, and canned coffee beverages, and use of pain relievers. Frequency of consumption and high risk consumption behavior are examined in this section (see Table 8.16).

8.7.1 Smoking

The highest rate of smoking was among the upland population (48 percent) and the lowest rate was among the urban/semi-urban strata (20 percent). Among smokers, most smoked cigarettes on a daily basis, with those in the upland strata smoked most frequently (48 percent).

8.7.2 Beer

More than two thirds of the population in all strata reported that they did not drink beer during the previous year. The highest rate of often or daily consumption was among people living in the urban/semi-urban strata (10 percent).

8.7.3 Alcohol

One third of respondents in all strata did not drink liquor during the previous year. Of those who drank spirits, people living in the uplands strata were the most likely to infrequently drink (24 percent), while the rate of often or daily consumption of liquor is similar among all strata, with 11 percent of people living in the mixed economy and urban/semi-urban strata reporting that they frequently drank spirits, while 10 percent of people living in the plantation and rice strata reported frequent consumption of spirits.

8.7.4 Herbal liquor

Except for the uplands strata, in each strata more that 90 percent of people reported they did not drink herbal liquor. About 3 percent of people living in the uplands and mixed economic strata reported they often or daily drank this kind of liquor.

8.7.5 Energy drinks/energy beverages

More than 80 percent of the population reported that they did not consume energy beverages, which typically contain high level of caffeine, during the previous year. Persons living in the uplands strata were the most likely to infrequently

consume energy drinks (15 percent), while those living in the plantation areas were the least likely to consume these drinks (7 percent). People living in urban/semi-urban had the highest rate of often or daily drinking energy beverages (9 percent).

8.7.6 Pain relievers

The majority of the population reported that they did not consume pain relievers during the previous year. However, among those who reported consumption of pain relievers, it was found that the percentage reporting frequent (often/daily) and infrequent use was similar. The highest frequency of use was for persons living in the urban/semi-urban, mixed economic and rice strata (3 percent).

8.7.7 Canned coffee beverages

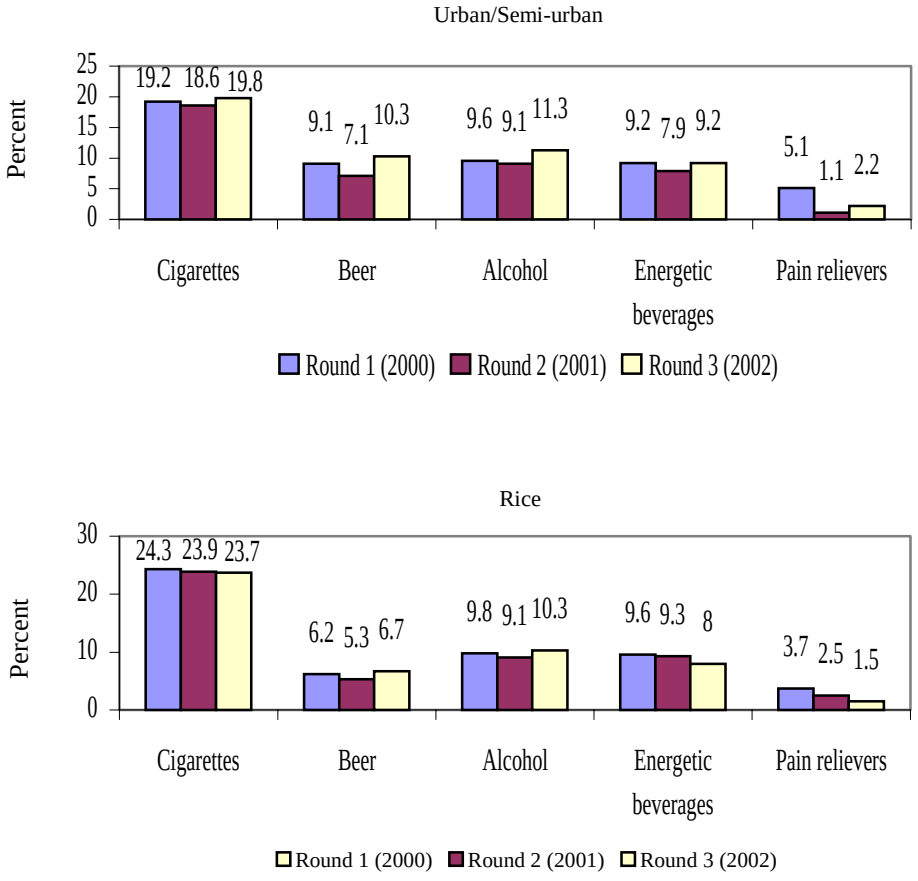
The majority of the population in all strata reported that they did not drink canned coffee during the previous year. Among those who reported they drank canned coffee, it was found that the percentage reporting frequent (often/daily) consumption was lower than the percentage reporting infrequent consumption. The highest frequency of consumption was for persons living in the rice strata.

Table 8.16 Percentage distribution health risk consumption behavior by strata, Round 3 (2002)

Consumption behavior	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
Cigarettes					
Never	78.9	75.0	71.4	50.8	72.9
Infrequently	1.3	1.3	1.5	1.5	1.6
Frequently	19.8	23.7	27.1	47.7	25.5
Beer					
Never	71.2	67.2	70.0	67.4	72.5
Infrequently	18.5	26.1	24.0	28.1	20.2
Frequently	10.3	6.7	5.9	4.4	7.3
Alcohol					
Never	74.1	72.8	70.4	66.4	73.2
Infrequently	14.6	16.9	18.7	23.5	15.8
Frequently	11.3	10.3	10.9	10.1	10.9
Liquor					
Never	94.0	92.2	92.9	85.7	91.3
Infrequently	3.5	5.7	5.2	10.9	5.6
Frequently	2.5	2.0	1.9	3.4	3.0
Energy beverages					
Never	82.5	81.8	87.0	80.8	86.0
Infrequently	8.3	10.2	7.2	14.8	7.5
Frequently	9.2	8.0	5.8	4.4	6.5
Pain relievers (addictive substance)					
Never	96.5	97.4	98.3	98.0	96.8
Infrequently	1.3	1.1	0.5	0.3	1.3
Frequently	2.2	1.5	1.3	1.7	1.8
Canned coffee drinks					
Never	90.8	88.8	92.58	93.0	93.4
Infrequently	5.0	6.7	4.2	4.9	3.9
Frequently	4.3	4.5	3.0	2.0	2.7

8.8 Comparison of consumption behaviour between Round 1 (2000) - Round 3 (2002)

On almost all indicators of consumption behavior there were slight decreases in levels of consumption when comparing Round 1 (2000) and Round 2 (2001) and a slight increase from Round 2 (2001) to Round 3 (2002). From Figure 8.6, the following patterns are evident:



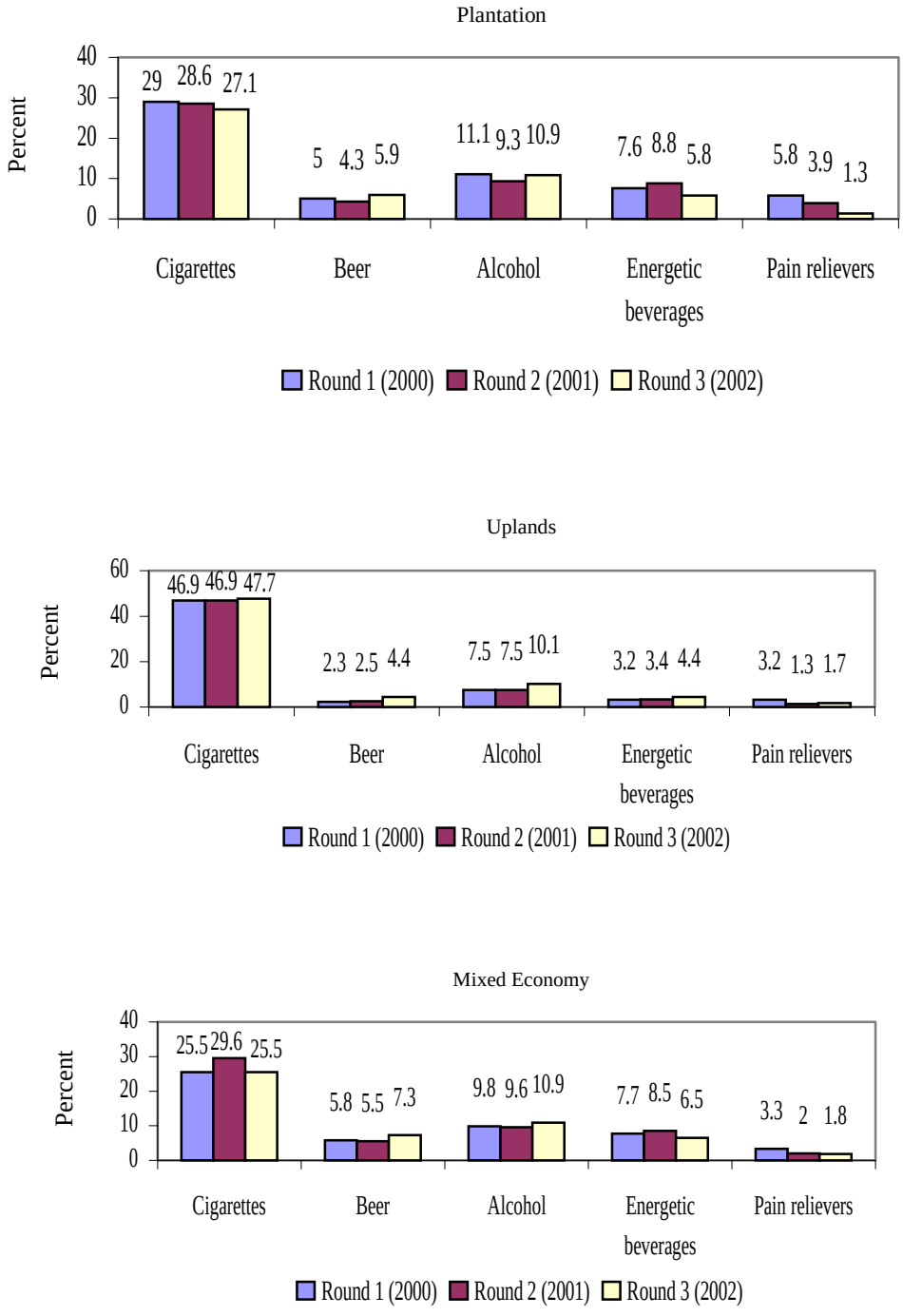


Figure 8.6 Percent of respondents consuming specified substances in previous year, Round 1 (2000) - Round 3 (2002)

For cigarettes, the percentage frequently smoking decreased except for the mixed economy strata, where there was an increase from 26 percent to 30 percent. Between Round 2 (2001) and Round 3 (2002) there was a slight increase in consumption for persons living in the urban/semi-urban and uplands strata (1 percent only in both areas).

The percent of drinking beer decreased in all strata except the uplands strata, where there was a slight increase between Round 1 (2000) and Round 2 (2001). In Round 3 (2002), the percent drinking beer increased in all strata, especially among people living in urban/semi-urban areas where the level rose from 7 percent in Round 2 (2001) to 10 percent in Round 3 (2002). Between Round 1 (2000) and Round 2 (2001) the percent frequently drinking alcohol decreased, with increases in all strata between Round 2 and Round 3 (2002).

There were only very small changes from Round 1 (2000) to Round 2 (2001) in the percent consuming energy drinks, with an increase from 8 percent to 9 percent in the plantation and the mixed economy strata and small decreases in the urban/semi-urban and the rice strata. When comparing Round 1 (2001) Round 2 (2002), it was found that the frequency of consumption of energy drinks continued to decrease slightly, except for those living in uplands strata who reported an increasing rate in consuming energy drinks.

The percent consuming pain relievers decreased in all study areas, especially for the urban/semi-urban strata, which reported a decrease from 5 percent in Round 1 (2000) to 1 percent in Round 2 (2001). Between Round 2 (2001) to Round 3 (2002), it was found that people living in all strata, except the urban/semi-urban and uplands strata, reported decreased levels of use of pain relievers.

8.9 Summary

The population in the study areas have positive health behaviour in general. On the average, more than 90 percent of the population eat 3 main meals a day. The food is prepared by themselves. However, a small proportion of the population, especially those in the urban/semi-urban area eat purchased food.

Almost half of the population in the study areas prefer highly spiced food. About 2 – 7 percent of the population still eat raw meat. About 20 percent of the population consume junk food. The main sources of drinking water are rainwater, tap water, and bottled water.

It is found that only 16 percent of population aged 15 years and over regularly exercise. More males than females exercise. The population in the 15 – 19 year age-group have the highest proportion of regular exercisers. The proportions reduce as age increases.

The most popular exercise is sport, followed by jogging and body exercise. The places of exercise are inside or by the house and open space in their neighborhood. More than half of the population spend 8 – 10 hours sleeping per day. More than 90 percent of the population sleep under mosquito nets.

Almost 100 percent of respondents brush their teeth twice a day, in the morning and before going to bed. The most common dental problem is tooth decay. About one-fifth of the population visited dentists during the past year. The reasons for visiting were to have a tooth extracted, filling and fluorite cleaning.

For the “30 Baht Health Scheme for all” project, it is found that only 60 – 80 percent of population in the study areas have received gold cards. About half of those who have gold cards have used them. The main reason of non use of the gold card is “not sick”.

Whereas the highest frequency of smoking was for persons living in the upland strata, persons living in urban/semi-urban strata had the highest frequency of drinking beer. The level and pattern of drinking alcohol and herbal liquor were not different among strata. The highest frequency of consumption of energy drinks and pain relievers was among people living in the urban/semi-urban strata. The highest frequency of consumption of canned coffee was among people living in the rice strata.

The comparison of risk consumption behavior in Round 1 (2000), Round 2 (2001) and Round 3 (2002) showed that smoking, drinking beer and liquor, energy drink consumption, and using pain relievers slightly decreased in all strata between Round 1 (2000) to Round 2 (2001) and increased from Round 2 (2001) to Round 3 (2002).

9. Mortality

Pramote Prasartkul, Pattama Wapatthanapong

General information

In Round 3 (2002), there were 12,680 enumerated households. Two hundred and forty-nine of these households had at least one member who died during the 12-month period prior to the census (July 1st, 2001 – June 30th, 2002). Of this total, 241 households had one member die, while two deaths were recorded in each of 8 households. There were no more than two deaths per household. Thus, the total number of deaths was 257 compared to 421 for Round 1 (2000) and 267 for Round 2 (2001).

9.1 Mortality levels and patterns

For the 257 deaths in the 12-month period prior to the census, 150 (58 percent) were males and 107 (42 percent) were females. The male death rate was 7 per thousand while the female death rate was 5 per thousand. For both sexes combined, the crude death rate was 6 per thousand.

Comparing the mortality rate for Round 3 (2002) with the rate for Round 1 (2000) and Round 2 (2001), it was found that the mortality rate for Round 3 (2002) was close to that for Round 2 (2001) but significantly lower than that for Round 1 (2000) (see Table 9.1).

Table 9.1 Number of deaths and death rates, Round 1 (2000) – Round 3 (2002)

Sex	Round 1 (2000)		Round 2 (2001)		Round 3 (2002)	
	Number of Deaths	Death Rate (per'1000)	Number of Deaths	Death Rate (per'1000)	Number of Deaths	Death Rate (per'1000)
Male	256	13	170	8	150	7
Female	165	7	96	4	107	5
Total	**421**	**10**	**267**	**5**	**257**	**6**

The mortality pattern, as indicated by age-sex specific death rates, was similar to that found in both Round 1 (2000) and Round 2 (2001), as well as in the general population of Thailand. For Round 3 (2002), 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. Thereafter mortality gradually increased. The increases occurred more rapidly after age 55 for males and 70 for females.

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, the mortality rate of females aged 90 year and over was higher than for males (see Table 9.2 and Figure 9.1).

Table 9.2 Population, number of deaths and death rates by age and sex, Round 3 (2002)

Age	Population		Number of Deaths		Death Rate (per thousand)	
	Male	Female	Male	Female	Male	Female
0	364	328	1	2	2.8	6.1
1-4	1,767	1,636	5	1	2.8	0.6
5-9	2,464	2,288	4	2	1.6	0.9
10-14	2,295	2,267	1	0	0.4	0.0
15-19	1,511	1,587	1	1	0.7	0.6
20-24	1,264	1,395	4	2	1.4	2.3
25-29	1,606	1,915	5	10	5.2	4.3
30-34	1,691	1,925	8	7	4.7	3.6
35-39	1,715	1,933	11	5	6.4	2.6
40-44	1,616	1,894	13	4	8.0	2.1
45-49	1,397	1,595	11	7	7.9	4.4
50-54	1,107	1,209	4	8	3.6	6.6
55-59	769	902	10	5	13.0	5.5
60-64	713	805	9	4	12.6	5.0
65-69	533	609	17	6	31.9	9.9
70-74	417	460	13	13	31.2	28.3
75-79	260	296	6	7	23.1	23.7
80-84	88	184	14	6	159.1	32.6
85-89	61	90	8	6	131.2	66.7
90+	24	39	4	11	166.7	282.1
Unknown	11	13	1	0	–	–
Total	**21,673**	**23,370**	**150**	**107**	**6.9**	**4.6**
	45,043		**257**		**5.7**	

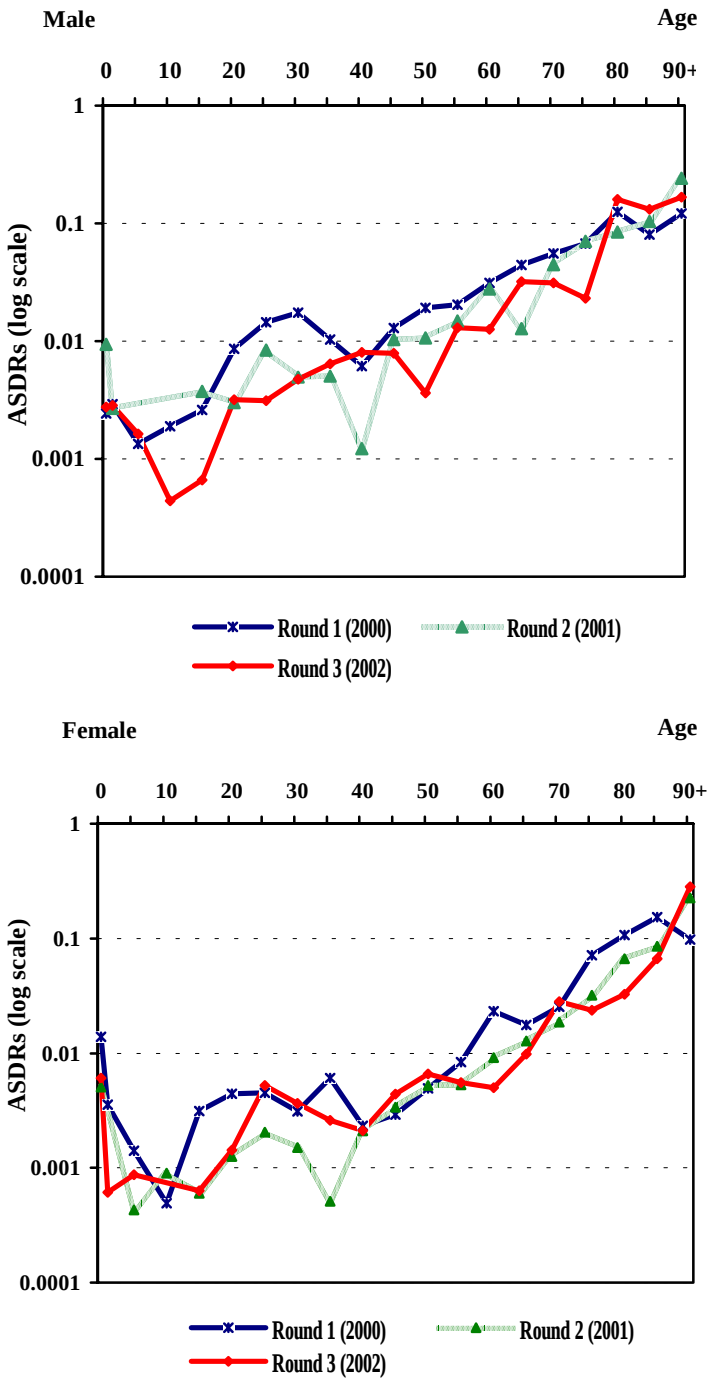


Figure 9.1 Age-sex specific death rates, Round 1 (2000) - Round 3 (2002)

9.2 Mortality by strata

Classifying by strata within the study area revealed two different mortality levels. The mortality rates for urban/semi-urban, plantation, uplands and mixed economy strata were about 5 per thousand while the mortality rate for the rice strata was 8 per thousand. It is seen that mortality rate for the rice strata was clearly higher than the other four strata.

When comparing with Round 2 (2001), mortality rates of urban/semi-urban, rice and mixed economy strata for the Round 3 (2002) decreased while mortality rates for plantation and uplands strata increased.

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 (see Figure 9.2 and Table 9.3).

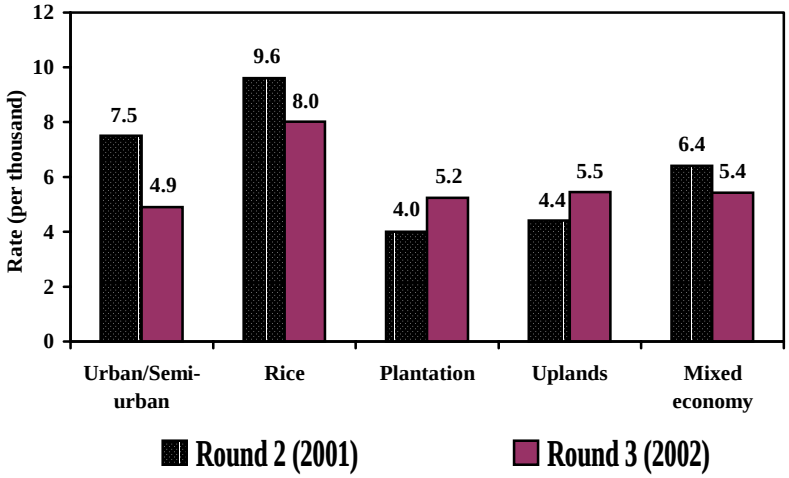


Figure 9.2 Death rates by strata, Round 2 (2001) and Round 3 (2002)

Table 9.3 Age-sex specific death rates (per thousand) by strata, Round 3 (2002)

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	6.9	154.8	0.0	0.0
1-4	0.0	0.0	3.9	3.9	0.0	0.0	4.9	0.0	3.2	0.0
5-9	0.0	2.6	2.8	0.0	0.0	0.0	2.5	1.4	2.1	0.0
10-14	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
15-19	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	3.1
20-24	6.5	0.0	5.5	0.0	5.1	0.0	0.0	5.1	0.0	0.0
25-29	0.0	7.3	12.8	3.4	0.0	3.5	4.7	5.8	0.0	4.9
30-34	8.5	0.0	12.7	3.3	0.0	7.1	4.1	3.8	0.0	5.0
35-39	0.0	0.0	15.0	0.0	10.9	3.3	2.1	4.3	8.9	5.2
40-44	8.4	0.0	7.9	6.4	12.2	0.0	2.2	4.5	12.9	0.0
45-49	3.5	0.0	10.0	4.0	9.8	4.5	10.0	13.1	6.5	0.0
50-54	0.0	14.5	0.0	0.0	12.4	10.8	7.3	4.0	0.0	3.4
55-59	18.5	5.0	0.0	6.3	20.4	0.0	15.1	10.4	9.5	4.9
60-64	13.5	5.5	16.3	0.0	24.8	0.0	5.5	12.7	7.3	6.0
65-69	52.1	0.0	27.5	18.0	11.6	0.0	16.4	23.6	50.0	7.4
70-74	46.0	10.6	21.5	30.9	0.0	60.6	28.6	33.7	48.2	17.5
75-79	0.0	0.0	51.7	51.7	57.1	24.4	0.0	20.4	17.9	34.5
80-84	300.0	43.5	100.0	39.2	153.9	0.0	250.0	0.0	43.5	50.0
85-89	58.8	45.5	125.0	38.5	400.0	83.3	750.0	0.0	0.0	187.5
90+	0.0	166.7	34.9	61.0	0.0	0.0	0.0	400.0	400.0	285.7
Crude death rate	**6.8**	**3.2**	**10.4**	**5.9**	**6.9**	**3.7**	**5.5**	**5.4**	**6.4**	**4.5**
	4.9		**8.0**		**5.2**		**5.5**		**5.4**	

The sex differential of mortality for Round 3 (2002) was not different from the two previous rounds, with male mortality higher than that of females in every stratum (see Figure 9.3).

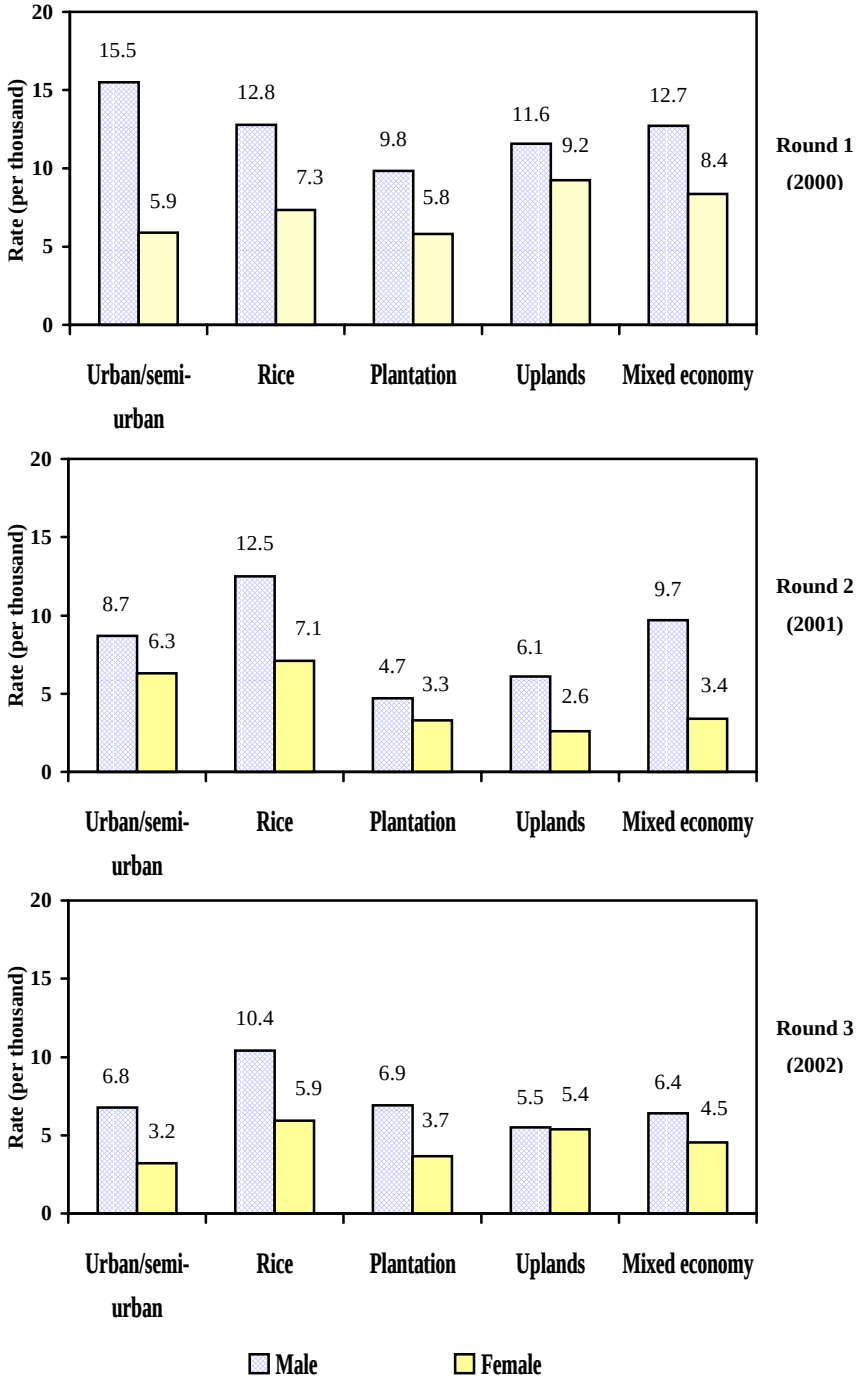


Figure 9.3 Death rates (per thousand) by sex and strata, Round 1 (2000) – Round 3 (2002)

9.3 Cause of death

For Round 3 (2002), seven major causes of deaths were included in the questionnaire. These causes were sickness from non-infectious disease, sickness from infectious disease, accident, homicide, suicide, senility, and others.

According to the seven major groups of causes of death, sickness from non-infectious disease was the major cause among the 257 deaths that occurred within the one year before the Round 3 (2002) census. About half of all deaths, or 48 percent, occurred due to non-infectious disease (53 percent). The second cause was senility (22 percent). Deaths caused by infectious disease accounted for the third rank of causes of deaths (14 percent). The fourth main cause was accident (10 percent). Deaths caused by homicide and suicide were only 1 percent of all deaths (see Figure 9.4).

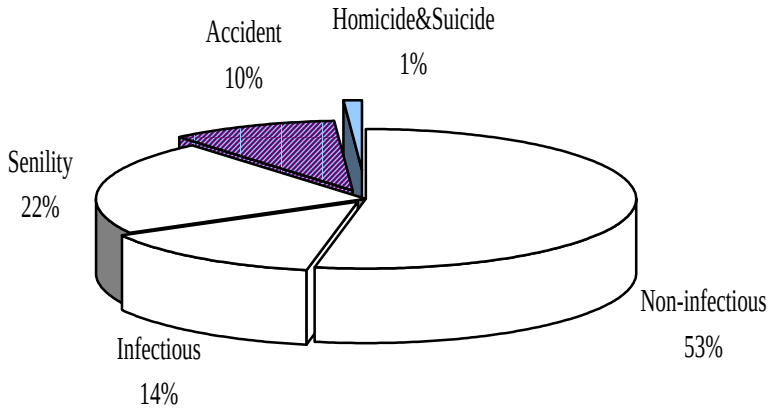


Figure 9.4 Percentage distribution of deaths by cause of death, Round 3 (2002)

Analysis of causes of death by strata showed a similar first cause of deaths to each strata but some different patterns of other causes of deaths (see Table 9.4).

In order to compare the pattern of causes of deaths between Round 1 (2000), Round 2 (2001), and Round 3 (2002), causes of deaths were grouped. Deaths from sickness and senility in Round 1 (2000), deaths from non-infectious and infectious disease and senility in Round 3 (2002) as well as deaths from homicide and suicide in Round 2 (2001) and Round 3 (2002) were combined. These new combinations showed the same pattern of causes of deaths occurred in each Round (see Figure 9.5).

Table 9.4 Percentage distribution of causes of deaths by strata, Round 3 (2002)

Causes of Deaths	**Urban/semi-urban**	**Rice**	**Plantation**	**Uplands**	**Mixed economy**
Infectious disease	20.7	19.4	8.7	10.4	14.0
Non-infectious disease	39.7	52.8	58.7	47.8	46.0
Accident	5.2	8.3	10.9	13.4	10.0
Homicide	1.7	0.0	0.0	0.0	0.0
Suicide	0.0	0.0	0.0	1.5	2.0
Senility	27.6	16.7	19.6	19.4	26.0
Others	5.2	2.8	2.2	7.5	2.0
Total	100.0	100.0	100.0	100.0	100.0
Number	**58**	**36**	**46**	**67**	**50**

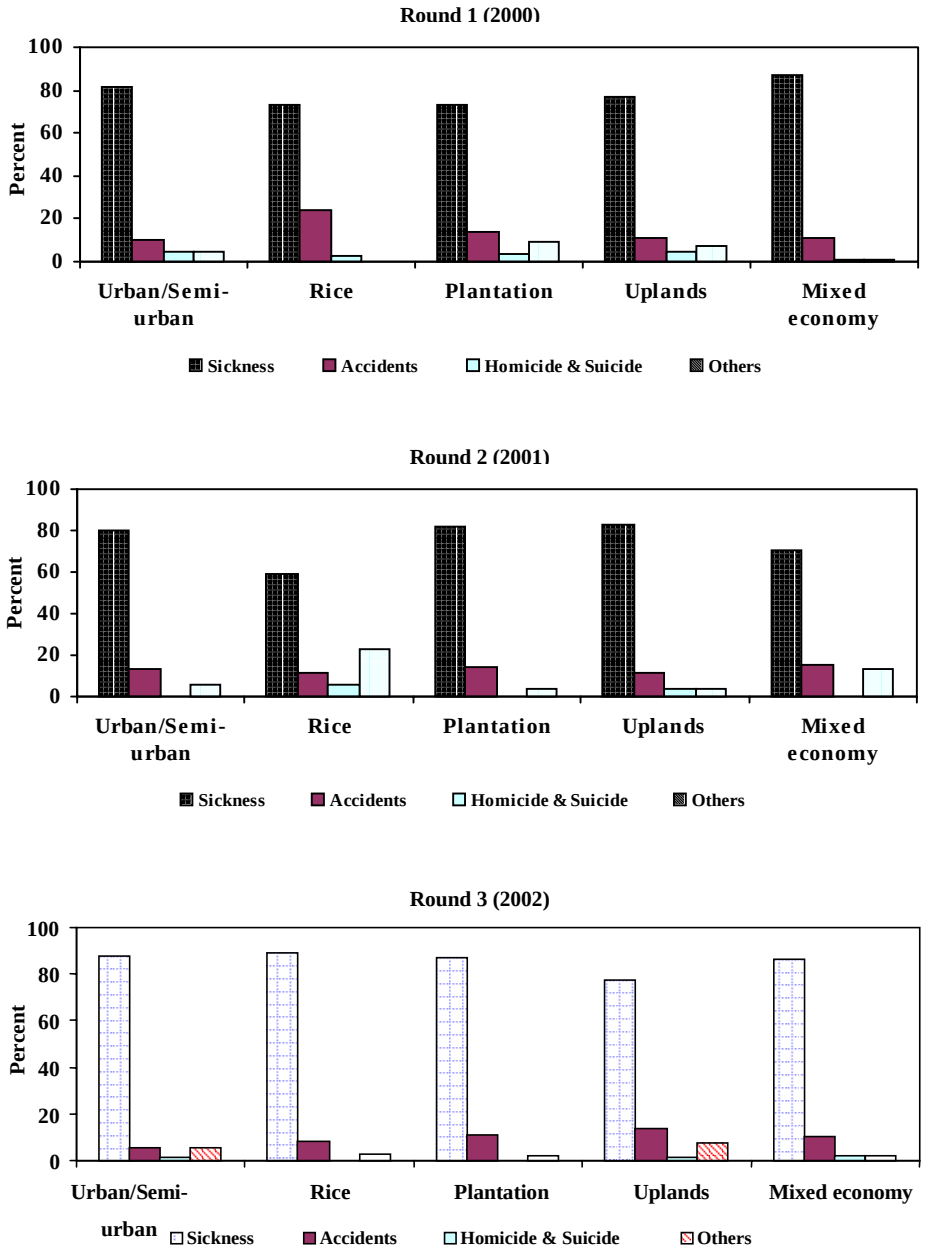


Figure 9.5 Causes of death by strata, Round 1 (2000) - Round 3 (2002)

9.4 Place of death and death registration

For Round 3 (2002), three types of place of deaths were classified, deaths in health facilities, deaths at home, and deaths outside the home. It was found that more than half of all deaths occurred at home (54 percent). Deaths in health facilities were 41 percent. Only 5 percent of all deaths occurred outside the home (see Table 9.5).

Table 9.5 Number and percentage distribution of deaths by place of death, Round 3 (2002)

Place of Death	Number	Percent
Health facilities	105	40.9
Government	*99*	*38.5*
Private/clinic	*6*	*2.4*
Home	139	54.1
Outside home	13	5.1
Total	**257**	**100.0**

The analysis also explored the extent to which the 257 deaths were registered. Results showed that 94 percent of all deaths were reported registered. This figure was higher than 91 percent death registration in Round 1 (2000). However, it was 1 percent lower than death registration in Round 2 (2001).

The proportion of unregistered deaths for Round 3 (2002) was still high for infant and child deaths, which was also found for both Round 1 (2000) and Round 2 (2001). The proportion of both registered and unregistered deaths was shown in Figure 9.6.

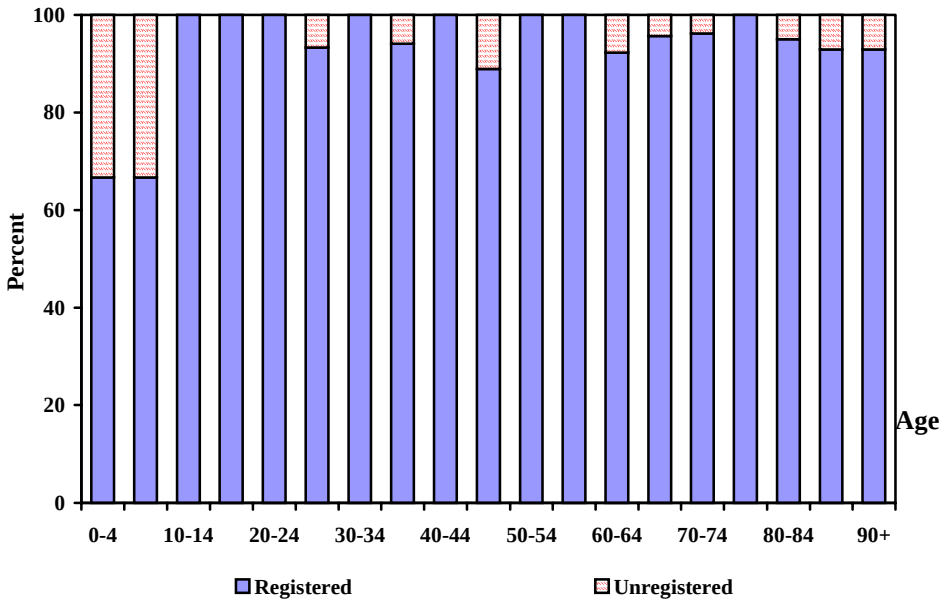


Figure 9.6 Percentage distribution of deaths by death registration and age, Round 3 (2002)

The main reasons for unregistered deaths included: (i) during weekend/holidays (ii) aliens, (iii) no time to register (iv) unnecessary to register and (v) did not know where to register the deaths. Of these reasons, the most common given for not registering a death was lack of citizenship (aliens) (9 from 15 unregistered deaths), followed by 'no time to register' and 'unnecessary to register' (2 from 15 unregistered deaths). One unregistered death was due to his/her relative did not know where to register the death.

9.5 Summary

The mortality level for the 12-month period prior to the Round 3 (2003) was similar to that of Round 2 (2001). In Round 3 (2002), there were 257 deaths, giving a crude mortality rate of 6 per thousand, which is close to the death rate of Thailand in 2003. The male mortality rate was slightly higher than female mortality. The mortality rates were similar among strata, except in the case of the rice strata, where the mortality rate was higher than in other strata.

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, then mortality 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 male in almost all age groups. This pattern was similar to those found in both Round 1 (2000) and Round 2 (2001).

More than 60 percent of deaths were caused by sickness. Forty-eight percent of all deaths were caused by non-infectious disease while 14 percent were caused by infectious disease. Senility was a major cause of deaths, accounting for 22 percent, the second cause, of all deaths. Deaths caused by accidents decreased in Round 3 (2002). It also found that few deaths were caused by homicide and suicide.

Ninety-four percent of deaths that occurred one year prior to the Round 3 (2002) were registered. For those that were not registered, the main reasons were lack of citizenship (aliens), no time to register, unnecessary to register, and did not know where to register the deaths.

10. Land Use and Agricultural Production

Jirakit Boonchaiwattana

Land use and agricultural production impact on many aspects of the life of a population and therefore are an important topic for research. In this section, land use and agricultural production data obtained from the household questionnaire are presented disaggregated by strata. The analysis focuses on agricultural land use patterns, agricultural activities, soil fertility, agricultural production and expenditures, and the water supply for agriculture.

10.1 Agricultural land use patterns

From the census it was found that only 53 percent of households used land (including their own land, rented land, other land used without payment) for agricultural and animal/livestock activities that included both selling and consuming the products produced. The highest percentage (70 percent) was found among households in the rice growing strata, followed by uplands, plantation, mixed economy and 21 percent for the semi-urban strata. When compared with Round 1 (2000), the percentage using land for agriculture decreased in all strata except for the uplands strata, where the percentage of households using agricultural land increased from 59 percent to 64 percent (see Table 10.1).

Table 10.1 Percentage distribution of household use of land for agriculture (both for sale and consumption) by strata, Round 1 (2000) and Round 3 (2002)

Agriculture land use	Semi-urban		Rice		Plantation		Uplands		Mixed economy	
	Round 1	Round 3	Round 1	Round 3	Round 1	Round 3	Round 1	Round 3	Round 1	Round 3
Use	22.7	**20.7**	75.5	**70.1**	64.6	**61.7**	59.1	**64.0**	54.3	**53.9**
Not use	77.3	**79.3**	24.5	**29.9**	35.4	**38.3**	40.9	**36.0**	45.7	**46.1**
Total	100.0	**100.0**	100.0	**100.0**	100.0	**100.0**	100.0	**100.0**	100.0	**100.0**

10.2 Agricultural activities

The main activity of households using land for agriculture was growing cash crops such as sugar cane, corn and cassava (33 percent of agricultural households). This was followed by animal/livestock husbandry (21 percent) and 16 percent for both vegetable cultivation (chilli, asparagus, egg plant) and rice cultivation. Mixed cropping was the main activity of 6 percent of households. Growing fruit was the main activity of only 4 percent of households. When comparing agricultural activities by strata, growing cash crops as the main activity was most common in all strata, except the rice strata. Therefore, the major agricultural activity in the study areas was the growing of cash crops. Agricultural households in the rice strata cultivated both rice and plantation crops as the main activities (31 percent and 39 percent) (see Table 10.2).

Table 10.2 Percentage distribution of main agricultural activity of household by strata, Round 3 (2002)

Agriculture Activity	Urban Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Rice farming	10.5	38.1	2.1	15.5	6.1	15.5
Cash crops	26.4	31.2	52.0	24.1	34.1	32.9
Fruit orchard	2.7	4.6	4.4	1.8	4.6	3.5
Vegetable	21.4	3.0	13.7	24.2	16.3	16.0
Mixed cropping	11.6	1.4	3.1	7.5	9.1	6.1
Other cultivated	2.9	1.2	2.0	7.7	6.4	4.6
Animal raising	24.5	20.5	22.7	19.3	23.5	21.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	552	1,419	1,226	2,174	1,406	6,777

10.3 Soil fertility

Households generally reported no change in soil fertility over the previous year. Overall, 62 percent of households reported that soil fertility had not changed and 21 percent said that soil fertility had increased. In all areas, the highest proportion stated no change, followed by decreasing fertility and finally increasing soil fertility. This ordering was especially pronounced in the semi-urban and mixed economy strata (see Table 10.3).

When comparing fertility of soil in land used for plantation crops (sugar cane, corn and cassava), it was found that over 50 percent of household in almost all strata areas reported no change, followed by decreasing and increasing fertility, except for rice and uplands area. Reported changes in soil fertility in land used for fruit orchards was similar to that of rice farming, with a high proportion reporting

no change, followed by decreasing and increasing soil fertility respectively, except for the uplands strata, where the percent reporting increased soil fertility was greater than that for households reporting decreasing fertility. For all other crops the reported patterns of changes in soil fertility were similar, with the majority reporting no change in perceived levels of soil fertility.

Table 10.3 Percentage distribution of households reported change in soil fertility during previous year by strata and type of agriculture, Round 3 (2002)

Change in soil fertility	Urban Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Rice farming						
Increase	13.2	13.6	15.0	35.8	14.2	20.6
Decrease	35.5	15.4	18.0	14.8	22.6	17.2
No Change	51.2	71.0	67.0	49.4	63.2	62.3
Plantation						
Increase	16.6	17.6	21.4	24.2	16.3	19.9
Decrease	27.0	15.3	24.1	19.1	23.9	21.4
No Change	56.4	67.1	54.5	56.7	59.8	58.7
Orchard						
Increase	20.0	3.1	16.7	31.0	11.4	14.7
Decrease	20.0	9.3	28.3	9.9	20.1	16.2
No Change	60.0	87.6	55.0	59.1	68.3	69.1
Vegetables						
Increase	17.9	29.2	11.5	9.2	17.1	13.1
Decrease	37.4	25.0	28.2	11.1	23.8	19.8
No Change	44.7	45.8	60.3	79.7	59.2	67.1
Mixed Cropping						
Increase	17.6	20.8	31.6	26.6	18.5	23.0
Decrease	19.1	16.7	26.3	12.8	21.5	17.7
No Change	63.2	62.5	42.1	60.6	60.0	59.4
Other crop						
Increase	18.2	22.2	17.2	22.8	13.3	19.1
Decrease	9.1	22.2	24.1	6.8	28.6	16.3
No Change	72.7	55.6	58.6	70.4	58.1	64.6

10.4 Agricultural productivity

For those with some agricultural production during the previous year, there was generally no reported change in agricultural productivity when compared with the previous year. The exception was for fruit orchards and growing of vegetables, where a high percentage of households reported a decrease in productivity (see Table 10.4). Among rice growing households, 42 percent reported no change in productivity. Rice growing households in the rice strata were most likely to report a decrease in productivity.

Table 10.4 Percentage distribution of households reported change in agricultural productivity by strata and main form of agricultural production, Round 3 (2002)

Productivity	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Rice farming						
Increase	15.8	24.6	16.7	33.1	23.6	25.2
Decrease	51.8	34.3	27.8	19.6	37.1	32.7
No Change	32.5	41.1	55.6	47.3	39.3	42.1
Plantation						
Increase	18.4	27.7	26.3	26.4	22.5	24.7
Decrease	28.1	25.0	28.8	30.8	26.5	27.7
No Change	53.5	47.3	45.0	42.9	51.1	47.7
Orchard						
Increase	47.1	12.6	28.6	40.6	32.1	26.6
Decrease	29.4	63.2	44.9	25.0	33.9	45.2
No Change	23.5	24.1	26.5	34.3	33.9	28.2

Table 10.4 Continued

Productivity	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Vegetables						
Increase	25.9	32.6	17.0	17.5	26.1	22.6
Decrease	43.5	39.5	42.2	41.6	39.1	41.2
No Change	30.6	27.9	40.7	40.9	34.8	36.2
Mixed Cropping						
Increase	23.3	42.1	32.3	37.5	24.8	30.7
Decrease	36.7	15.8	35.5	30.4	30.7	31.3
No Change	40.0	42.1	32.3	32.1	44.6	38.1
Other crop						
Increase	25.0	22.2	22.7	26.8	20.3	23.0
Decrease	8.3	55.6	27.2	14.3	45.6	31.5
No Change	66.7	22.2	50.0	58.9	34.1	45.5

A similar finding is observed for the productivity of plantation crops, with the majority of households in all strata reporting no change in productivity, but the highest proportion of households reporting a decrease in productivity being for households in the uplands strata. In contrast, with the exception of the semi-urban and uplands strata, households engaged in fruit orchard activity as their major agricultural activity, were most likely to report a decrease in productivity. For households involved in mixed cropping there were similar proportions of households reporting no change, increase, and a decrease in productivity.

10.5 Agricultural expenditure

In total, about 50 percent of households engaged in agricultural activities in the last year reported no change in agricultural expenditure when compared to the previous year. A higher proportion reported an increase in expenditure than reported a decrease in expenditure (see Table 10.5).

For those agricultural households mainly engaged in rice growing, about one-third reported an increase in expenditure, with 46 percent of rice growing households in the semi-urban strata reporting an increase. Only about 10 percent reported a decrease in expenditure. About one-half of households engaged in the production of plantation crops reported an increase in expenditure, with little variation among strata

Most households whose primary agricultural activity was growing fruit reported no change in expenditures, the exception was for fruit growing households in the rice strata, where 34 percent reported a decrease and 26 percent reported an increase in expenditure. A similar finding can be observed for households growing vegetables as their main agricultural activity.

Similarly, about 50 percent of households engaged in mixed cropping reported no change in expenditure when compared with the previous year. The proportion reporting increased expenditure was higher than the proportion reporting decreased expenditure, with increases in expenditure on mixed cropping most likely to be reported by households in the uplands and mixed economy strata.

Approximately 80 percent of households engaged in animal husbandry as their main agricultural activity reported no change in expenditure in production. The exception was for the semi-urban strata were only 50 percent reported no change in expenditure reporting a decrease in expenditure.

Table 10.5 Percentage distribution of households reported change in agricultural expenditure by strata and main type of agricultural activity, Round 3 (2002)

Change in Expenditure	Urban Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Rice farming						
Increase	45.5	36.2	33.3	24.7	34.7	32.9
Decrease	7.4	12.1	4.9	13.4	13.7	12.0
No Change	47.1	51.7	61.8	61.9	51.6	55.1
Plantation						
Increase	36.5	48.0	44.9	43.2	41.9	43.7
Decrease	12.8	13.9	13.2	20.1	12.7	14.9
No Change	50.7	38.0	41.9	36.7	45.4	41.4
Orchard						
Increase	38.1	25.8	45.9	31.0	48.1	36.9
Decrease	9.5	34.4	8.2	12.7	13.9	18.2
No Change	52.4	39.8	45.9	56.3	38.0	44.9
Vegetables						
Increase	50.8	42.9	38.7	30.5	44.5	37.6
Decrease	9.2	10.2	14.8	21.1	16.0	17.2
No Change	40.0	46.9	46.5	48.4	39.5	45.2
Mixed Cropping						
Increase	25.4	20.8	25.6	33.7	37.1	32.1
Decrease	10.5	20.8	10.3	20.3	12.9	15.8
No Change	64.2	58.3	64.1	46.0	50.0	52.1
Other crop						
Increase	23.1	37.5	32.1	26.8	32.0	29.3
Decrease	46.2	25.0	3.6	14.6	18.4	16.7
No Change	30.8	37.5	64.3	58.5	49.5	54.0
Animals						
Increase	26.2	16.2	15.2	9.6	18.9	15.3
Decrease	17.9	3.6	3.5	2.5	4.5	4.6
No Change	56.0	80.2	81.3	87.9	76.6	80.1

10.6 Water supply for cultivation

Water is the primary household resource for agriculture. In Round 3 (2002) it was found that 62 percent of agricultural households reported sufficient water for cultivation compared with the previous year (see Table 10.6). Only 15 percent reported not enough water for cultivation. Sufficient water was most reported (88 percent) by households in the semi-urban strata, followed by the mixed economy strata, uplands, rice growing and plantation strata respectively. The highest percent of agricultural households reporting insufficient water supply for agriculture was reported for the rice strata (25 percent), while the highest percent reporting only enough water in some cropping seasons during the previous years was reported by agricultural households in the plantation strata (40 percent). Households in the rice and plantation strata were the most likely to use land for agricultural activities.

Table 10.6 Percentage distribution of reported sufficiency of water supply for agriculture production by strata, Round 3 (2002)

Water Supply	Urban Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Enough	88.2	45.0	40.2	68.0	77.4	61.5
Not enough	7.3	25.0	19.4	11.9	10.2	15.4
Enough for some seasons	4.5	30.0	40.4	20.1	12.4	23.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

10.7 Summary

Fifty three percent of households used land for agricultural and animal/livestock activities, with 70, 64 and 62 percent respectively of households in the rice, uplands and plantation strata reporting the use of land for agricultural activities. As expected, the lowest proportion of households using land for agricultural production was reported for households in the semi-urban strata.

The main agricultural activities were growing plantation crops, such as sugar cane, corn and cassava, followed by animal/livestock husbandry. The proportion of households reporting vegetable and rice farming as their main agricultural activity was the same, although in the rice strata, growing rice was an activity that was reported as the main agricultural activity as frequently as was growing plantation crops.

Around 50 percent of agricultural households reported no change in soil fertility in the previous year. However, a greater proportion of households reported decreases in soil fertility and reductions in agricultural productivity than reported increases.

Almost two-thirds of agricultural households reported that they had sufficient water of production, while 23 percent reported that they had enough water in some seasons, while 15 percent reported not enough water. Sufficient water supply was most likely to be reported by agricultural households in the semi-urban strata. Insufficient water supply was most likely to be reported by agricultural households in the rice growing strata.

11. Elderly

Pramote Prasartkul, Pattama Wapatthanapong

During the past two decades, the population of Thailand has been ageing very rapidly. Both the number and proportion of the aged population have increased compared to those in the young and working age groups. Population ageing has resulted from fertility decline and the longer life expectancy of the population. The elderly is an issue of interest in the Kanchanaburi Project. The elderly in the project are defined as persons aged 60 years and over.

11.1 Age-sex structure of aged population

In Round 3 (2002), there were 4,579 aged population, 2,096 males (46 percent) and 2,483 females (54 percent). Among the aged population, those in the 60 – 64 years age group constitute the highest proportion of both males and females and in all strata. The proportion of the aged population decreases at the older age groups. Four to six percent of the aged are in age group 85 years and over (see Table 11.1). The age-sex structure of aged population in the study strata are shown in Figure 11.1.

Table 11.1 Percentage distribution of aged population (60 years and over) by strata, age and sex, Round 3 (2002)

Age	Urban/Semi-urban		Rice		Plantation		Uplands		Mixed Economy		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
60 – 64	34.4	30.5	29.1	32.8	39.0	35.1	37.4	33.8	31.1	31.2	34.0	32.4
65 – 69	22.3	25.0	25.8	21.2	27.7	24.2	24.9	27.1	27.0	25.2	25.4	24.5
70 – 74	20.2	15.9	22.0	18.5	15.8	18.4	21.5	19.0	18.7	21.2	19.9	18.5
75 – 79	12.6	15.2	13.7	11.1	11.3	11.4	11.7	10.5	12.6	10.8	12.4	11.9
80 – 84	4.7	7.8	4.7	9.7	4.2	5.8	2.5	5.6	5.2	7.4	4.2	7.4
85+	5.8	5.7	4.7	6.7	1.9	5.0	2.0	4.1	5.4	4.3	4.1	5.2
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	430	593	423	524	310	359	489	468	444	539	2,096	2,483

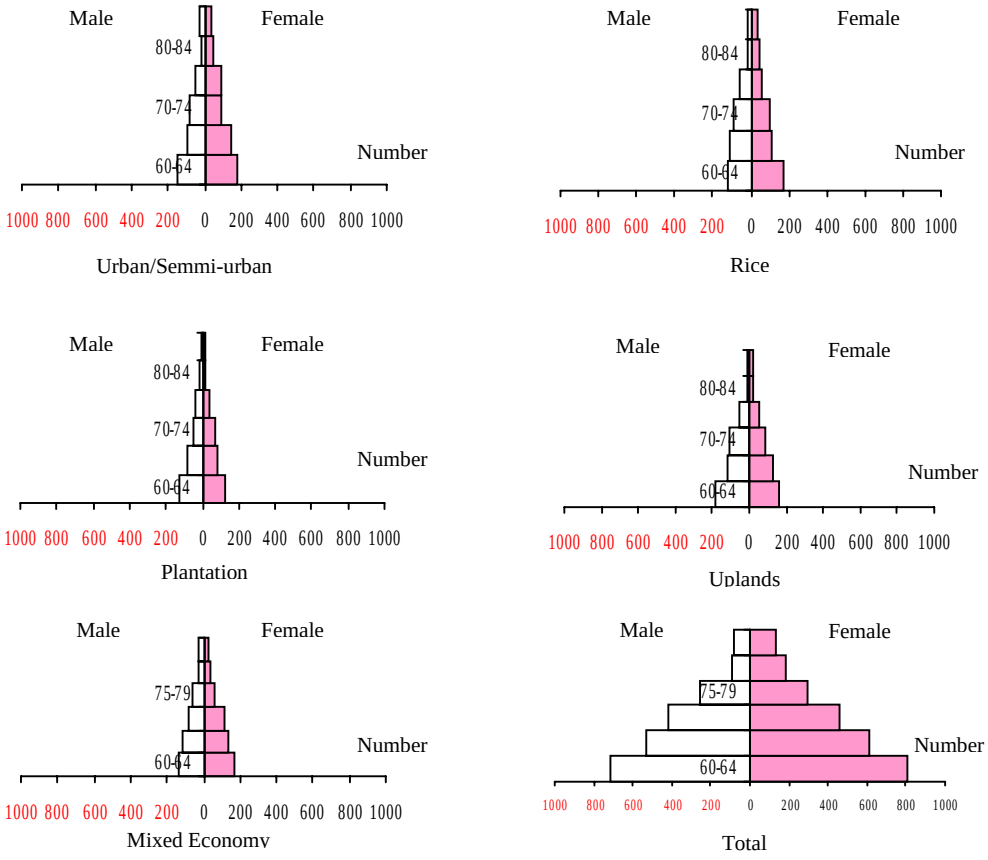


Figure 11.1 Age-sex structures of aged population (60 years and over) by strata, Round 3 (2002)

11.2 Problems of self-care among the elderly

As the number of the elderly increases the number of the aged people who have problems in taking care of themselves also increases. The elderly who cannot help themselves create responsibilities for care for families, and communities.

The third round census survey of the Kanchanaburi Project includes questions on the disabilities of the elderly in respect to their eating, defecating, bathing, dressing and moving in the house, including problems of memory/Alzheimer's dementia. It is found the 1 to 5 percent of the elderly have some problems in self-care. The most common reported problem is dementia and the least reported is eating problems (see Figure 11.2)

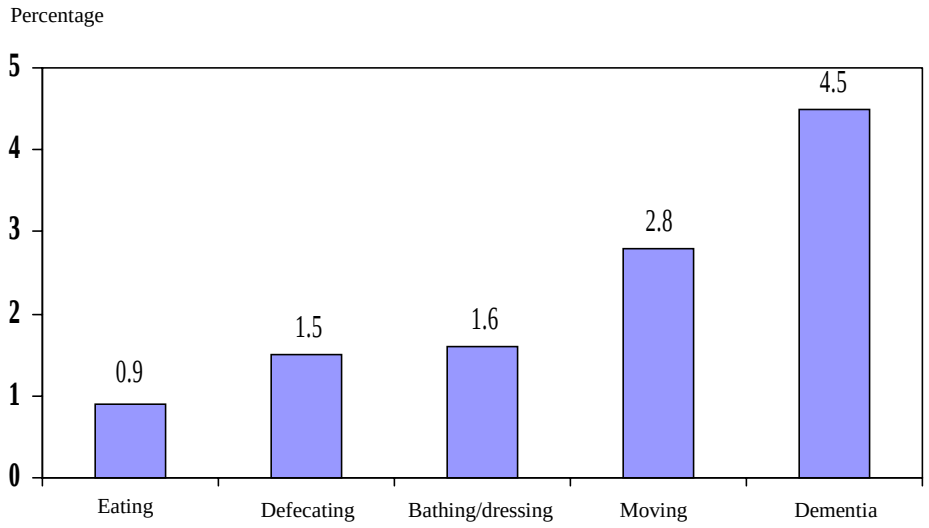


Figure 11.2 Percentage distribution of aged persons reporting self-care problems by type of problem, Round 3 (2002)

When considering the problems of self-care by age of the elderly, it is found that the proportion of disability increases according to age (see Table 11.2). Senility is the main cause of these disabilities. More than half of the reasons of disabilities cited by respondents are senility (see Table 11.3).

Table 11.2 Percentage distribution of problems in self-care of the elderly by age, Round 3 (2002)

Age	Problems in self-care				
	Eating	Defecating	Bathing/ dressing	Moving in the house	Dementia
60 – 64	0.3	0.3	0.3	1.3	1.4
65 – 69	0.8	1.1	1.0	1.5	2.5
70 – 74	0.9	1.3	1.3	2.5	4.0
75 – 79	1.3	2.2	2.9	4.7	7.0
80 – 84	2.2	4.0	4.4	5.5	11.4
85 – 89	3.3	7.3	6.6	11.3	18.5
90 – 94	4.7	7.0	9.3	14.0	37.2
95 – 99	6.7	13.3	13.3	20.0	26.7
100+	20.0	20.0	20.0	40.0	40.0
Total	0.9	1.5	1.6	2.8	4.5
Number	43	68	72	127	206

Table 11.3 Percentage distribution of causes of problems in self-care of the elderly in the study areas, Round 3 (2002)

Causes	Problems in self-care				
	Eating	Defecating	Bathing/ dressing	Moving in the house	Dementia
Senility	48.8	50.0	51.4	48.0	83.0
Morbidity	27.9	33.8	31.9	33.1	10.2
Accident	9.3	7.4	6.9	12.6	2.4
Others	14.0	8.8	9.7	6.3	4.4
Total	100.0	100.0	100.0	100.0	100.0
Number	43	68	72	127	206

11.3 Summary

The aged population (60 years and over) in the third Round 3 (2002) of the Kanchanaburi Project accounts for 10 percent of the total population. Among the aged, 46 percent are male and 54 percent female. The proportion of the elderly gradually decreases at older age groups.

Dementia is the most prevalent problem of the elderly, occurring for about 5 percent of the aged. The least common problem is eating problems, which occurred for only 1 percent of the aged. The problem of self-care increases with age. Respondents report senility as the main cause of disability.

12. Government Policy

Amara Soonthorndhada

12.1 Government policy

Information on the One-Million-Baht-Village Fund Project was obtained from Round 3 of the Kanchanaburi DSS. This project is a national project in which all villages receive one million baht (approximately $25,000) to be distributed among village households that apply for funds to engage in income generating activities. The analysis presented here focuses on the level of community participation and awareness of the community members about this national scheme. The analysis is based on data collected from household questionnaires.

Respondents for the household questionnaire were either household heads or any other family member who could give adequate information about their household members. The household survey data revealed that 87 percent of respondents know that the project was implemented in their villages while 12 percent were uncertain about this matter. Table 12.1 shows the percentage distribution of knowledge regarding the existence of the project by strata. The highest levels of knowledge were found for the rice strata (99 percent), while the uplands (76 percent) and urban strata (77 percent) showed the lowest level of knowledge of the existence of the project.

Table 12.1 Percentage distribution of awareness of "One-Million-Baht-Village-Fund-Project" implemented in the village by strata

Awareness	Urban/Semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Yes	76.7	98.8	97.3	75.8	93.6	86.7
No	5.5	0.2	0.1	1.5	0.3	1.7
Not sure	17.8	0.2	0.1	22.7	6.1	11.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	2,662	2,020	1,985	3,398	2,607	12,672

The respondents were asked to identify their roles, if any, in the "One-Million-Baht Village-Fund-Project". Table 12.2 details the following results: About 47 percent of the households from all strata participated in the project. About 60 percent of households in rice strata had members participating in the project, followed by the plantation strata, while members in urban/semi-urban strata had the lowest level of participation (29 percent).

Table 12.2 Percentage distribution of the household members participation in "One-Million-Baht-Village-Fund-Project" by strata

Participation	Urban/semi-urban	Rice	Plantation	Uplands	Mixed Economy	Total
Yes	29.2	59.7	54.7	46.5	47.9	47.4
No	70.4	40.2	45.2	53.5	52.0	52.5
Not sure	0.4	0.1	0.1	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	2,040	1,994	1,929	2,575	2,441	10,979

Participation in the project includes proposal preparation for funding, being appointed as a board member of a local committee that approves loans, seeking loans and taking the role of a regular membership without loans. Members of the households in the rice strata had the highest engagement in proposal preparation for funds compared with the other strata. Members of households in the urban/semi-urban strata and uplands strata were more involved as board members. Household members in the rice strata and plantation strata were more likely to participate in the project by seeking loans than were members of households in other strata. Household members in the urban/semi-urban strata had the lowest percentage seeking loans from the project (see Table 12.3).

Participation in proposal preparation was highest in the rice strata, although the proportion was very low (3 percent). Whilst being involved as a board members was highest amongst the members living in the urban/semi-urban strata. Participate as members for loans was much higher in the rice strata (85 percent) and plantation strata (88 percent) compared with the urban/semi-urban strata. The highest percent who were regular members was found in the plantation strata while the urban/semi-urban strata had the lowest proportion for this purpose (see Table 12.3).

Table 12.3 Percentage distribution of responsibility by strata (multiple responses)

Responsibility	Urban/semi-urban	Rice	Plantation	Uplands	Mixed Economy
Proposal preparation	0.8	3.3	1.6	1.0	2.4
Board Members	11.2	8.2	7.0	11.5	8.5
Members for loans	18.0	51.0	48.2	36.6	37.5
Regular Members	22.7	50.2	50.4	39.4	41.1

12.2 Summary

It was found that about 87 percent of total households had heard about the “1 Million Baht Village Fund” project in their own village. Classifying by strata, over 90 percent of households in the rice strata, plantation strata and mixed strata knew that the project had commenced in their villages while 23 percent of households in uplands strata and 18 percent of urban/semi-urban strata were not sure about the project. However, the household survey showed that there was a high level of participation in some strata for those seeking loans with, for example, 88 percent of households in the plantation strata requesting loans.

13. Summary

Sureeporn Punpuing

The Kanchanaburi project is based on the principle of a Demographic Surveillance System (DSS), in which the study population is defined by geographic boundaries. The project document changes of population in the defined geographical areas since 2000. The study areas comprises villages and census blocks located in urban/semi-urban, rice, plantation, highlands and mixed economy strata.

Data and quality of data

The same methodology for enumeration of households and household members was employed in Round 3 (2002) as in Round 1 (2000) and Round 2 (2001). The household listing from Round 2 (2001) was the basis for the follow up of residents in Round 3 (2002). The Round 2 (2001) household listing was updated for changes in household status that occurred between July 1st, 2001 and June 30th, 2002 including household members who were born, died, migrated in/out, and who were temporary residents.

Data collection at the household and individual levels was undertaken through face-to-face interviews, and data at the community level was obtained through community leaders' group interviews. There were 10 data collection teams, and each team consisted of a supervisor and six interviewers, with a total of 60 interviewers and 10 supervisors. In addition, there were 3 local interviewers who lived in our study villages. In sum, there were 73 data collectors. The data collection period was July 1st, 2002 to August 18th, 2002.

The supervisor and interviewers had at least a bachelor's degree, and the majority was local residents of Kanchanaburi province. The supervisors were intensively trained for two weeks, and took a month for preparation for the fieldwork. The interviewers were also trained for two weeks. During the fieldwork, the researchers visited and randomly edited the questionnaires for completeness, accuracy, and consistency. The interviewers and supervisors edited their questionnaires daily. Editing was performed again after the data was sent to the office. Coding and data entry were undertaken during the period August 27th to December 30th, 2002. The interviewers evaluated quality of data as good to very good.

The interview completion rate for households was 83 percent. There were 15,308 eligible households and 12,680 households were interviewed. For the individual questionnaire, there were 31,575 eligible respondents and 28,899 respondents were interviewed. The response rate was therefore 92 percent. There were 3 percent of the eligible households that refused the interview, and vacant households comprised 10 percent of eligible households. Nine percent of eligible individuals refused to be interviewed.

Average interviewing time for a household was 15 minutes with a range from 2 minutes to 1 hour and 15 minutes. The average interviewing time for an individual was 11 minutes with a range from 1 to 60 minutes.

Village information

There were 13 censuses block and 88 villages located in five strata - urban/semi-urban, rice, plantation, uplands and mixed economy. In general, the villages' social and economic structure were more or less the same as those in Round 1

(2000), except for public facilities such as an increased telephone lines, mobile telephones, internet access, and paved roads used for transportation between villages and their district town.

A group of key informants in each village pointed out that cold is the most common health problem of the villagers followed by malaria, a disease that is concentrated in the uplands. They also mentioned some new diseases that had previously been rare in the study area, such as allergy, leptospirosis and dengue fever**.**

Land use

Approximately 53 percent of households in the study area reported that they use land for agriculture or animal husbandry. About 70, 64 and 62 of households in the rice, highlands and plantation respectively used land for agriculture, which is higher than in the other two strata. Most of the land was used for plantation crops followed by animal husbandry, and on some land, farmers grow rice as well as other crops such as sugarcane or cassava on the same piece of land in a year.

Although, the majority of households reported that agriculture expenditures increased over the previous year, more than half of households indicated that soil fertility remained the same. Most households had enough water for cultivation for the whole year. Only 25, 19 and 12 percent of households in the rice, plantation and uplands strata respectively, reported that there was not enough water for cultivation during the previous year.

Population and age structure

The population in Round 3 (2002) was 45,043, of which 21,673 were males and 23,370 were females. The population decreased from 46,029 persons in Round 2 (2001), or about 2 percent. The rate of decrease was highest in the urban/semi-urban (4 percent), and lowest in the uplands strata (0.2 percent). The number of enumerated households in Round 3 (2002) was 12,680, an increase from 12,657 households in Round 2 (2001), or about 0.2 percent.

Females outnumbered males in every strata except the uplands, which is the same pattern as that of Round 2 (2001). Dependency ratios were highest in the uplands and lowest in the urban/semi-urban strata. The dependency ratios were the same for the two previous rounds of the census.

The number of population aged 60 years and over were 4,579, of which 2,096 (46 percent) were males and 2,483 (54 percent) were females. The elderly aged 60-64 comprised the highest proportion of elderly, while the proportion of the elderly aged 85 years and over was only about 4-7 percent in every strata.

Occupation, education and language

In every strata, more than half of the male and female population engaged in agriculture, especially in the uplands (74 percent for males, and 53 percent for females), and the plantation strata (66 percent for males and 61 percent for females), followed by the rice, mixed economy and urban/semi-urban strata. Only 16 percent of male and 14 percent of females in the urban/semi-urban strata were employed in agriculture. This pattern is the same as that of previous rounds.

However, the proportion unemployed for both males and females in Round 3 (2002) slightly increased or decreased in every strata.

In Round 3 (2002), approximately one in five males, and one in four females was illiterate. There was little change in these levels between Round 2 (2001) and Round 3 (2002). There were marked differences in education levels of the population in the urban/semi-urban area compared to other areas, with the proportion of the population with 6 and above years of education much higher in the urban/semi-urban strata, and with 13 percent of males in the urban/semi-urban strata with an education level higher than secondary level, while only 2-3 percent of the male population in the rice, plantation and uplands strata have education levels higher than the secondary level. There is an inequality in the educational attainment between males and females, with the gap being most pronounced in rural areas.

In all strata more than 95 percent of households use the Thai language as the main language in their daily life. In the uplands only 60 percent use Thai, while 20 percent used Karen, 10 percent used Mon and 6 percent used the Burmese language.

Migration

Eighty one percent of the population did not migrate between Round 2 (2001) and Round 3 (2002). The out migration rate was 12 and in-migration rate was 7, with a net out-migration of 5 per 100 population. The uplands strata experienced the highest, and the plantation strata experienced the lowest, in-migration and out-migration rates. The in-migration rate was highest in urban/semi-urban areas. Migration rates for males were higher than those of females. The majority of migrants were in the age group 15-29, and the majority of migrants moved within

Kanchanaburi province. These patterns were the same as those observed in Round 1 (2000) and Round 2 (2001).

Round 3 (2002) in-migration levels were lower than those of Round 2 (2001), but higher than those of Round 1 (2000) in all study areas except for the urban/semi-urban. The in-migration rate of 9 per 100 in the urban/semi-urban was equal to that of Round 2 (2001). The out-migration rate increased in all study areas, especially in the uplands.

Fertility

The total fertility rate (TFR) declined slightly when compared with Round 1 (2000) and Round 2 (2002). The total fertility rate was 2.0, and the uplands had the highest fertility level. The patterns of age-specific-fertility-rate (ASFR) were the same as the previous year, being the lowest at age 15-19, then rapidly increasing for age group 20-24, and then gradually declining with increasing age of women.

Contraceptive prevalence was 79 percent, a slight increase from the 77 percent recorded in Round 2 (2001). Female sterilisation remained the most popular method of contraception, followed by the pill and injection. About 90 percent of currently contraceptive women used these three methods. This is the same pattern as in Round 2 (2001).

Approximately 75 percent of contraceptive users received services from the government health service, particularly in the rural area. Drugstores were a major source of contraceptive methods in urban areas. About 40 percent of currently married women seek advice about number of children and contraceptive methods from their husband. However, the results suggest that husbands had limited

involvement in decision making about the number of their children and the choice of contraceptive methods.

Elderly health

It was found that about 5 percent of elderly aged 60 and over experienced dementia and forgetfulness followed by problems about physical movement, defecation, bathing/showering and dressing, and eating respectively. More than half of elderly reported that causes of dementia are from the degeneration, followed by illness.

Consumption behaviour

About 9 in 10 of the population in the study area report that they eat three meals a day. However, the highest proportion of those who did not have breakfast and those who had a late night meal was found in the urban/semi-urban strata. The most common reasons for not eating breakfast were: did not feel hungry, afraid of being overweight, no time, and in a hurry. Working during the night and food was on sale during the night are the main reasons for those who had a late night meal. The majority of the population cooked for themselves. The population in the urban/semi-urban areas who bought ready made food was higher than among the population in other strata.

Residents of urban/semi-urban areas consume food that indicate modernization such as fast food, supplementary food, and vitamins, more than do residents in other study areas. More than half of urban/semi-urban residents drink bottled water. About 80 percent of the population in the rice, plantation and uplands strata drink rainwater. Consumption of raw meat occurred, although this was not

a regular practice, only being reported by about 2-7 percent of respondents in all study areas. About half of respondents liked spicy food.

Consumption of additive substances such as cigarettes, beer, liquor and tonic drinks was not common, with less than 11 percent of respondents in all study areas reporting consumption of these substances. The exception was the uplands strata where 48 percent of respondents smoked regularly. When compared with the previous two rounds, the patterns changed only slightly.

Exercise and sleeping patterns

The proportion of the population who reported that they exercised was highest (26 percent) among urban/semi-urban residents, while the lowest proportion (12 percent) was found for members of the plantation strata. Males did more exercise than females, and the proportions exercising decreased with increased age. The most popular exercise was playing sport (such as football, badminton) followed by jogging and aerobics. Most people exercised at home or at playgrounds in the neighbourhood.

More than half of the population (56 percent) slept 8-10 hours per day, and 26, 15, 3, and 1 percent slept 6-8 hours, 10-12 hours, less than 6 hours and 12 hours per day respectively. More than 90 percent of them slept under a mosquito net.

Dental health

About 69 percent of population brushed their teeth after waking and also before going to bed. And 23 percent brushed their teeth only in the morning and 1

percent brushed their teeth only before going to bed. About 7 percent of population did not brush their teeth at all. The reasons that they went to the dentists were for extractions, fillings, and (fluorite) cleaning. The most frequently reported dental problem is caries, followed by toothache, sensitivity and gingivitis.

Mortality

A total of 257 persons -- 150 males and 107 females -- died during the period July 1st, 2001 – June 30th, 2002. The crude death rate was 6 per 1000, being 7 for males, and 5 for females. The crude death rates were about 5 per 1000 in urban/semi-urban, plantation, uplands and mixed economy, with the rate highest in the rice strata (8 per 1000). The crude death rate in Round 3 (2002) was slightly lower than those of the last two previous years.

Mortality levels and patterns were similar to those found in Round 1 (2000) and Round 2 (2002), and the general Thai population. For instance, males had higher mortality than females and the mortality pattern had a J-shape. Most causes of deaths were non-communicable disease followed by aging, communicable diseases, and accidents. There were only one percent of deaths resulting from murder and suicide. About half of deaths occurred at home, and 94 percent of the deaths had been registered or had a death certificate.

Government policy

The 30 Baht Health Scheme for All

About 3 in 4 of the population had received the ***gold card*** of the "30 Baht Health Scheme for all". The highest proportion who had received this card was in the plantation strata, with about 80 percent having received the card. During the time of data collection, a large proportion of population had not yet used this card, with the major reason being that they had not yet been sick, followed by the reasons that they already had other health care cards and the place where they registered did not match their current place of residence.

The One-Million-Baht-Village-Fund-Project

More than 90 percent of household in the rice, plantation, and mixed economy strata know about the "One-Million-Baht-Village-Fund-Project". While only 75 percent of households in the urban/semi-urban knew that this project was available in their communities.

Members of households that know about this project in the rice strata participated in this project more than did members of households in other strata. The lowest proportion of households who participated in the "One-Million-Baht-Village-Fund-Project" was found in urban/semi-urban areas. However, the proportion of household members in urban/semi-urban areas who acted as chairpersons or committee members of this fund was highest when compared with those from all other study areas, except for the uplands. About 80 percent of households that were members of this fund in the rice, plantation, uplands and mixed economy strata requested a loan from the "One-Million-Baht-Village-Fund-Project".

Appendix

Table A2.1 Number, response rate, and average time for interviews (in minutes) by questionnaire

Questionnaire	Number eligible	Number of interviews	Response rate	Average time interview
Household	15,307	12,680	82.8	15
Individual	31,575	28,899	91.5	11

Table A2.2 Number and percentage distribution of interview non response by reason and type of questionnaire

Reason	Household		Individual	
	Number	Percent	Number	Percent
Refused to be interviewed	81	3.1	227	8.5
Busy working	176	6.7	1779	66.5
Sick/old/handicap	24	0.9	623	23.3
Household move	1,724	65.6	-	-
No permanent residents	248	9.4	-	-
Vacant/deserted home	21	0.8	-	-
Other	346	13.2	34	1.3
Do not know/no answer	8	0.3	13	.5
Number	2,628	100.0	2,676	100.0

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

Question	Questionnaire	
	Household	Individual
What was the place where the interview was held like?		
Free from disturbances/ very private	49.9	46.2
There was some disturbance, but it did not affect the interview	47.1	50.8
There was a disturbance and it affected the interview	2.7	2.5
There was a lot of disturbance and the interview had to be stopped often/it is spoiled the atmosphere	0.3	.2
Do not know / no answer	0.1	.2
Total	100.0	100.0
(Number)	(12,680)	(28,899)
Was there anyone else present during the interview?		
Yes, all the time.	32.6	35.6
Yes, sometimes.	17	17.6
No, not at all.	50.3	46.6
Do not know / no answer	0.1	.3
Total	100.0	100.0
(Number)	(12,680)	(28,899)
If there was another person in this interview, who was it? (Can answer more than one person)		
Other family members	71.4	81.0
Friend	6.9	6.5
Neighbor	32.1	25.0
Interpreter	2.0	1.9
Others (relatives, other interviewers, etc.)	3.8	2.9

Table A2.3 (Continued)

Question	Questionnaire	
	Household	Individual
Did such persons answer or give opinions for the respondent?		
Yes, a lot.	2.8	2.6
Yes, sometimes.	30.3	27.6
Yes, a little.	27.7	26.2
Not at all.	38.2	42.9
Do not know / no answer	0.9	.8
Total	100.0	100.0
(Number)	(6,303)	(15,435)
How much cooperation did the respondent give during the interview?		
Very good	51.1	49.9
Good	46.8	47.5
Average	1.8	2.1
Little	.2	.2
Do not know / no answer	.1	.3
Total	100.0	100.0
(Number)	(12,680)	(28,899)
How did the respondent behave during the interview?		
Enjoyed answering	86.6	85.5
Indifferent	13.1	14.1
Reluctant to answer some questions.	.2	.0
Showed dissatisfaction of some questions.	.1	.0
Showed dissatisfaction of all questions.	.1	.3
Total	100.0	100.0
(Number)	(12,680)	(28,899)

Table A2.3 (Continued)

Question	Questionnaire	
	Household	Individual
In general, what was the quality of the data obtained from this interview like?		
Very good	43.7	42.2
Good	53.9	54.7
Satisfied	2.2	2.7
Not good	.1	.0
Do not know / no answer	.1	.3
Total	100.0	99.9
(Number)	(12,680)	(28,899)
Reasons for low quality of interview		
Foreigner	4.3	-
Drunk	13.0	3.5
Very old	8.7	-
Do not cooperate	26.1	9.3
Sick	-	1.2
Do not know / no answer	47.8	86.0
Total	99.9	100.0
(Number)	(23)	(13)

Table A7.1 Age specific fertility rates and total fertility rates of women aged 15-49 by strata, Round 3 (2002)

Age	Age specific fertility rates				
	Urban/ Semi-urban	Rice	Plantation	Uplands	Mixed Economy
15-19	0.02188	0.03738	0.08374	0.10903	0.06931
20-24	0.09363	0.12621	0.12162	0.17164	0.09831
25-29	0.10465	0.07143	0.09774	0.15234	0.07557
30-34	0.06700	0.07216	0.01418	0.10591	0.04267
35-39	0.02747	0.04142	0.03020	0.03820	0.02174
40-44	0.00746	0.00339	0.00694	0.02948	0.00000
45-49	0.00000	0.00000	0.00000	0.00794	0.00000
TFR	1.61	1.76	1.77	3.07	1.54

Kanchanaburi Project

Round 3 (Year 2002)

Institute for Population and Social Research, Mahidol University

In collaboration with

Ratchapat Institute Kanchanaburi

Village Questionnaire

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

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

Date of interview ……month……2002
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 ……...……
……...……
……..
……..
……
……

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.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

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

Information issue	Name of respondents	Position	Age (years)	Sex
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

Part 1: General Data

1.1 How many households are there in this village? ……..households

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

1.2 How many people are there in this village?

Total…….. Male…….. Female……

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

> **Interviewer:** Factory in the village means that a factory that produces, makes or repairs goods and is conducted by a person or group at only one place. This factory can produce more than one product.

1.3 Are there any factories in this village?

1. Yes
2. No

1.3.1 No. of factories……factories

1.3.2

Specify name and type of factory	No. of employees (person)	No. of employees who live in this village (person)
1……	……	Male…….. Female……..
2……	……	Male…….. Female……..
3……	……	Male…….. Female……..

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

1.3.4

Specify name and type of factory	No. of employees (person)	No. of employees who live in this village (person)
1……	……	Male…….. Female……..
2……	……	Male…….. Female……..
3……	……	Male…….. Female……..

1.4 **From 1st July 2001 till now,** have any infrastructure in this village changed?
(Please read all items to respondent)

List of infrastructure	Increase	Decrease	Not change	Remarks
1. No. of house				
2. No. of road				
3. No. of shop/restaurants				
4. No. of factories				

Part 2: Agriculture (From July 1, 2001- June 30, 2002)

2.1 Where is the source of water for agriculture? *(can answer more than one item)*

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

2.2 Compare the quantity of natural water in this year to last year

1. Decreased
2. Increased
3. Same
4. Do not know
5. No source of natural water

2.3 What type of crops did most households in this village plant commercially? (Can answer more than one item)

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

2.4 **From 1st July 2001 till now,** which kind of animals did most households raise commercially? (Can answer more than one item)

a. Cow
b. Buffalo
c. Pig
d. Chicken
e. Fish
f. Prawn
g. Frog
h. Other (specify)……

Part 3: Occupation

3.1 How many occupations are there in this village ? And what are 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 How many television channels does this village can receive?
……channel(s) (Specify)……

4.2 Does this village have a public telephone?

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

4.3 Do households in this village have telephones?

1. Yes No. of telephone(s)…… 2. No

4.4 Does this village have the mobile cellular phones signal?

1. Yes 2. No

4.5 Does this village have a functional broadcasting tower?

1. Yes 2. No

4.6 Does this village have radios for communication?

1. Yes No. of radios for communication …… 2. No

4.7 Is internet available in this village?

1. Yes 2. No 3. Do not know

4.8 What type of main road do people use for travelling within the village?

1. Soil 3. Asphalt
2. Laterite 4. Concrete

4.9 What type of roads do people use for travelling from this village to the district?

1. Soil 3. Asphalt
2. Laterite 4. Concrete

How far is this village from the district?…….Kilometer(s)

4.10 **From 1st July 2001 till now,** did the road in this village have a flood problem (that caused people inconvenience when they traveled to the district center)?

1. Yes (Specify months problem occurred)…… 2. No

4.11 Does this village have a bus route?

1. Yes 2. No

4.11.1 How often does the bus pass this village per day?

1. 1 Rounds 2. 2-5 Rounds 3. 6-10 Rounds 4. More than 10 Rounds

4.11.2 How long is each bus round? *(Specify in time such as every 30 minutes or every hour)*

……

4.11.3 **(If no)** How far is this village from the place where the bus route is located?

…… Kilometer(s)

Part 5 : Health

6.1 **From 1st July 2001 till now,** have any new diseases occurred in this village?

1. Yes → Specify disease……
……

2. No
3. Do not know

5.2 **From 1st July 2001 till now,** what kind of disease did most people in this village get sick ?

Specify disease……

Part 6 : Community Development

6.1 **From 1st July 2001 till now.** Have any project for community development in this village?

Project	1.Yes	2. No	Responsible agency
1. 1 Million Baht Village Fund	1	2	
2. 1 Hundred Thousand Baht Fund	1	2	
3. Activated Economic Fund (1 Million Baht for Each Tambon)	1	2	
4. Concrete road construction	1	2	
5. Electricity	1	2	
6. Water supply	1	2	
7. Water tank construction	1	2	
8. Aging	1	2	
9. Lunch for children	1	2	
10. Supplementary food for children (milk)	1	2	
11. Occupational promotion	1	2	
12. Garbage elimination	1	2	

Project	1.Yes	2. No	Responsible agency
13. Glorious village free from drug addict (White village)	1	2	
14. Sport court for anti drug addict	1	2	
15. Community store	1	2	
16. Other (Specify)……			
17. Other (Specify)……			
18. Other (Specify)……			
19. Other (Specify)……			
20. Other (Specify)……			
21. Other (Specify)……			

Kanchanaburi Project

Round 3 (Year 2002)

Institute for Population and Social Research, Mahidol University

In collaboration with

Ratchapat Institute Kanchanaburi

Household Questionnaire

Household ID ……
District ___ ___
Sub-district ___ ___
Village ___ ___
Household No. ___ ___ ____

Name of head of household ……..……...
Name of respondent …… Order in this household……..
If respondent is not a household member, specify the relationship…….
Specify reason why the household 's member could not give information …….
……..
House No. ……. Village No.……. Village name …….. Sub-district…….…….…...
District…….…….….. Kanchanaburi Province
Household type 1. Old 2. New
Location 1. Municipality 2. Rural area

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

Date of final interview.……month…...Start at…….End at…… 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……. ……..

Interviewer: Please record yours observation on the interviewed household

House characteristics

1. What type is the house?

    1. Single House
    2. Twin-house
    3. Block/Shop House
    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. Two stories house 3. More than two stories house 8. Not all of above

3. What is the material of the roof ?

    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 of the house walls?

    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. What are divisions in the house?
    1. Divided into permanent rooms 2. Divided by partition 3. No partition (airy room)

6. How is air ventilation and sunlight in the house?
    1. Good condition 2. Rather poor 3. Poor

7. Are animals raised under the house? (Ask only one-story single house)
    1. Yes Specify (kind of animals)……. 2. No 3. Not all of above

8. Are animals raised near the house?
    1. Yes Specify (kind of animals)…….. ...Far from house……meter(s)
    2. No

Part 1 : Basic Information on Household Occupants

1.1 No.	1.2 First/Last Name (Person who lived in this household more than 1 month)	1.3 From July 1,2001 till now, did this person lived in <u>this</u> household? 1. Yes 2. No	1.4 Resident status (see code)	1.5 Date of birth			1.6 Age (years)	1.7 Sex 1.Male 2.Female	1.8 Relationship with head of household
				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 here
2. Old member but moved away within last year
3. Old member and died (Skip to part 2)
4. New member and lives here
5. Temporarily lived here more than one month from 1st July 2001
6. Temporary member and died
7. Old member who moved away, but now move back
8. Old member who moved away

1.9 **Order No. of Father in household** **(If not have fill 0)**	**1.10** **Order No. of Mother in household** **(If not have fill 0)**	**1.11** **Marital status** **(see codes)**	**1.12** **Education level** **(The highest level of education)** **(specify)** **……**	**1.13** **Occupation** **(Ask only persons aged 4 and over)** (explain in detail on job descriptions, characteristic and type of job)

Code for 1.8 : Relationship with head of household

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

Code for 1.11: Marital status

1. Married 2. Divorced 3. Separated 4. Widowed 5. Single

1.1 No.	1.3 First/Last Name (Person who lived in this household more than 1 month)	(Q 1.14-1.15) Ask for person who answer 4,5,6 or 7 in Q 1.4 and new household						
		1.14 When did this person move into the household? (Month… Year….)		1.15 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 3. Other (specify District…… Province……...….Country…….……)			1.16 If the person did not live here, when did the person move away? (Month… Year….)	
		Month	Year	Place	District and Province	Country	Month	Year
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

Household Summary (For coder only)

Total members in this household …….persons

Type of this household

1. New household moved from other villages
2. New household that was separated from old household
3. New household occurring by unenumeration in the previous year (lived here before 2001)
4. Old household with household listing in 2001
5. Old household in last year, but has changed to a new in household in this year because head of household moved to a household with no household listing in 2001

(Q 1.16-1.18) Ask only the person who was an old member of this household but moved away (Answered 2,5 or 8 in Q 1.4) (Including old and new household member) (If answered 8 in Q1.4, ask only Q 1.17 and 1.18)				1.19 Does the person have difficulty in carrying out normal daily activities (Ask only the person who lives in this household or answered 1,4 and 7 in Q 1.4) 1. Yes 2. No					1.20 Cause of difficulties in carring out normal daily activities (record only one cause) (see codes)				
1.17 Where does the person live? 1. In this village (Fill ID which received in new Household) 2. In this Sub-district 3. Other (specify District……. Province……)			1.18 Where is the person's house located? (See code)	1. Eating	2. Defecation/Voiding	3. Bathing/Dressing	4. Daily activity in a house	5. Dementia/Disorientation	1. Eating	2. Defecation/Voiding	3. Bathing/Dressing	4. Daily activity in a house	5. Dementia/Disorientation
Place	District and province	Country											

Code for 1.18 The person's house location?

1. Municipality 2. Rural area 3. Abroad

Code for 1.20 Cause of self-care difficulties

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

Part 2: Mortality (Interviewer: Please check the household name list from July 1, 2001 till now. Has anyone died? If there is no one who died, please skip to part 3)

2.1 Did any person in Q 1.4 receive code 3 or 6?

1. Yes ↓ 2. No **(skip to part 3)**

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** Specify the cause of this person's death	**2.9** Place of death 1. Government hospital 2. Private hospital 3. Health center 4. Clinic 5. Home 6. On road 7. Other (specify) ……	**2.10** Did you register the death ? 1. Yes 2. No (Continue to Q 2.11)	**2.11** The reason for unregistered the death (Specify)……
		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 In general, what is the main language that members use for communication in this household? (only one answer)

1. Central -Thai
2. Northeastern -Thai
3. Mon
4. Loa -Soung/Lao -Puan
5. Burmese
6. Karen
7. Chinese
8. Other (Specify)…….

3.2 Does this household have electricity?

1. Yes
2. No

3.1.1 What type of electricity?

1. Public electricity
2. Village 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 Does this household have tap water?

1. Yes
2. No

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

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

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

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

3.7 **From 1st July 2001 till now,** did this household have enough water supply?

1. Yes 2. No

3.8 Does this household have it's ***own toilet***?

1.Yes 2. No

↓

3.8.1 Where is the toilet located? (can answer more than one item)

a. Inside a house b. At space under a house c. Outside a house d. Other (Specify)…….

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

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

3.9 **From 1st July 2000 till now**, did the household have any debt (100 Baht and over, in any form) (can answer more than one item)

1. Yes 2. No

↓

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	
g. Bank of Agriculture and cooperative	
h. Other Banks	
i. Government organization (i.e. pawnshop, cooperative in organization)	
j. Financial institution (i.e. private pawnshop, financial firm)	
k. SIF project	
l. Other (specify)……..	

3.10 Does your family ***own*** these items? If so, how many of each? (Please read to respondent all items)

Item	Number (If none fill -)
1. Colour T.V.	
2. VDO/VCD/DVD/Karaoke Player	
3. Sattellite disk	
4. Audio Equipment Stereo	
5. Mobile phone	
6. Telophone	
7. Computer	
8. Pump Water machine/Electricity machine	
9. Air conditioner	
10. Sewing machine	
11. Washing machine	
12. Microwave	
13. Refrigerator	
14. Boat (use motor)	
15. Bicycle	
16. Motorcycle	
17. Tuk tuk	
18. Local truck (use only in agriculture sector)	
19. Car	
20. Pick up/Van	
21. Bus/ Coach	
22. Tractor/Harvest Tractor/Trashing machine/Ploughing machine	
23.* Other (specify)……..……..	

*** Note : Do not record black/white T.V., radio, rice-cooker, iron, electric fan, electric-pot**

Part 4: Environment

Interviewer:	**'Land use for agriculture' could be on owned land or rented land**

4.1 **From 1st July 2001 till now,** did this household use land for agriculture ? (Both for selling and consuming) Compare agricultural products between the previous year and this year.

1. Yes 2. No

↓

Land use pattern	4.1.1 Land posession			4.1.2 Compare fertility of soil this year to last year (see code)	4.1.3 Compare production this year to last year (see code)
	1. Owner	2. Rent	3. Other (Specify) ……		
	No. of rai	No. of rai	No. of rai		
a. Rice farming					
— Rice field (transplanted paddy seedlings)					
— Rice field (not transplanted paddy seedlings)					
— Uplands Rice					
b. Sugarcane					
c. Cassava					
d. Corn					
e. Vegetables					
f. Fruit orchard					
g. Mixed field (Integrated farm)					
h. Tree (i.e. teak, eucalyptus)(specify) ……..					
i. Other crop(specify)……..					
j. Aquatic animals (specify) ……..					
k. Other animal raising (specify) ……					
Total	……	……	……	…….	…….

Code for 4.1.2 Fertility of soil compared with last year:

1. Increase 2. Decrease 3. Not change 4. No agricultural activity last year

Code for 4.1.3 Agricultural production compared with last year:

1. Increase 2. Decrease 3. Not change 4. No agricultural activity last year
5. No product in this year

4.1.4 Expenditure (Baht)					
Organic fertilizer	Chemical fertilizer	Herbicide	Insecticide	Wage	Compare expenditure with last year (See code)

Code for : Compare expenditure with last year

1. Increase 2. Decrease 3. Not change 4. No agricultural activity last year

4.2 <u>From 1st July 2001 till now,</u> did this household have enough water supply for cultivation?

1. Enough 2. Not enough 3. Enough for some seasons 4. Used the land for cattle

4.3 **From 1st July 2001 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	Month, which have the problem
1. Noise			
2. Smoke			
3. Smell			
4. Dust			
5. Water pollution			
6. Garbage/Waste products			
7. Mosquito			
8. Insect (Specify)……			
9. Other (Specify)……			

PART 5: Government's policy

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

1. Yes 2. No 3. Do not know

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

1. Yes 2. No 3. Do not know

5.1.2 (If yes) What is a type of participation? (Can answer more than one item)

a. Developed the project
b. Committee
c. Borrowed money from this fund
d. Member
e. Other (Specify)……..

The opinion of interviewer

♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠

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

1. What was the place where the interview was held like?
   1. Free from disturbances.
   2. There was some disturbance, but it did not affect the interview.
   3. There was a disturbance and it affected the interview.
   4. There was a lot of disturbances and the interview had to be stopped often /it is 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 there was another person in this interview, who was it? (Can answer more than one person)
   1. Other family members
   2. Friend
   3. Neighbor
   4. Others (specify)…….

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

5. How much cooperation did the respondent give 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 general, what was the quality of the data obtained from this interview like?
   1. Very good
   2. Good
   3. Satisfactory
   4. Not good, because ……

Kanchanaburi Project

Round 3 (Year 2002)

Institute for Population and Social Research, Mahidol University

In collaboration with

Ratchapat Institute Kanchanaburi

Individual Questionnaire

For Respondents aged 15 and over

Individual ID ……..

District ___ ___

Sub District ___ ___

Village ___ ___

Household No. ___ ___ ___

Individual No. ___ ___

Name of respondent …….

Name of head of household …….

House No ……. Village's No. …….. Village name ……. Sub-district …….

District …….. Kanchanaburi Province

Location 1. Municipality 2. Rural area

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

Date of final interview.……month…..….Start at…….End at…… 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 ……..……..…….

Part 1 : Personal Data

1.1 What is your birthday?

Day..... Month..... Year.....

1.2 How old are you?

Age in years ..... Years

1.3 Sex of respondent

1. Male 2. Female

1.4 What is your nationality? (Specify)…….

1.5 What is your marital status?

1. Married →

1.5.1.1 First marriage (specify) M/Y..……or age……Years

1.5.1.2 Last marriage (specify) M/Y..……or age…….Years

1.4.1.2 In last marriage, did you register?

1. Yes 2. No because……

2. Divorced
3. Separated
4. Widowed
5. Single

Ask only person aged 15-39

1.5.1.4 Do you plan to get married?

1. Yes, at age…….Years
2. No, because……
3. Not sure, because……

1.6 What is your (completed) education level? How long did it take to finish?

Educational level …….

Completed education in years …… or at age ……

1.7 What language do you know?

Language	Do you know? 1. Yes 2. No	Language ability			Do you use these language in your daily life? 1. Yes 2. No
		Spoken 1.Yes 2.No	Reading 1.Yes 2.No	Written 1.Yes 2.No	
a. Thai					
b. English					
c. France					
d. German					
e. Japanese					
f. Chinese					
g. Karen					
h. Mon					
i. Burmese					
j. Other (Specify)……					
k.Other (Specify)……					

1.8 Are you working?

1. Working 2. Looking for a job 3. Student 4. Housewife 5. Do not work

1.8.1 What type of work do you do?

Main job ……..……..…….. Minor job ……..……

1.8.2 How much do you earn (income)? (include all income from all jobs)

Annual income…….. Baht

Do not have income because…….

(record in 1.8.3 when cannot separate your income from the household income)

1.8.3 Your income included in household income …….. Baht

1.8.4 Reason for not working (Please Specify) ……

Part 2 : Migration

Interviewer: **The following are questions to *ask everyone***

Migration History

2.1 Where is your birthplace?

1. In this village
2. In this sub-district
3. Others (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

2.3 ***From 1st July 2001 till now,*** did you ever ***move to stay somewhere else for one month or more?***

1. Yes (Continue 2.3.1)
2. No (Go to part 3)

Have you ever stayed elsewhere during July 2001 till now? (Ask for person who answer "yes")

2.3.1 Month	**2.3.2** 1. Village…… 2. Municipality (Specify)…….. 3. Bangkok 4. Other village (Specify)…...…… 8. Abroad	**2.3.3** Sub-district	**2.3.4** District	**2.3.5** Province	**2.3.6** Country
July 2001					
August 2001					
September 2001					
October 2001					
November 2001					
December 2001					
January 2002					
February 2002					
March 2002					
April 2002					
May 2002					
June 2002					
July 2002					
August 2002					

<u>Please describe the order of move</u>
(Record every place and time that the respondents moved)

Code for 2.3.7 Person stayed with:

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

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 **major activities**? (Record job characteristics) 0 Unemployed (Go to 2.3.11)	2.3.10 **Money/items** 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
2. Seasonal work
3. Work
4. Finished work/work over
5. Want to change a job
6. Military service
7. End of Military service
8. Ordered move
9. Extend branch
10. Ordained
11. Study
12. Receive medical treatment
13. Visit friend
14. Visit relative
15. Vacation/make merit
16. In prison
17. Join spouse
18. Join parents
19. Delivery
20. Child care/elderly care
21. Do housework
22. Individual/family problem
23. Set up new family
24. Stay with parents home
25. Return home
26. Economic problem
27. More civilization
28. Home town
29. Leave the monkhood / nunhood
30. Other (Please specify)……

Part 3: Fertility

Interviewer: **The following are questions to ask only married women aged 15-50**

3.1 Have you ever pregnant?

1. Yes → No. of pregnancy…….
No. of children ever born……
No. of abortion / other…….

2. No (Skip to Q 3.4)

3.2 At this moment, how many of your living children do you have ? (include children 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 male, No. of female)

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 pregnancy and the total number of children. If not consistant, please ask questions again.)

3.4 Do you want to have more children?

1. Yes 2. No

3.4.1 How many children do you want more……person

1. Male……..person 2. Female……person 3. Not specify sex

3.4.2 When will you want more children?

1. Within 6 months
2. Within 1 year
3. Within 1-2 years
4. Within 2-3 years
5. Within 3-5 years
6. More than 5 years
7. Can not specify

3.5 History of pregnancy and contraceptive use in each month (The following are questions to ask woman aged 15-49)

Interviewer: Note ***single women who do not use contraceptive method or have not been pregnant.*** Please ask for the month of amenorrhoea (during 1st January 2001 till now). If have amenorrhoea, please fill **Am** in these months and fill **NS** (No sexual contact) in others)

If married, please ask for pregnancy and contraceptive use history during January 2001 till now and fill in abbreviation in the table for each month

Guidelines and abbreviations

1. Terminated pregnancy

(Ask for the result of pregnancy during January 2001 till now)

Record the result in the table as follows:

LB = Live Birth

SB = Still Birth (the gestation age was 7 months and over)

FL = Fetal Loss (Including spontaneous abortion and induced abortion)

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 during the gestation time (If had pregnancy before January 2001 please record the 1st month of pregnancy in question 3.6) Except the 1st month or 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 in the parentheses.

If "no", please ask for the reason for non-use contraceptive method and fill an abbreviation in the parentheses.

4. Postpartum amenorrhoea (Amenorrhoea : Am)

(After termination of pregnancy (LB or SB or A), please ask with this question "how many months did have amenorrhoea?)

Fill Am( ) in the month of amennorrhoea and then erase 1 month

If has postpartum amenorrhoea 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 the time of using this method. Please make sure that this method was used continuously more than 2 months. If did not use continuously for 2 months, ask for the intention to continue use for 2 months.

Please ask for the blank month or Am ( )

If changed method or discontinued between months, please fill the abbreviation of method used at the end of the month.

Abbreviation for contraceptive method

(1) L = Ligation
(2) V = Vasectomy
(3) Imp = Subdermal Implant
(4) I = Injection
(5) IUD = Intra Uterine Device

(6) P = Pill
(7) C = Condom
(8) W = Withdrawal
(9) R = Rhythm
(10) VM = Vaginal Methods
(11) IA = Induced Abortion
(12) Ab = Abstinence
(13) R + W = Rhythm & Withdrawal
(14) R + C = Rhythm & Condom
(15) C + W = Condom & Withdrawal

} Make sure that both are used at the same time

O = Other (Please note below the table)

Record details for checking

……
……
……
……
……
……

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 (-) = Amenorrhoea and do not use contraceptive method
(81) U = Unable (Including natural sterile and unexpected to have children
(82) NS = No sexual contact
(83) D = Desire pregnancy
(84) B = Breastfeeding
(85) SE = Side effect (afraid)
(86) DM = Dislike method
X = Others reasons (Please note below the table)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
2001												
2002												

X: Other reason (specify) ……

Interviewer: **Please check the table and make sure there is no blank box. After that please ask for the contraceptive which was used in January 2001. If respondent used contraceptive method, please continue to Q 3.6**

3.6 If yes, Please ask " When did you start to use the method which you used in January 2001?" (Make sure that did not terminate or was pregnant. If yes, ask for the last month started to use and did not terminate or became pregnant.

Contraceptive method .....

Start in Month ..... Year .....

3.7 For the last contraceptive method (exclude natural methods) or the method that you are using, where did you get contraceptive service from……

Interviewer : Ask only married women age 15-49 and currently living with her husband

3.8 Did you talk with your husband about the following issues?

Issue	Talk to husband 1. Yes 2. No	(If yes) How often? 1. Everyday 3. Seldom 2. Often 4. When have a problem
a. No. of children		
b. Contraceptive method		

Part 4 : Health Behavior

Interviewer : Ask everyone and explain the respondent that the following questions are for behaviors from 1st July 2001 till now or last 1 year

4.1 Normally, how do you have meals? (it means daily activities)

Meal	4.1.1 Eating (See code)	4.1.2 Start at (time)	4.1.3 Are you in a hurry having each meal? 1. Yes 2. No	4.1.4 Type of food 1. Beverage (Specify)…… 2. Beverage and snack (Specify)…… 3. Rice soup/salad 4. Main course	4.1.5 Kind of food 1. Made by yourself 2. Buy cooked food 3. Both	4.1.6 Reason for not eating (Specify)…
Breakfast						
Lunch						
Dinner						
Night time meal						

Code for 4.1.1 : 1. Yes 2. No (Skip to 4.1.6) 3. Uncertainly

4.2 Do you have these regular behaviors? (Please read all items to respondent)

Behavior	Do you behave? 1. Yes 2. No
a. Eating spicy food	
b. Eating raw /or half-cooking food (not including fresh vegetable)	
c. Eating fast food (i.e. sandwich, pizza, hamburger, fired chicken (KFC)	
d. Eating snack	
e. Eating supplementary food (i.e. chicken soup, bird nest, ginseng, herb juice)	
f. Taking some vitamins	
g. Reading books at night time	
h. Wearing shoes when walking outside a house	
i. Sleeping in mosquito nets or mosquito screens	

4.3 What type of water do you always drink?

Type or Water	Do you drink regularly? 1. Yes 2. No	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		
e. Soft drink		
f. Bottle water /Purify water		
g. Other (Specify)…….		

4.4 At this moment, do you take the following items? If respondent reply ***"Yes"***, please ask : ***How often do you use?***

Item	**Do you use it?** 1. Yes 2. No	**How often?** (see codes)
a. Cigarettes		
b. Beer		
c. Liquor		
d. Traditional Liquor		
e. Stimulant drinks		
f. Drug for relief pain (Narcotic drug)		

Codes for *"How often?"*: 1. Once a week 4. Four times a week 7. Everyday
2. Twice a week 5. Five times a week 8. Seldom
3. Three times a week 6. Six times a week

4.5 Excepted the daily activities including work, have you exercise regularly?

1. Yes ↓ 2. No (Skip to Q 4.6)

Type of exercise	4.5.1 Do you have an exercise? 1. Yes 2. No	4.5.2 How often? (See code)	4.5.3 How long? (See code)	4.5.4 Where? (See code)
a. Jogging				
b. Fast walking				
c. Arobic				
d. Traditional Chinese exercise				
e. Play sports				
f. Exercise				
g. Other (Specify)……				

Code for 4.5.2 : How often per week?

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

Code for 4.5.2 : Where?

1. Inside / or around a house
2. Park
3. The village's meeting hall
4. Public area in the village (i.e. school, temple)
5. Sport play ground of the village
6. Private sport club
7. Government sport center

4.6 If you have a free time (free from job or housework), what would you like to do most? (Specify 3 orders)

1…….

2…….

3…….

4.7 **From 1st July 2001 till now,** what time do you usually go to bed and wake up?

(Specify time : go to bed)……..

(Specify time : wake up)…….

4.8 **From 1st July 2001 till now,** how did you feel when you wake up in the morning?

(Can answer more than one item)

a. Fresh
b. Headache
c. Exhausted
d. Muscular fatigue (Specify: part of body)……
e. Drowsy
f. Throat irritation /dry mouth
g. Indifferent
h. Other (Specify)……

4.9 **From 1st July 2001 till now,** have you ever slept in the day time?

1. Yes ↓ 2. No

4.9.1 What event did lead you to sleep? How often? (Please read all items to the respondent)						
Event	1. Ever	(If ever) How often?			2. Never	8. Not applicable
		1.Always	2. Sometime	3.Seldom	2	8
a. Working	1	1	2	3	2	8
b. Studying	1	1	2	3	2	8
c. Reading	1	1	2	3	2	8
d. Sitting in a car	1	1	2	3	2	8
e. Driving	1	1	2	3	2	8
f. Watching television	1	1	2	3	2	8
g. Listening to music	1	1	2	3	2	8
h. Talking	1	1	2	3	2	8
i. Other (Specify)……						

4.10 **From 1st July 2001 till now,** did you have any problem about your sleeping?

1. Yes 2. No

(If yes) How did you try to sleep?

1. Take some medicines (Specify the name of medicine)…….
2. Other (Specify)……

4.11 **From 1st July 2001 till now,** did you snore when you sleep?

1. Yes 2. No 3. Do not know

4.11.1 How often?

1. Every night
2. Sometime
3. Especially, when felt exhausted
4. Did not know (how often)

4.11.2 Have anyone told you that you snore?

1. Yes 2. No

4.12 Normally, how many time do you brush your teeth? (Can answer more than one item)

a. After wake up in the morning
b. After breakfast
c. After lunch
d. After dinner
e. Before go to bed
f. Use artificial tooth

4.13 **From 1st July 2001 till now,** have you been to a dentist?

1. Yes 2. No

What are the causes (Specify)……

4.14 **From 1st July 2001 till now,** did you have any dental problem?

(Please read all items to the respondent)

Dental problems	1. Yes 2. No
a. Toothache	
b. Feel a darting pain of denuded teeth / sensitive	
c. Dental carries	
d. Dental accident i.e. fracture, worn out tooth (Specify)……	
e. Inflammatory gum i.e. bleeding, limestone(Specify)……	
f. Chewing problem (Specify)……...	
g. Other (Specify)……..	

4.15 Do you have receive the 30 Baht health scheme card (gold card)?

1. Yes

2. No (Why)……
……

4.15.1 Have you ever use the gold card?

1. Yes

2. No (Why)……
…….

Part 5: Aging

Interviewer : Ask only person who aged over 60

5.1 What activity did you do in most of time? (not included occupation or job that you have salary)

1……..

2……..

3……..

5.2 Have any member of household talked to you or asked for your advice?

1. Yes 2. No

5.2.1 What were the issues?

1……

2……

3……

5.3 Did you involve in household decision making?

1. Yes 2. No

5.3.1 What were the issues?

1……

2……

3……

The opinion of the interviewer

♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠♠

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

1. What was the place where the interview was held like?
   1. There was free from disturbances
   2. There was some disturbance, but it did not affect the interview
   3. There was a disturbance and it affect the interview
   4. There was a lot of disturbance and the interview had to be stopped often/it is 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 there was another person in this interview, who was it? (can answer more than one person)
   1. Other family members
   2. Friend
   3. Neighbor
   4. Others (specify)…….
4. Did such person answer or give opinions for the respondent?
   1. Yes, a lot
   2. Yes, sometimes
   3. Yes, little
   4. No
5. How much cooperation did the respondent give 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) ……..
7. Showed dissatisfaction with some questions. (Specify part/number) ……
8. In general, what was the quality of the data obtained from this interview like?
   1. Very good
   2. Good
   3. Satisfactory
   4. Not good

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