
United Nations Symposium on
Population and Housing Censuses
13-14 September 2004
New York

Census 2000 and its implementation in Thailand:
Lessons learnt for 2010 Census^{*}

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INTRODUCTION

1. Thailand's first population census was conducted in 1909 by the Ministry of Interior. Four subsequent censuses followed in 1919, 1929, 1937 and 1947. Since 1960, the National Statistical Office (NSO) has been responsible for undertaking population censuses every ten years under the 1952 Statistical Act (revised in 1965). In accordance with the United Nations' recommendation that countries should undertake national censuses in the year ending with 0 (zero) for the purpose of international comparison, Thailand has conducted its census in 1970, 1980, 1990, and 2000. In 1970, the first housing census was conducted simultaneously with the population census. The tenth population and fourth housing census was carried out in April, 2000. The NSO is currently planning to conduct its eleventh census in the year 2010.

I. METHODOLOGY FOR 1960-90 CENSUSES

2. For the 1960, 1970, 1980 and 1990 Censuses, the main method of data collection was field interview. After the data collection in all provinces was completed, questionnaires were sent to the central office in Bangkok. Manual editing, keyboard data entry, and other steps of data processing, including tabulation were then carried out.

3. For the 1960 Census, all persons and households were enumerated. For the 1970 Census with which the first housing census was conducted simultaneously, in non-municipal areas all persons and households were listed and enumerated. Whereas for the housing census, the complete enumeration was applied in municipal areas and the 25 percent sample enumeration in non-municipal areas.

4. For the 1980 and 1990 Censuses, in Bangkok and non-municipal areas, all persons and households were listed and simultaneously enumerated with the short form questionnaire except for the sample households (20%) which were enumerated with the long form questionnaire. In municipal areas outside Bangkok all persons and households were listed and enumerated using the long form questionnaire.

II. THE 2000 CENSUS

A. Preparatory activities

5. Preparatory activities for the 2000 Census began in 1998. Major activities that were carried out were the preparation of a calendar of operations, a request for permission from the Cabinet to carry out the census, and the preparation of the budget requested for the whole project covering the period of 1998-2002. This was followed by the announcement of a Royal Decree of the 2000 Population and Housing Census of Thailand. Questionnaires, manuals of instruction, materials and maps of enumeration areas were prepared. A publicity program was launched. Other activities included data processing and data dissemination work as well as a post enumeration survey.

B. Coverage

6. Population included in the census coverage is:
 - All Thai nationals residing in the country as of the census date (April 1, 2000).
 - Persons having their usual residence in Thailand, including those who as of the census date were temporarily away for education, field exercise, at sea or temporarily aboard.
 - Government officials, both civilian and military, including Thai diplomatic personnel and their families stationed aboard.
 - Civilian citizens of foreign countries having their usual residence in Thailand, or those who have resided in Thailand for at least three months.
7. Population not included in the census coverage is:
 - Hill tribes having no permanent place of residence.
 - Foreign military and diplomatic personnel and their families stationed in Thailand.
 - Civilian nationals of foreign countries who were temporary residents and had been residing in Thailand for less than three months before the census date.
 - Refugees or illegal immigrants located in camps provided by the government.
8. The household included in housing census coverage are:
 - All private households were included.

C. The 2000 Census data

9. There were 15 questions in the short form and 35 questions in the long form.

D. Methodology

10. All persons and households were being listed and simultaneously enumerated with the short form questionnaire except for the sample households (20% for Bangkok, municipal and non-municipal areas) which were being enumerated with the long form questionnaire.

E. Field personnel

11. Field interview was the major method for data collection but self-enumeration forms were more extensively used than in the previous censuses. Self-enumeration was more effective in apartment blocks. The period of data collection was 1-30 April 2000 with a census reference date of 1 April 2000. There were about 40,000 enumerators and 5,600 supervisors. The ratio was 1 supervisor for 7 enumerators. An enumerator was responsible for an enumeration district which included 350-450 households.
12. For non-municipal areas, school teachers were used for field personnel, while both school teachers and temporary employees were used in Bangkok and municipal areas.

Among the temporary employees, supervisors must have at least university education and, for enumerators, at least upper secondary level (Grade 11).

F. Data processing

13. A more decentralized arrangement and new technology were adopted in order to improve timeliness of data reporting. Manual editing and coding was carried out at provincial statistical offices (PSOs) in all provinces in Thailand. Then, the questionnaires were sent to the Central Office for data capture. An Intelligent Character Recognition (ICR) solution was introduced for data capture for the first time. Data processing, including tabulation and analysis, was carried out at the central office.

G. Budget

14. The total budget was about 581.4 million Baht or \$15.3 million. About half of the budget was for field enumeration. The distribution of the expenditure is as follow:

Field enumeration	49.0%
Data processing	12.5%
Mapping	5.1%
Questionnaire	4.5%
Publicity	4.3%
Publications	3.1%
Others (e.g. training)	<u>21.5%</u>
	100.0%

H. Major publications

15. The publications for the 2000 census were as follows:

- The preliminary report (based on the Listing Form)
- It reported the number of population by sex and the number of households for municipal and non-municipal areas, district, province, region and the whole kingdom.
- The advance report (from 1% sample households)
- It presented major characteristics of population and housing.
- The series of final reports
- These reports presented all the topics in the questionnaire for each province (76 provinces), region (4 regions), and the whole kingdom.
- Analytical reports (1 percent sample)

16. Special topics such as, economic activities, migration, fertility and social indicators were studied in detail.

I. Data dissemination

17. Data sets were made available as follows:

- Publications
- The 1% sample microdata
- Metadata, including definition, concept, data dictionary etc.
- On-line data dissemination, including summary statistical information on the World Wide Web (www.nso.go.th)
- CD-ROM, diskettes

J. Lessons learnt for 2010 census

18. With the successful completion of the 2000 Census, several lessons could be learned from the 2000 census which could be extremely useful for the preparation of the next census in 2010.

Be Prepared for Alternative Approaches

19. The preparation of the 2000 census coincided with the Asian Financial Crisis. The Thai government was under tremendous budget constraint and asked the NSO to consider alternative approaches in the conduct of the 2000 census. In fact, the option of cancelling the 2000 census was seriously considered. The NSO seriously considered using sample surveys to replace the population census. A proposal using two-stage design was formulated. In this proposal, 50% of the blocks in Bangkok and municipal areas and 50% of the villages in non-municipal areas would be selected from a complete listing. This would be the first stage. In the second stage, 20% of households would be selected from sample blocks and villages. No information would be selected from the non-sampled households.

20. It was fortunate that funding eventually came through for a complete census. But the preparation for an alternative approach has enabled Thai NSO to gain new insights. While a complete census is still desired, the NSO now is prepared for the possibility that an alternate design may be called for various reasons.

The Value of Publicity

21. The NSO has learnt an important lesson concerning the immense value of favorable publicity and the benefits deriving from committing a considerable proportion of the limited budget to the census publicity effort. The Secretary-General of the National Statistical Office has been a focal point for public relations activities as a result of media attention and favorable publicity. Rapid and authoritative response in the media has been instrumental for ensuring accurate reporting and overcoming misconceptions.

Changing Respondent Profile

22. One factor affecting enumeration work in Bangkok was that access to some types of housing was very difficult. This was also the case in previous censuses, but changes in the urban landscape had made this problem more severe. Residents of condominiums were

particularly difficult to reach. Usually there were security arrangements including guards who might need to be convinced that entry to the housing complex should be permitted. Neither they nor the managing companies were likely to give permission to enumerators to enter each apartment block to knock on doors. Instead, like any other visitors, enumerators had to gain entry using the intercom systems to contact each resident. Difficulties were also encountered attempting to contact the residents of shop-houses, a common form of housing in older commercial areas, and also the residents of mansions with heavy security.

23. The 2000 Census thus experimented with self-enumeration to overcome this problem. The self enumeration forms and a publicity leaflet were left in each resident's mail box where contact had been difficult, with the advice on when the enumerator would return to collect the form. Only the short form was available in self-enumeration format. Generally, the management companies of condominiums and other secure housing complexes had allowed their offices to be used as collection points for the self-enumeration forms. The respondents could also return the questionnaire free of postage through the mail.

24. Since a satisfactory level of self-enumeration response was achieved in the 2000 Census, more extensive use of self-enumeration in the Bangkok Metropolis and municipal areas in future censuses would be considered. There would be a review of the methods used to collect the completed forms. Experiences in Australia and the US would be considered.

Deployment of New Technology

25. The 2000 Census had adopted the ICR as the core technology in processing the detailed data. This technology has proved to be reliable and helped reduce data processing time. However, there have been some problems. For example, the distribution and return of census questionnaires must be done with caution, especially from the remote areas. Some questionnaires were found to be wet of rain or wrinkled and some were recorded with bad hand writing, and these had affected the quality of ICR.

26. The intention to change the census enumerator from school teachers to village volunteers who have less education in the next census will have some adverse impact on the plan to fully deploy ICR. More training would have to be provided. Better procedures in form handling would also need to be implemented. By 2010, more robust technology would be deployed as Thailand is fully committed to using ICT for greater productivity in government operations and in local governments.

Promoting the use of Census Results

27. The NSO is now in the process of improving its data dissemination system. The result of this improvement will help users to access data and information more conveniently through the on line "One Stop Service" system. Those who want to work with the raw data could also get access to data files via our Data Warehouse System (DWS) with charge and approval. The DWS for the 2003 Agricultural Census has just been completed. This arrangement would be adopted for the 2010 Population and Housing Census data dissemination.

28. Soon after the processing of the 2000 population and housing census was completed, the NSO had organized meetings with our key users both at provincial and country levels. This was to inform them of the availability and ways to access the census data as well as to

express our thanks for their cooperation to the census operation. We found that this has later increased the level of cooperation from parties concerned especially at the provincial level. It is worth sparing an amount of budget for such activities especially in areas where the level of data-provider cooperation is declining.

29. Along with the government decentralization of its authorities, more statistical data are needed at the community levels and at other levels of area aggregation. New activities such as the poverty mapping also utilize census data more intensely at the village level. To serve these demands for data, the preparation for the next census should take into consideration how to improve the quality of the data at smaller areas.

30. The demand from the users of socioeconomic data changes from time to time. There is a need to constantly monitor users' preferences so that the questions used in censuses and surveys can produce relevant data for users. The standardization of concepts, definitions and common reference regarding geographic and local administrative locations across surveys and censuses is extremely important to allow for data comparability over time. This would also make it easier for the merging of administrative data with survey and census data for intensive data analysis.

31. Thailand is in the process of establishing a National Information Center (NIC) where Census data, together with administrative and survey data would be aggregated for policy relevant analysis. Data aggregation would increasingly be used in the future. It is foreseeable that the 2010 census would form the backbone of the NIC, and its data would be compared against past data as well as being used as the reference point for future data merging. This is an important development, and it would affect how the database for the 2010 census will be managed and the choice of operational definitions for certain variables to ensure greatest conformity.