

Royal Government of Cambodia

General Population Census of Cambodia, 2008

Instructions for Cartographic Field Workers

On Drawing Enumeration Area Maps

National Institute of Statistics, Ministry of Planning

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For Drawing Enumeration Area Maps

1. Introduction

The National Census of Population in Cambodia in 2008 will be an important national endeavor to provide the valuable information about the land and people, which is indispensable for the development of the country. The Census covers the entire population of Cambodia and, when the census date comes, the census enumerators will visit all the houses from door to door without duplication or omission of any person or household.

Since one of the important purposes of the population census is to use its results for the national planning and other administrative purposes, the census has to cover the administrative areas at all levels and produce the results for every one of them. Cambodia has a hierarchy of administrative structure consisting of 24 provinces, 183 districts, 1,609 communes and 13,574 villages (as of 3 March 1998). The census enumeration areas are to be set up below the village level. The total number of enumeration areas demarcated in the last population census of 1998 was 23,016.

To assure the complete coverage of population, it is essential to divide the whole country into small enumeration areas (EAs) and each census enumerator is to survey his or her assigned enumeration area to count all the population found at the time of the census. Thus, the network of the enumeration areas (EAs) covers all the villages and the communes and ultimately the whole country.. Therefore, it is very important to properly delineate enumeration areas in each village to avoid any duplication and omission.

2. Various kinds of maps

At the time of the 1998 Population Census, there were no reliable maps in Cambodia on the basis of which EAs can be demarcated. So that the village maps and EA maps were the sketch maps drawn by hands. This time, however, the aerial photographs and the satellite photographs are available for the most parts of Cambodia, on the basis of which commune and village maps can be produced. However, the types of available photographs are not uniform throughout the country.

Today, many different kinds of maps are available in the market. But exact detailed maps with the scale of 1 to 5,000 needed for the census are not yet ready for our disposal. Based on the available satellite maps and other digitalized maps, National Institute of Statistics has prepared various types of maps for the cartographic field workers. Depending on the areas, cartographers are asked to use a different combination of maps.

Each cartographic field worker will be given several types of commune and village maps as indicated below, for which he or she is asked to demarcate EAs.

For communes:

1. Satellite commune maps with digitally demarcated village boundaries in it
2. White commune maps with landmarks and digitally demarcated village boundaries
3. White commune maps prepared for Health Facility Survey which contain some landmarks and rough village boundaries

For villages:

4. Satellite village maps
5. White village maps with landmarks
6. Hand written village maps prepared for the 1998 population census, with the demarcation of the enumeration areas.

3. Three types of communes

Depending on the available maps, communes are divided into three groups: *Area A*, *Area B* and *Area C*. **Area A** comprises about 165 communes for which detailed satellite maps are available. On these satellite maps, the village boundaries are already demarcated. **Area B** comprises about 955 communes for which white maps are provided. In these maps, the commune and village boundaries as well as landmarks such as roads, rivers, temples and notable public buildings are already printed. This information has been extracted from corresponding satellite maps. On the other hands, **Area C** has a white map in which only commune boundaries are drawn. A rough sketch of village boundaries are drawn in the commune map but no other geographic information is available.

Depending on the areas to go, the cartographic field workers are provided with the following maps:

Area A

Satellite commune maps

White commune maps with landmarks and the village boundaries

White village maps with landmarks

Area B

White commune maps with landmarks and village boundaries

White village maps with landmarks

1998 village maps with EA delineations

Area C

White commune maps (Health Facility Survey Maps) with some landmarks and rough village boundaries

White sheet of paper to which village boundaries are to be copied

1998 village maps with EA delineations

Three types of areas indicated above require slightly different mapping procedures. Since each cartographic field worker is expected to work in all types of areas, one should know, as the first step, in which type of area he or she will go to work.

The cartographic field workers will have training sessions at the beginning and will receive on-the-job training and instruction from the field supervisors. However, he or she has to work alone in the field most of the time, it is important to study this manual and refers to it whenever needs arise.

4. Cartographic materials to be carried by the field worker

Black Pencils

Blue/Red Pencils

Eraser

White sheet of paper to copy village map (Area C only)

Pencil sharpener or blade

Plastic sheet and plastic bag to protect maps and papers

Bag

Maps

 Satellite commune map (**Area A**)

 White commune map with geographic feature on it (**Area B**)

 White commune map (**Area C**)

 White village maps with geographic features on them (**Area A and B**)

 1998 village map (**Area A, B and C**)

Enumeration Area Data Sheet

5. General principles for EA demarcation

5.1 An enumeration area (EA) will be assigned to the population census enumerator at the time of the census to count all the population found there. Therefore the size of an EA has to be appropriate in terms of the number of households in it.

5.2 In general, the average number of households in an EA will be about 100. It may, however, be different from 100 due to the local situations. But the variation of an EA size is expected to be kept between 50 and 110. If the estimated number of household is below 50, a consolidation with an adjacent EA must be considered. If on the other hand, the estimated number of household exceeds 110, a separation of the EA into two or more EAs should be considered. More specifically,

- (1) Villages with about 100 households
In such as case, the whole village should be treated as one EA.
- (2) Villages with more than 100 households
The village should be sub-divided into 2 or more EAs. In such case, every EA should have an appropriate range of the number of households between 50 and 110.
- (3) Villages with less than 100 households
The whole village should be treated as one EA.

5.3 If you find a large condominium, an apartment building, a hospital, a dormitory and the like, where more than 50 households can be found, these buildings may be demarcated as an EA.

5.4 Roads, rivers, waterways and other physically identifiable objects should be used as a part of EA boundaries, whenever possible. If EA boundaries have to be drawn in open fields, forest or water areas where no physically identifiable objects can be found, any households that might be located near the boundary should be written down in the village map, so that there will be no confusions later on regarding the EA in which these households should be counted.

5.5 If you find people living on the water such as river, lake or sea, an EA should be set up covering an appropriate area of the water.

6. Procedures at the Commune Office

The Province Planning Office will officially advise the Commune Chiefs to help the cartographic field workers prior to the visit of the cartographic field worker. So that the cartographic field worker shall visit the commune office to receive appropriate instructions and assistance. He or she can compare the commune map received from the NIS with any map the commune office may have. If inconsistencies are found between the two, make appropriate corrections on the NIS commune map received by a blue pencil.

After that, the cartographic field worker, accompanied by a commune chief or a designated official, has to visit the chief of village. The working procedures there are provided below.

7. Procedures for checking the village boundaries

Ask the village chief if the village boundaries shown in the commune and village maps received from the NIS are accurate or not. If the actual village boundaries are different from the NIS maps, correct the boundaries in both the commune and village maps by a blue pencil. In **Area C** where no village map is provided by NIS, corrections must be made only on the commune map.

In the **Area C** where no village map is provided, the field cartographic worker has to draw a sketch of the village boundaries on the given white sheet.

8. Procedures for demarcating the enumeration areas (EAs)

- 8.1 In all **Areas A, B and C**, find the village chief and ask him about the general conditions of the village population, especially any significant changes in the number and the distribution of residents in the village since the last population census of 1998.
- 8.2 If there has been no significant change, show him the 1998 village map in which EAs were demarcated and ask him about the approximate number of households in each EA. If the estimate is found to be within the standard range, say 50 to 110, ask for his judgment as to whether the old EA boundaries are still appropriate for use in the 2008 census. If the answer is yes, copy the old EA boundaries to the new white village map (and the satellite map in case of **Area A**) or the sketch village map prepared in 4.1 (in case of **Area C**).
- 8.3 If there have been significant changes in the number or the distribution of village residents, consult with him what could be the appropriate way to demarcate the EAs for the village. Be sure that the suggested EA boundaries can clearly be seen or identified by the census enumerator who will be assigned to the EA in the future. If necessary, visit the pivotal points on the boundaries to confirm the situation. When new EA boundaries are judged appropriate, write down the new boundaries on the white village map.
- 8.4 In the **Area A** where the EA boundaries are demarcated on the satellite images, copy the EA boundaries to the white village map.
- 8.5 Using GPS, measure the location of the house of village chief and keep the records.

8.6 Finally, ask the village chief to give signature to the designated space in the white village map. The cartographic field workers also have to sign on the white village map.

8.7 Before leaving the village, complete the Enumeration Data Sheet.

9. EA maps (no work is needed at this stage)

In the 1998 population census, the cartographic field workers were asked to prepare the detailed EA maps. However, such tasks, namely the preparation of an EA map with the listing of individual houses and the recording of detailed landmarks, will be conducted in the preparatory phase of the census enumeration immediately preceding the census date of 3 March 2008. Therefore, the preparation of EA maps is not required at this time.

10. Supervision of cartographic works

The supervisors in the field may inspect the progress of cartographic field works from time to time. The field workers may also be called up to assemble at the provincial headquarters to report the progress to the supervisor, ask questions and receive additional instructions. The record of GPS measures can be handed over to the supervisor in such occasions.

Enumeration Area Data Sheet

Page /

Name of Province:

Name of District:

Name of Commune:

Name of Village:

Village code No.	Name of village	Number of group	Number of EAs	Number of households	Population

In case of provinces other than Phnom Penh Municipality, ignore the column "Number of groups".

Name and signature of cartographer:

Date

.....

Name and signature of supervisor:

Date

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