

**Expert Group Meeting on Effective Use of IT in Population Census  
UNESCAP, Bangkok, 10-12 December, 2007.**



## **Use of Digital Maps in Census Operation**

By

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### **Introduction:**

Map is an essential tool to divide the whole country (Bangladesh) into Enumeration Areas (EA) containing on an average 100 households in each EA in undertaking Population Census. Use of inaccurate maps in this regard will invariably lead to coverage errors. For this reason Bangladesh Bureau of Statistics (BBS) procured aerial photographs for the entire country to prepare digital EA maps by interpreting of those aerial photographs. As a whole the aim is to contribute to an increase in the national technical capability and capacity to implement population policies and programmes by developing and strengthening competence of the nationals.



## Objectives of Digital Mapping:



- To divide the whole country in Enumeration Area (EA) containing on an average 100 Households (HH).
- To develop a database of geographic boundaries in digitized form with real coordinates.
- To reduce under coverage and over counts in census operation.
- To Strengthen the capacity of Bangladesh Bureau of Statistics (BBS) through maps supported data collection system.
- To ensure the optimum use of database for digital maps in conducting future Census and Sample Surveys in BBS.
- To facilitate in dissemination of BBS Census and survey results in Thematic form.



## Main Functional Steps



- Geo-referencing and mosaicing of aerial photographs.
- Generation of thematic data layers in Digital format.
- Generation of boundary layers in Digital Format.
- Generation of enumeration area lines.
- Composition of maps.
- Management of vector data layers
- Archival of the generated database maps.



## Uses of Map in Census and Survey



- **Maps ensure consistency and facilitate census operation (pre-enumeration).**
  - BBS staff divide whole Bangladesh (on mauza maps but village wise) into small reporting units, which call Enumeration Area (EA) thus provide an essential control device that guarantees consistency and accuracy of the census.
- **Maps support data collection and can help monitor census activities (during enumeration).**
  - During the census, maps ensure that enumerators easily identify their assigned set of households.
- **Maps make it easier to present analyses and disseminate census results ( post enumeration).**
  - Cartographic presentation of census results provide a powerful means for visualizing the results of a census (thematic mapping).



## Uses of Enumeration Area Maps



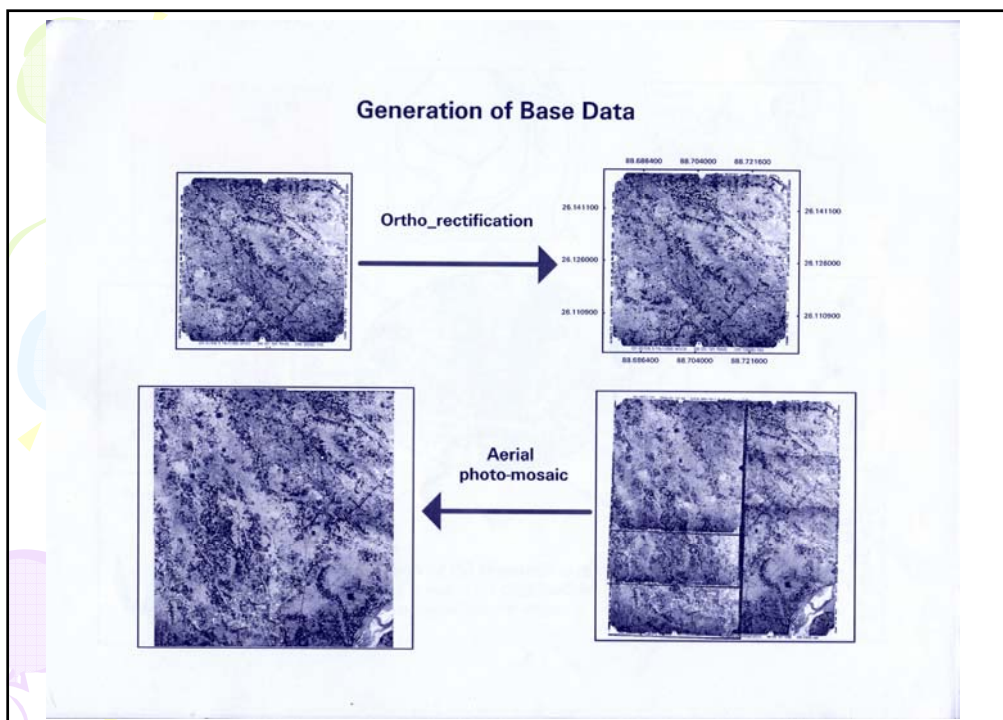
- **To locate enumeration area of an enumerator.**
- **To determine Precisely what area an enumerator is to cover (EA boundary are indicated in a special line/symbol or color).**
- **To plan the best route of travel in order to cover every place of an enumerator's enumeration area systematically.**
- **To mark the location of houses.**
- **To add new streets and their names, cross out features that no longer exists and update the map for future use.**

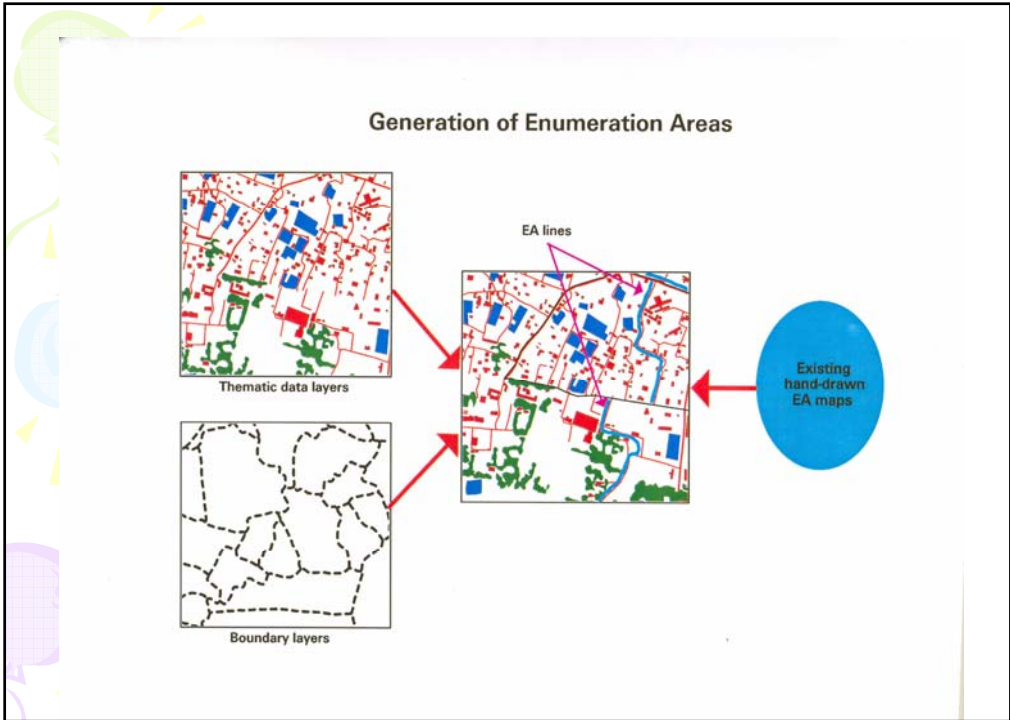
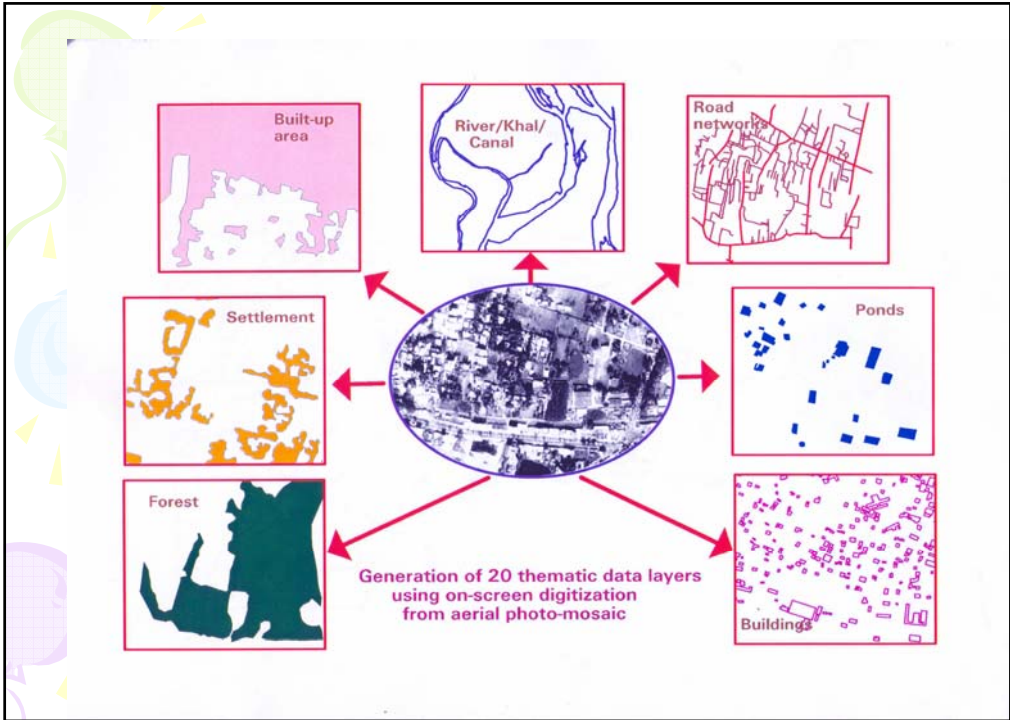


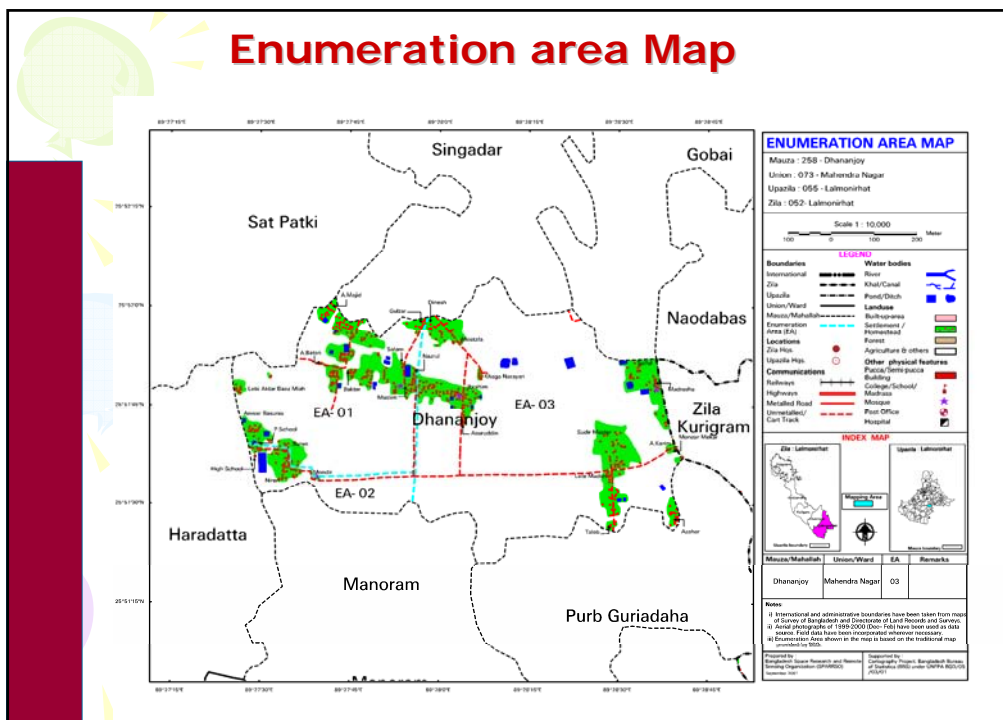
## Composition for Generation of Enumeration Area (EA) Maps.





- To generate Enumeration Area (EA) maps for Urban area the scale is of 1: 5000; for densely populated area (city Corporation) scale is 1:2500; and for rural area scale is 1:10000.
- For usability of maps adjacent areas must be in the same scale.
- To contain all thematic layers along with EA lines and administrative boundaries.
- Rivers are shown in full extent along with be boundaries and line features also are shown outside the mauza (lowest administrative unite) boundary to show the direction.







## Problem :

- Inadequate technology in BBS.  
(BBS is doing the job in collaboration with SPARRSO)
- Lack of trained human resource in digital mapping.
- Lack of adequate fund for digitization.
- Shortage of expertise in management level.
- Lack of training facilities in digital mapping operation.



## Recommendations:



- To introduce latest GIS/GPS/Digital map technology in BBS (GIS lab, server with 10 workstation)
- To provide more fund to strengthen the GIS Mapping Project activities.
- To provide fund for training (local & international)
- To provide assistance (financial and technological) to establish digital data archiving system.
- To ensure the use of digital maps in next Censuses and Sample Surveys.



**Thank you  
for  
Your patient hearing**