

# NARRATIVE OF DIGITIZATION- SUCCESSFUL DRIVE FROM PAPER TO PAPER LESS MAPPING

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# INTRODUCTION

- Geographic Information System (GIS) is a computer-based system that allows the users to store, analyze, manage and edit the geographical data.
- When using analog technology, the map served two functions:
  - (a) as a storage medium for spatial data, and
  - (b) as a medium of communication between humans about spatial relationships.
- Digital technology has separated these functions into:
  - a) a digital database containing spatial data, and
  - b) the ability to create maps from that digital data through automated system.
- GIS gained fame as modern mapping technique in the late 20<sup>th</sup> and early 21<sup>st</sup> century.

# WHY MAPPING THE CENSUS/SURVEY AREA IS IMPERATIVE?

- Map is the visual representation of earth's pattern as a whole or in parts on flat surface drawn with conventional signs corresponding to predefined scale with an aim to illustrate maximum information while occupying minimum space.
- Census and Survey mapping is the process of dividing the country into Enumeration and Supervisory Areas for proper coverage of area and population during Census/Surveys.
- GIS applications are now used in census/survey mapping extending the scope of geographical data analysis, evaluation, retrieving and sharing with greater accuracy and ease.

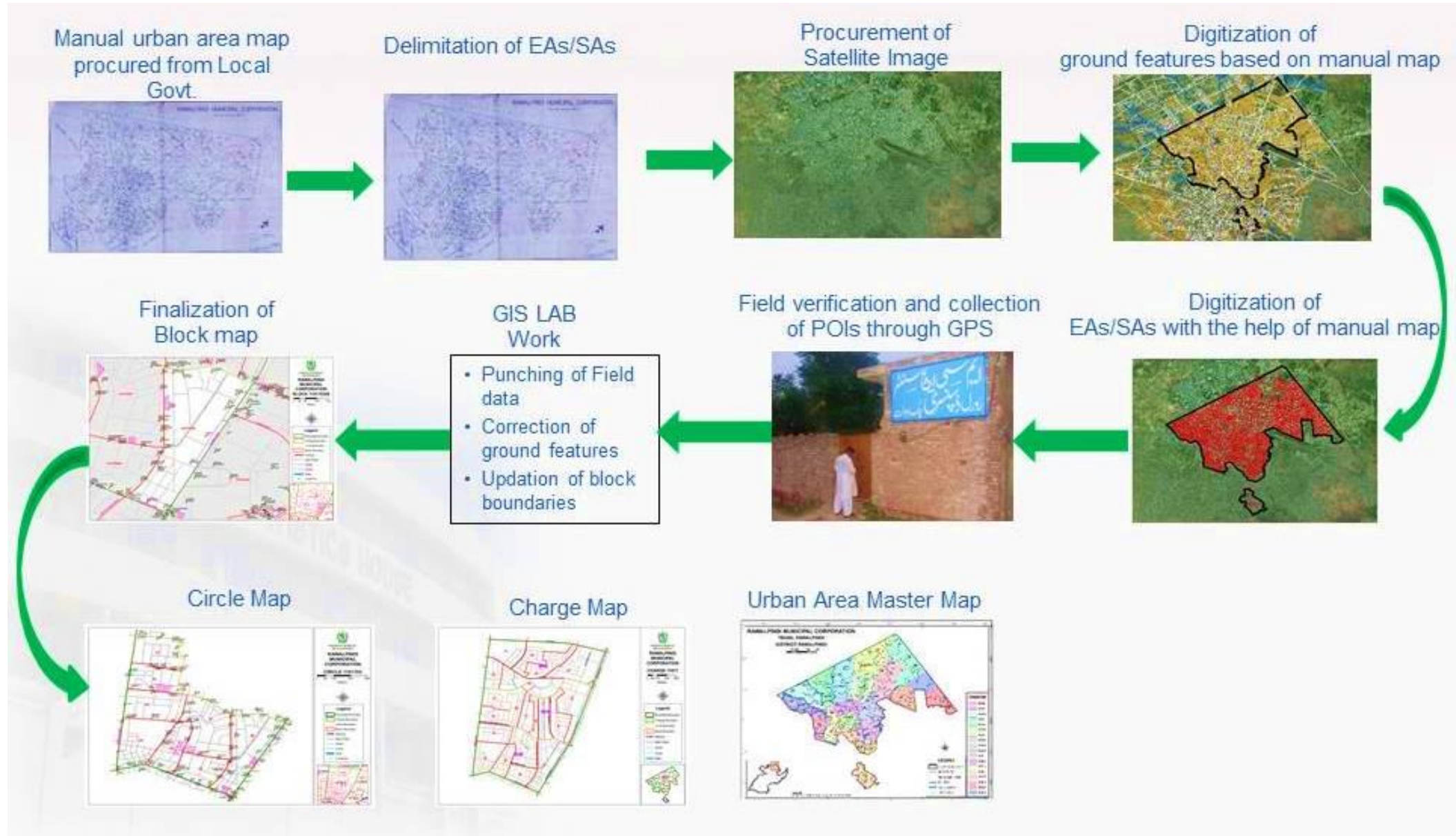
# METHODOLOGY

First five censuses were executed in Pakistan utilizing manually prepared Enumeration and Supervisory Area maps. First time in the history of census taking in Pakistan, digitized urban area maps were used in Census-2017 for data collection.

Mapping procedure adopted for the Census-2017 is as follows:

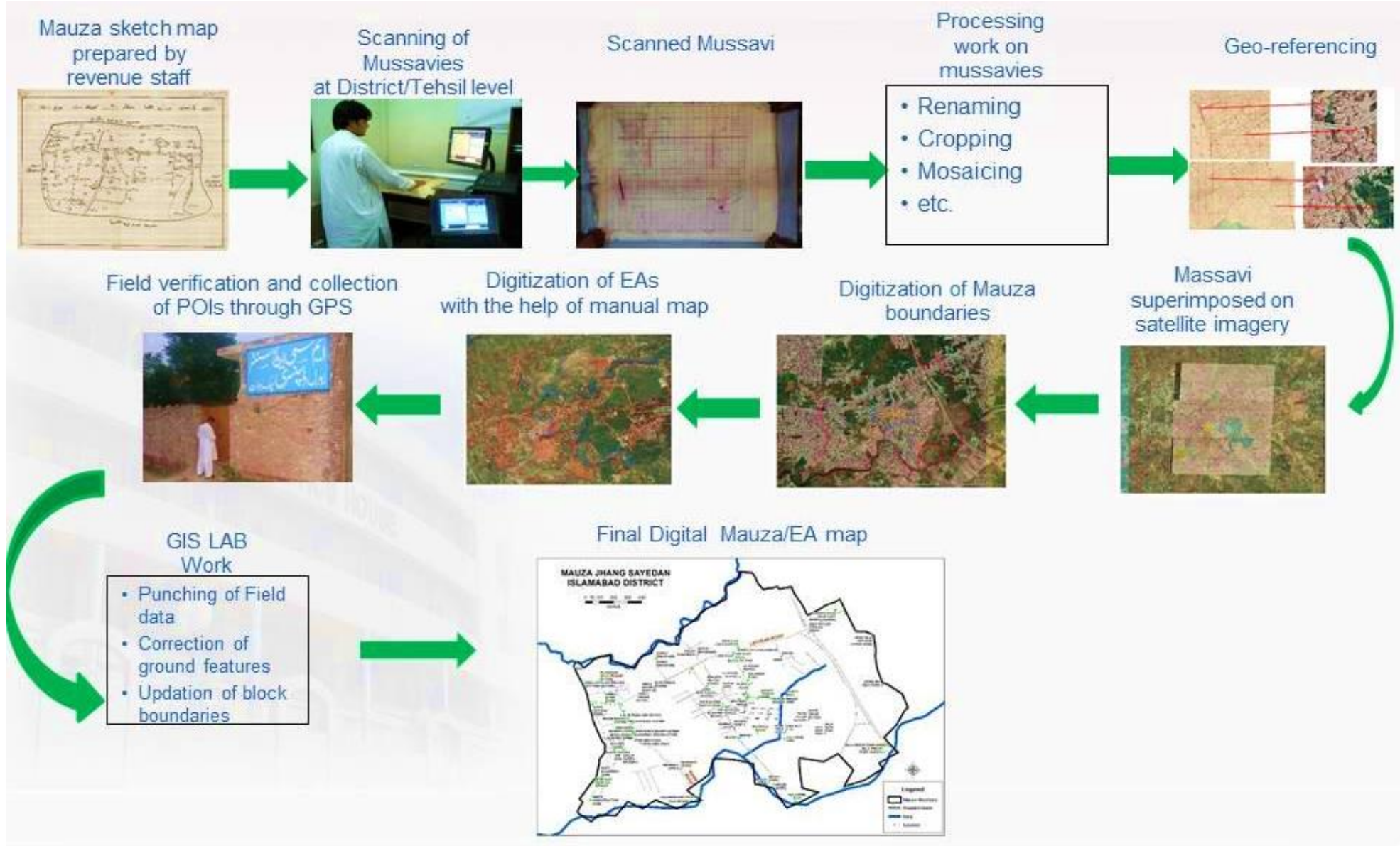
- a) For the big urban areas two types of maps were prepared  
1) Master map which cover the entire municipality for delimitation of census charges and circles (SAs) and 2) Sub unit map to delimit the census blocks (EBs).
- b) For small urban areas having population upto 50,000 according to 998 census only single type of map was designed to delineate both census circles and census blocks.
- c) In case of rural areas, *tehsil/taluka* maps were prepared to delimit census charges and circles (SAs) while census blocks (EBs) were demarcated on *mouza/village* maps in respect of settled and unsettled areas.

# PROCEDURE OF URBAN BLOCKS DIGITIZATION





# PROCEDURE OF RURAL BLOCKS DIGITIZATION



# RESULTS

Applying the GIS mapping, the digitization work of all **55,560** Urban Blocks (EBs) of 616 Urban Areas and **24,235** out of 113,384 Rural Blocks(EBs) has been completed so far. GIS census mapping in Pakistan has following preemptory limitations in its applications:

- Deficiency of technical expertise/GIS professionals.
- Expensive GIS softwares and related support as well as professionally trained work force that is also expensive and costly to retain.
- Costly and outdated satellite imagery as well as their unavailability for the whole country especially for rural areas.

# CONCLUSION

- Diffusion of GIS technology in the mapping procedures has completely altered the way in which the country can be mapped.
- GIS has not only made certain the legitimacy of census mapping as well as yield the most organized and disciplined census in the census history, through the credible demarcation of EBs and SAs.
- The benefits of GIS mapping are not restricted to the census/survey and it also opened the way for more informed decision making at governmental level and invited the stakeholders for further research in this domain.

Thanks