ISSN No:-2456-2165

Application of Digital Technologies and Social Media in Listing and Mapping of Historical Places - Listing, Mapping of Historic Samsthans /Zamindari settlements of Telangana and Andhra Pradesh, India

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Abstract:- **Listing and Mapping of historic sites are the very first steps in any heritage conservation process, especially for policy-making and grading at city and area-levels of intervention. Listing and mapping of historic Samsthan and Zamindari (aristocratic) Towns and Villages located in the two Indian states of Telangana and Andhra Pradesh has been taken up by the author as part of Doctoral research work in Architecture Department of Jawaharlal Nehru Architecture and Fine Arts University, Hyderabad, India, for which digital technologies were extensively used. This paper discusses the useful application of digital technologies in heritage conservation, the research methods adopted and elaborating on the challenges faced and opportunities provided by the digital, internet technologies in mapping and interpretation of archival data. Digital, internet-based technologies and social media networks are indeed the new research and computational tools for completing historical research in faster and more precise ways.**

Keywords:- *Heritage Conservation; Historic Settlements; Listing; Mapping; Zamindar; Samstans; Telangana; Andhra Pradesh; Pre-Independence India; Historical Studies; Colonial Period.*

I. INTRODUCTION

The two States of Telangana and Andhra Pradesh are situated in the souther peninsular region of India. The State of Telangana was bifurcated from erstwhile united Andhra Pradesh in 2014 forming the youngest, the 29th State in Union of India with Hyderabad as its Capital city.

The present Doctoral work in the Architecture Department of School of Planning and Architecture, of Jawaharlal Nehru Architecture and Fine Arts University, Hyderabad, India, was started in 2009 in united Andhra Pradesh and later adapted to situation of bifurcated two States. The topic of research on 'Planning for Conservation of Unprotected Heritage' was proposed to be conducted through 'Study of Samsthan and Zamindari Palaces of Telangana and Andhra Pradesh', as representing Unprotected Heritage ie., the historic sites which do not come under any heritage laws or regulations in India.

India works on three-tiered planning systems of National, State and Local levels with District & Metropolitan areas as Regional/ Sub-regional levels. Sectors, powers and responsibilities are distributed over different levels of governance and administration. Relevant policies and statutes are made at the Central and State Governments for implementing projects/ schemes at National, State, District, Region and Town/Village levels [1]

The present research attempts to study the prevalent ground realities of Unprotected Heritage, located in the jurisdictions of State & Districts, Metropolitan & Local Bodies to propose strategies for dovetailing heritage conservation into the existing planning and development systems and institutions.

II. GEOGRAPHICAL, HISTORICAL AND POLITICAL CONTEXTS OF STUDY SITES

Prior to Indian Independence in 1947, the geographical regions of the present States of Telangana and Andhra Pradesh were under the rule and administration of the Princely State of Hyderabad ruled by the Nizams and British territories of Madras Presidency respectively.

Samsthans and Zamindars were feudal lords, local chieftains, native rulers and sub-regional heads in pre-Independent India who had varying judicial and revenue powers in different regions under different times. Zamindars, were the landlords or officials [2] in Colonial India between mid 18th Century and 1947 and Samsthans existed from ever before as royalty [3] ruling 'little kingdoms', sub-regional units reporting to the emperor [4]. Prior to Indian Independence in 1947, the Samsthans and Zamindaris had an important role to play in the local, sub-regional, even at the State-level politics and administration.

ISSN No:-2456-2165

Each Samsthan/Zamindari – the geographical region under them, had its Head Quarters in a Capital city/town, and the Samsthan/Zamindari was referrred to by the Capital city/town. For example, Gadwal, Nuzvid, Venkatagiri, Vizianagaram and others are all the names of the historic Samsthans/Zamindaris as well as towns and cities of their Head Quarters. Over the years, while some of these places continue to be referred to by their old/historic names, some of the historic place names are either modified or seized to exist.

Today, in post-1947 Independent India and post-2014 bifurcated States (Regional tier) of Telangana and Andhra Pradesh, these Samsthan/Zamindari settlements are spread across nooks and corners of the two States. They exist as statutory cities, towns, villages falling under different jurisdictions of Districts (sub-regional) and Local bodies (Municipalities, Municipal Corporations and Urban Development Authorities).

Fig. 1. An example of Samsthan/Zamindari Palace- Late 19th/Earty 20th Centruy architecture- Photo of Mylavaram Zamindari, Mylavaram, Krishna Distrtict, Andhra Pradesh. Photo by Author

The residential Palaces and other structures were built by Samsthans/Zamindars between 18th to 20th Centuries, using architectural features characteristic of Indo-European style, contemporary materials and technologies. These buildings are important in understanding the transformation of styles and forms of houses, as *"in tracing the modern history, there are often references to eighteenth and nineteenth centuries because twentieth century changes were rooted in the past"* [5]

The palaces of the Samsthans/Zamindaris hold historical, architectural and historical significance deserving to be declared as Heritage, with proper policies for their conservation and protection. For declaration of historic settlements and buildings as heritage with a suitable policy, it is needed to list and map the historic places from archival data and position them in the present administrative jurisdictions. The process of mapping historical data from different periods, overlaying on to the administrative jurisdiction maps of districts [6] and the methods applied in the current research is explained below.

III. RESEARCH METHODOLOGY – STAGES OF WORK:

This doctoral research work on 'Planning for Conservation of Unprotected Heritage' was designed to be conducted in four stages. This paper presents the process adopted in completing the Stage One of Research Work which was to listing and mapping of Samsthans and Zamindari settlements from data collected from archival and historical sources and literature.

As mentioned in the introduction of this paper, this doctoral work was started in 2009 in the united Andhra Pradesh and in 2014, the State was bifurcated into two separate States of Telanagana and Andhra Pradesh. Accordingly, the data collection from primary and secondary sources was carried out in two phases: one in United Andhra Pradesh (2009-2014) and then in two States of Telangana and Andhra Pradesh (2014-2018).

Between the two phases, there has been a tremendous leap in the Internet and satellite technology, which has aided in mapping and locating these places more precisely. The details of the research process are given below explaining the challenges experienced in data collection, interpretation and analysis in the early stages of research work and how technology provided a leap forward in the later stages.

IV. DATA COLLECTION & INTERPRETATION – CHALLENGES AND OPPORTUNITIES

Data requirements for Stage One of the chosen topic, Listing and Mapping of Samsthans & Zamindaris, fall within the following conditions:

- Zamindaris & Samasthans belong to a historical period between mid-18th to 20th Centuries
- During this period, the geographical areas of present day Telangana and Andhra Pradesh were under the rule of Nizams of Hyderabad and Madras Presidency of the British India government.
- The numbers and boundaries of Samsthans and Zamindaris constantly changed over three centuries and it was not a single List of places.
- Data is sourced from published/unpublished sources of archival material, historical records available in English and Telugu (regional language of States of Telangana and Andhra Pradesh)
- Data and different Lists were processed as part of this research programme for preparation of final Lists and Maps after locating places in the present day maps.

The Challenges faced in carrying out research work in two phases and opportunities provided by growing technologies is explained below:

A. **Phase–I of research - 2009 to 2014 - Data Collection - Listing & Mapping - Resources and Challenges**

- Printed maps (old and new) were used for location of places – Official Survey of India topographical sheets and district maps
- Online maps (Google and other maps were still under development during this period and not all places were located)
- Data collected from regional language literature (Telugu): Pronunciation and spelling of names of places taken from Telugu did not match the place names in the maps. For example: A place 'Atmakur' can be spelled as 'Atmakoor' or 'Atmakuru' or 'Atmakooru' too. 'Ooru' in Telugu means town or village and most of the names end with a 'U', so U in end of Valluru, Saluru of Telugu spelling would be Vallur and Salur in English
- Style of historiography and writing in Telugu sources differs majorly from the English sources. Study of Telugu sources required careful attention in interpretation of meaning but still left with ambiguity. For example: a place located on northern or southern lands of rivers Krishna or Godavari would be referred to as "Krishna *teerana*" or "Godavari *mandalam lo*", which does not specify north or south for location on maps
- The archival, historical British records/reports used archaic spellings of places, which could not be located in the Post-Independence period. For example for the present day 'Krishna' district, the old records used the spelling of 'Kistna' and for 'Visakhapatnam' the spelling used was 'Vizagapattanam'. Kakinada was spelt as Cocanada, Srikakulam as Chikakulam, Srikalahasti as Calastry. Pithapuram was Pittapore, Venkatagiri was Vencatagherry
- During the pre- and post-Independence periods too, States, District boundaries were changed and different period maps had to be referred to for information. For example: Krishna district has been bifurcated into Krishna and Guntur Districts; Vizianagaram is made out of earlier Visakhapatnam District.
- Repetitive place names and ambiguity over exact district location also created much confusion in identifying and location places on maps. For example: Places like Atmakur, Gollapalle, Ramapuram, Ramachandrapuram, Venkatapuram and many other, are seen in different districts, and within the same district too.

Extensive field trips were conducted and cross verification of maps & sources was done between 2011-2013 even after which a few places could not be located and ambiguity continued. An entirely new exercise was started in the Second Phase from 2014, after bifurcation of Telangana and Andhra Pradesh

B. **Phase–II of research = 2014 to 2018 – Data Interpretation - Listing and Mapping- Resources and Opportunities provided by digital, internet technologies and social media**

Most of the challenges and issues faced during the first phase of research were resolved by the second phase, due to advancement of digital and internet technologies, satellite, remote-sensing and geo-technologies and expanding social media usage, discussed as below.

Even during the first phase research period between 2009 and 2014, internet and geo-mapping were quite known and established, during which time a hand-held GPS device was used in field studies, geo-coordinates were taken on site and transferred on Google Earth images for locating on maps and tracing of site contexts and building layouts. As years progressed, technology grew significantly to mobile phone - enabled geo-technologies and mapping.

A point to be noted here is that these are the challenges and opportunities for individual researchers such as the present author, carrying out research without any external funding or support. The scenario for institutional researchers would be have been different due availability of funding, better resources and higher grade technologies.

The details of the methods and techniques used for mapping of Lists of Old Samsthan and Zamindari Towns and Villages are given below:

i. Google Maps and Google Earth Images:

Google Maps and Google Earth images are the first basic search on the Internet to pin point location of the listed Samsthan and Zamindari towns and villages. Google maps give the geo-coordinates, which is extremely useful in geo-tagging and importing to GIS platforms.

Most of the places were found on the Google maps/Google Earth images, if the correct spelling of the place, along with the Mandal and district details were known. However, smaller villages and hamlets could not be located using Google.

A significant point in the context of historical research is when old, historic places which were prominent, active urban centres a century or more before, lose their importance over time or there is a spatial shift of nodal power centres or get old places get merged into more famous places or any such other situation, latest geo-maps tend not to mark old names of the place. The old urban villages or areas which were full settlements a few decades or a century back, subsequently merging into a bigger town, presently existing as an area or locality of the new town, are not found on Google Maps search. A deeper search of the new towns and cities was done for digging out the location of historically prominent places.

ii. Map Search Engines – Geo-tagging Platforms

A few map search engines with geo-tagging links have been extremely useful in not only finding places, but also with geo coordinates. A website of World City Database lists all names of places in an alphabetical order, categorized by Country and then States. Places with same names but varying spelling, same names with same spellings but located in different parts of the State, are all listed and hyperlinked to map location with geo-coordinates. Websites of tripcarta.com, mapcarta.com, geonames.com and other websites have map/satellite image link to those tiny villages and hamlets that are not listed in Census or could not be located on Google maps.

One such example is a Minor Samsthan from Telugu literature, by name 'Pendota'. These map search engines have taken to the location to 'Pendota vagu', a water canal. After thorough examination, the possibility that the historic place got submerged into the water canal was explored. This was done as the description of the location given in the literature exactly matched the location of Pendota Samsthan, which does not exist anymore. A few places which could not be located in the first phase of research could be listed and mapped using map-search engines.

iii. Postal Pin code search:

A postal Pin code search was also helpful in locating old settlements which have become parts/localities of present day important towns. The places could be located upon linking to the Head Post Office of the area/locality and re-searching on Google maps. The geographical database website of geonames.org, a pan-Global data/map search platform, provides the option of Pin code search, leading to not only the Country, State and area names but gives geo-coordinate links to Google map locations of places.

iv. Satellite and Remote Sensing Technologies: Bhuvan and USGS

The Government of India website, maintained by the National Remote Sensing Centre of Indian Space Research Organisation, is an open source, free downloading Geo-portal linking departmental information with satellite and environmental data, including Protected Monuments under the Archaeological Survey of India. Bhuvan is also used for cross verification of district, Mandal and town/village boundaries. The USGS is a US-government-run Remote Sensing and LandSata data, a thematic search platform which enables easy geo-searching of places across the globe

v. Digital libraries- Internet access

Access to Digital libraries is a big strength in expanding the research base, to resources available across the globe, though some of them are made open sources, some others are restricted to members only.

vi. Internet technologies and Crowd Sourcing – Data Sharing and Social Media networking

Another big leap in the last few years has been extensive usage of the Internet by people through social media platforms. The data available on the Internet about historic, remote places that were hitherto unknown or famous has increased enormously from year to next. People upload photos, videos sharing their visits to places on their personal social media accounts and blogs, media houses share programmes, features on websites, YouTube accounts. And there are the crowd-sourced sites such as Wikipedia, Wikimapia etc where compiled information about places, linked with geographical coordinates is available free of cost to everyone. The Internet and social media has been of tremendous help for mapping and study of Samsthans and Zamindari places, especially those located in remote locations, away from popular towns and tourist sites.

V. RESEARCH FINDINGS – STAGE ONE- FINAL LISTS AND MAPS

i. Listing – Process and Statistical Findings:

As mentioned earlier in this Paper, prior to Indian Independence in 1947, the geographical regions of the present States of Telangana and Andhra Pradesh were under the rule and administration of Princely State of Hyderabad ruled by the Nizams and British territories of Madras Presidency respectively. The process of Listing of Samsthans and Zamindaries of these two geographical regions and final statistical findings is given below.

- **Andhra Pradesh - Under Madras Presidency of the British India government:**

The territories of Andhra Pradesh, of Coastal Andhra and Rayalaseema, under the British Madras Presidency had shifting regional and administrative boundaries, through 18th to 20th Centuries, and the ownership and jurisdictions of Zamindaris changed too from time to time. Due to these dynamic conditions, there was no single fixed, final list of Zamindars, but many lists made from time to time [7]. Data from different sources was collected, including old British official records, reports Lists etc and other archival material, books literature in English and Telugu language.

From the data collected from all sources, after sorting and filtering for repeats, identifying locations in the present contexts, a total of 603 Samasthans and Zamindars have been listed to be falling in the present limits (post 2014) of Andhra Pradesh state

- **Telangana- parts of Erstwhile Princely State of Hyderabad under the Nizams of Hyderabad**

Data from different sources was collected, including official records of Nizam administration such as Jagir Administration Reports, old British official records, reports Lists etc and other archival material, books literature in English and Telugu language. The total number of Samsthans in Telangana is counted as 30.

- **Listing – Final Total Number of Samasthans and Zamindaris in Telangana and Andhra Pradesh**

The Final Total number of Samasthans and Zamindars combining the number of places Listed in both States of Telangana and Andhra Pradesh was found to 633, located and mapped on to present boundaries of the two States.

ii. Mapping - Process and Preparation - Final Consolidated Map of Samsthans and Zamindaris of Telangana and Andhra Pradesh

The towns and villages of Samsthans and Zamindaris, listed from various sources and located on maps using different physical and digital methods, are compiled together using the following procedure and geo-tagging tools. Base maps of two states of Andhra Pradesh and Telangana were prepared – In AutoCAD and ArcGIS with present boundaries of districts, water bodies, road and railways.

ISSN No:-2456-2165

The Samsthan and Zamindari towns and villages listed from different sources were identified by district and Mandal, cross – Verified with the Census data and old Taluk locations from the original lists. Districts were grouped into six planning regions of the two states, viz., Anantapur, Rajamundry, Guntur and Visakhapatnam in Andhra Pradesh and Hyderabad and Warangal regions in Telangana – for study and analysis of geographical distribution and densities of Samsthan and Zamindari towns and villages. Geo coordinates of the places were picked up from different map search engines and web-based resources mentioned above and imported to GIS.

Maps of Samsthans and Zamindari Towns and Villages of Telangana and Andhra Pradesh have been prepared and a final map of consolidated lists spread across the two states is given Figure 2.

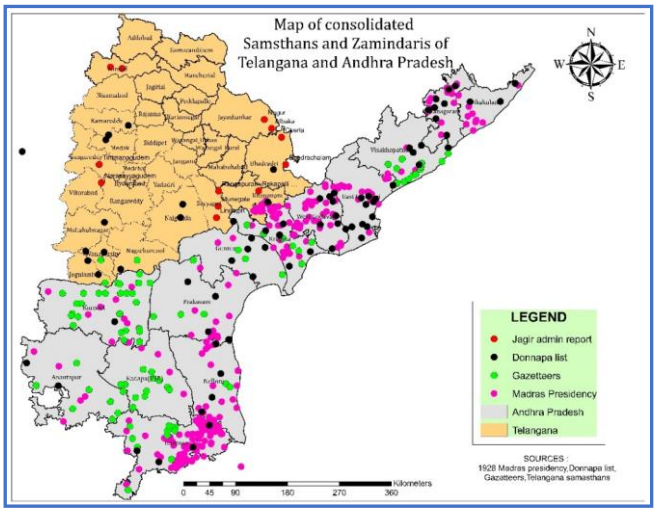

Fig. 2. Samsthans and Zamindaris of Telangana and Andhra Pradesh –map prepared by Author using different map overlays [8]

V. CONCLUSIONS

Listing and Mapping are first important steps in any historical research. For this Doctoral research topic of 'Planning for Conservation of Unprotected Heritage in India', the tasks of Listing and Mapping of Samsthans and Zamindaris of Telangana and Andhra Pradesh were conducted in two phases between 2009-2014 and 2014-2018. This paper detailed out the technological changes that have advanced from phase one to phase two, enabling the author to overcome the challenges and issues in carrying out the research programme, especially in Listing and Mapping of old historic places, which are no longer popular tourist destinations and active towns.

Though the Internet and geo-mapping were quite known and established even in the first phase research period of 2009-2014 in India, faster-paced advancement in terms of digital, mobile technologies through internet access has tremendously helped in completion of research. Accelerated research happened not only due to easy availability of satellite images, maps, geo-tagging platforms, search engines, remote sensing and other geo-technologies and open-access libraries, but also availability of increased data and information about hitherto unknown remote places and historic sites due to increased usage of social media networks and internet platforms by people, media houses and institutions adding to crowd-sourced data base of commons like Wikipedia, Wikimapia etc.

The advancement in digital, internet technologies and open access are new research tools for researchers working in the fields of historical studies and heritage conservation that will aid expansion of data base and documentation of unexplored places across India. There is an urgent need to focus on digitization of libraries, archives, museums and other cultural repositories in India and make digital resources available to researchers, in order to further expand historical research and data base.

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