An Analysis To The Growth Of Geotagging Implementation In India

Mamta Chaudhary, JVR-III 20/4056 Research Scholar, Jayoti Vidyapeeth Women's University, Jaipur.

Dr. Dheer Singh Professor, Jayoti Vidyapeeth Women's University, Jaipur.

ABSTRACT

Add geographic data to different media, including such web pages, SMS messages and QR Codes using geo-tagging. Coordinates in the form of latitude and longitude are the most common form of this data. A time stamp may also be included, as well as statistics such as altitude or heading. These images and other information may be captured via geotagging, including the location of the canal or structure, its kind and completion status, and other relevant information. The research is based on the secondary report-based data. Growth of geo-tagging of the components of government projects such as PMGSY**,** MGNREGA, PMAY, Toilet construction under Swachh Bharat etc. in India being analyzed in this research.

Keywords: Geo Tagging, MGNREGA.

INTRODUCTION

An image's geographic location can be determined by a method known as "geo-tagging". According to a government press statement dated April 2017, "it is the procedure of attaching geographical identifiers like latitude and longitude to various forms of media including a picture or video." With geo-tagging, a user's device can provide a wealth of location-specific data. It tells users where the picture's content is located."

At the National Remote Sensing Centre (NRSC) in Hyderabad, an ISRO-affiliated software platform called "Bhuvan" is used to "allow users to experience a 2D/3D model of the earth's surface".
Mobile-based geotagging and a Geographical Information System (GIS) were the concepts behind the project.

"Geo-tagging employs latitude and longitude to pinpoint the exact location of an image. It serves as a frame of reference for the analysis of satellite data by those who use it. An aerospace expert who has worked with the Bhuvan platform claimed that once a site is

selected, high-accuracy GPS equipment can determine the location to within centimetres." If you're involved in the evaluation of detailed urban images, this is useful. " Put another way, geo-tagging is a way to add location data to photos."

How it started

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was the first programme to innovate with geo-tagging. The MGNREGA is the centrepiece rural jobs programme of the Congress-led United Progressive Alliance government, which guarantees every village household 100 days of employment yearly.

They believed that assets produced under the system, such as ponds & dams, were neither long- lasting nor usually meeting a need. Officials noted that because there was no means to monitor the assets on a real-time basis, a pond might have been dug up multiple times, or a road might have been re-laid numerous times.

As a result, geo-tagging made its debut as a tool in government initiatives. In June 2016, the Union Ministry of Rural Development as well as the National Rural Sanitation Agency (NRSA) signed a Memorandum of Understanding (MoU).

According to the statement published at the time, "the Prime Minister recently stressed the importance of online tracking and monitoring of assets to detect leakages and to create an effective map of the terrain for future growth operations."

The status

GEO-tagging is now being used in a number of government programs, along with the MGNREGA, the PMGSY, Swachh Bharat, toilet building under Swachh Bharat, highways, and urban housing.

According to government authorities, a unique identification number has been geo-tagged on most of the construction work done so far under the rural housing initiative.

More than 90% of the MGNREGA's assets since its inception have been geo-tagged, and all of the roads built under the PMGSY have GIS mapping, according to their findings. Some assets created under the 14th Finance Commission have also been geo-located as part of the 'rurban' program.

The postal agency, as well as the Department of Land Resources, use Bhuvan to geotag post offices and monitor watershed efforts around the country. The tool is also being used by the Ministry of Agriculture.

The use of geo-tagging within the framework of the schemes is clearly stated. Photographs of each stage of PMAY (G), for example, must be posted to a government webpage at the appropriate time – from the existing house to the proposed site of the new one, as well as progress at each stage of building. Each next instalment is only made available after this has been completed.

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MGNREGA's 'gramme rozgar sahayak' (employment guarantee assistant) or junior engineers photograph and geotag the completed asset as part of the program's completion verification process.

As part of its Swachh Bharat Mission, the Union Housing and Urban Affairs Ministry now uses geo-tagging to monitor the progress of urban infrastructure projects, such as the installation of toilets.

Every erected toilet must be geo-tagged in order to prevent tampering with the data, according to a housing ministry official. "The distribution of funding is related to the accuracy of the data supplied by states on the number of toilets that have been created," the official added.

Geo-tagging plays a critical role once again in the implementation of the urban variant of the PM Awaas Yojana (Grameen), which is overseen by the housing ministry.

GPS technology is also being widely employed to improve the safety of passengers, particularly women, in public transportation vehicles.

With effect from 1 January 2019, the Union Road Transport and Highways Ministry has mandated the installation of vehicle monitoring systems in all new modes of public transportation, including buses and taxis.

Many state governments, as well as the federal government, are utilising GPS technology to track the movement of public cabs and buses, according to a senior road transportation official. The roads ministry also intends to use satellite-based electronic toll collection using global positioning system (GPS) technology.

LITRETURE REVIEW

Stutee Gupta et.Al.[2020] The use of exploratory spatial data analysis (ESDA) in regional and national studies in other countries has revealed interesting information regarding diverse environmental socioeconomic challenges. Rural development and planning have yet to benefit from its use. In the Prakasam district of Andhra Pradesh, India, we used ESDA's hotspot and rising hotspot analysis techniques to examine the spatial and temporal clustering of rural assets developed through MGNREGA, the world's largest social protection programme. Hotspot and rising hotspot research shows that the assets tend to cluster at the village level at specific locations and specific times as during implementation of the project. As a result, it demonstrates that both techniques complement each other in intuitively distinguishing the geotagged rural assets Visualizing geographical and temporal links between event zones using a 3D method allowed us to gain a deeper understanding of their causes and how they were created in the first place, as well as how they are related to each other. These technologies can be used to simultaneously visualise geographical and temporal clusters. MGNREGA and other rural development programmes could benefit from the study's empirical findings, which could be used to improve programme design and execution.[1].

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Kaja Divya et.Al.[2019] Efforts of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) of 2005, which seeks to provide at least 100 days of guaranteed wage employment in rural parts of the nation. The MGNREGA program's main goal is to help people build long-term assets and improve their standard of living. Geo MGNREGA, a Geographic Information System (GIS) solution for visualising, analysing, and exploring the data of assets developed under MGNREGA, has been adopted by the Ministry in this respect. Geotagging of assets is supported by NRSC/ISRO. Using spatial analysis, new representational forms may be constructed to better comprehend assets and their spatial patterns can be identified. Using the due process technique of (a) classification and quality assessment of asset information, (b) considering the 23,498 assets (ignoring all inconsistent assets), and (c) finding the desktop position in relation to and Land Use and Land cover using Hotspot mapping and Kernel Density Estimation, Hotspot analysis and Grid based analysis in ArcGIS, this option was investigated. According to a study, GIS provides us with a better synoptic view of MGNREGA asset mapping, evaluation, and quality of data [3].

Tripurari Kumar [2019] On August 25, 2005, the National Rural Employment Guarantee Act (NREGA) was signed into law and renamed the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on October 2nd, 2009. Since its inception in India, the MGNREGA programme has now lasted fifteen years. Every family in rural parts of the nation whose adult member agrees to undertake unskilled labour will get at least 100 days of guaranteed employment each year under this programme. The original study purpose is to assess the influence of the MGNREGA programme on women's empowerment, difficulties, and challenges in India since its establishment. Wider acceptability has been given to the idea of women's empowerment in the country of India. Women's economic empowerment via the MGNREGA plan provides a foundation for more independence and self-esteem, according to recent research. As a beacon of light for rural women's empowerment, it has had a significant impact on their lifestyle and economic well-being[4].

Bhasker Vijaykumar Bhatt et.Al.[2018] India's central government is working hard to improve the country's urban sanitation. The Swachh Bharat Mission, which was launched throughout the country, is playing a role in this. Research was conducted to examine and evaluate the public toilets and urinals with pay-and-use situated in the administrative borders of Surat Municipal Corporation's central zone. In an effort to evaluate cleanliness, housekeeping, security, and management at all of the pay-and-use restrooms and urinals, researchers went door-to-door in each one. There were inventory preparations and quality checks done. The coordinates of each site were obtained and used to geotag the photos. Four main variables and 74 sub-parameters were used to evaluate the facilities, and the results were used to provide a score. The delivering services process had certain quality flaws that needed to be addressed. Efforts to enhance service delivery are addressed at this meeting [5].

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Roshni Pandey [2017] Any nation's growth is impossible without the development of its rural economy, and ignoring rural development is equivalent to ignoring the nation's whole progress. A strong economic policy and improved implementation strategy are needed by government in order to improve the lives of rural Indians, which is where India's genuine progress resides. National Rural Employment Guarantee Act (NREGA) was renamed Mahatma Gandhi National Rural Employment Guarantee (MGNREGA) Act to commemorate the 150th anniversary of Ghandi's birth. The legislation's goal is to eradicate severe poverty and empower rural communities to self-sustain via the construction of productive assets. There are many goals behind India's Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), including creating jobs for rural residents, alleviating poverty, reducing rural migration, and improving rural infrastructure, all within a rights-based framework. A total of 15–20 percent of Indian families and 30 percent of rural households benefit from the MGNREGA programme every year. MGNREGA stipulates that each rural family that requests it has the legal right to one hundred days of paid work. The MGNREGA Act's goals have been met in different ways among states and districts, despite its countrywide reach. MGNREGA is a useful and effective plan for rural India's development to be studied in this article. In addition, there have been some critical recommendations made to improve the effectiveness, profitability, and value of this plan [6].

Geo Tagging Growth in Government Schemes

MGNREGA
"Yuktdhara," a new geospatial planning platform based on remote sensing and gis system data, will assist in the facilitation of new "MGNREGA assets. Geotags developed as part of national rural development programmes will be housed on the site. As a result, a mobile app for citizens is also being developed. "JANMANREGA" has benefited the rural communities by conducting an evaluation via the Bhuvan service. There has been an unparalleled openness in the MGNREGA project thanks to the integration of geographic information systems and Earth observation technologies.

PMAY
With the Pradhan Mantri Awas Yojana-Urban, low- and moderate-income households who are now living in temporary housing or slums would be able to own their own permanent home. Middle-income individuals are eligible for interest subsidies on house loans.

The PMAY-rural program was anticipated to price Rs 2,17,257 crore when it was first announced. Up till March 2021, the program had indeed cost Rs 1,97,000 crore, with the national government contributing Rs 1,44,162 crore of that sum.

With the Pradhan Mantri Awas Yojana-Gramin, the national and state governments equally share the cost building 'pucca' or permanent dwellings for rural residents. The outbreak put a halt to any progress made. Until meet the goal of constructing 2.95 million rural homes by 2022, the PMAY-G program has been extended to 2024.

According to an economist at NIPFP who submitted research results on the PMAY-G to the Ministry of Rural Development, success in the rural sector has reduced homelessness in rural regions as well as benefited individuals who live in "kaccha homes." "The pace of building has increased dramatically as a result of government geo-tagging technologies and funds flowing via direct benefit transfer.

PMGSY
India's Pradhan Mantri Gram Sadak Yojana (PMGSY), begun in 2000, aims to link eligible disconnected habitations with all-weather road connection.

Later, it was determined that a boost to the rural economy would be provided by upgrading and consolidating through routes and significant rural linkages. 7.83 lakh kilometers of roads have been sanctioned and 6.90 lakh kilometers have been built at a cost of Rs. 2.69 lakh crores since the beginning of the project.

As part of PMGSY implementation, GIS data were gathered and digitized using geotagging in the GIS platform designed for the program for 800,000+ rural facilities as points, 1,000,000+ habitations, and 25,00,000+ km of rural roads. GIS data gathered in rural areas will be made accessible to the public through geotagging.

There will be a joint effort between Gati Shakti and NRIDA, the nodal agency for the execution of the PMGSY plan, to release the Rural Connectivity GIS Data in the public domain.

National master plan and digital platform to plan and implement infrastructure projects in India in order to minimize logistical costs and improve infrastructure. NRIDA and Gati Shakti are working together to share data in order to fully plan and execute their respective programs.

Toilet construction under Swachh Bharat,
• Prime Minister Narendra Modi referred to the Swachh Bharat Mission as Swachhagrahi. In a way, Swachhagrahi represents Gandhi's ideas and goals. Cleanliness warriors infuse fresh life and vigor into a long-simmering campaign.
• More than 12 million students, 6.25 million Swachhagrahis, 2.5 million sarpanches, millions of people throughout the world were part of this team.
• Community people were often enlisted by Swachhagrahis to help build and use

public restrooms.

•   With his "Swachhata Hi Seva" campaign, Prime Minister Modi connected cleanliness with service and mobilized the Jan Andolan, bringing together politicians, young people and religious organizations with celebrities and SHGs with the general public.

•   In order to keep tabs on all aspects of the campaign, contemporary technology was efficiently used. The Integrated Management Information System (IMIS) was used to track the development of each village's toilets. To ensure complete transparency, every toilet has to be geotagged.

•   New vitality and depth were provided to the government discussion through the Swachh Bharat Mission's Information, Education and Communication (IEC) division Campaigns like "Darwaza Band" and "Saafnahi to Maafnahi," which have become household names in rural India, helped to organize and unite the people.

•   The government provided a cash incentive of Rs. 12,000 per toilet to encourage the building and use of toilets.

•   approximately Rs 1.3 lakh billion was provided to SBM-G, ensuring that there was no shortage of funding over the five-year period.

Result Analysis

The results are based on secondary data for the growth of geotagging in india. For this the various parameters used which are "Not geotaggable , yet to geotag and yet to moderate." Discription of the result showing in two parts Phases I , Phase II and Summary of Assets . Here phase I shows Assets and Phase II shows BDA (Before, During, After).

CONCLUSION

Geo-tagging could make it possible to trace the progress of construction projects and improve the usefulness of the assets developed as a result of them. Through analyzing the results based on the assets shows that the states are still high in yet to Geotag as compared to other two parameters (Not Geotag gable and Yet to Moderate).Comparison shown in Not Geotaggable for Phase I Assets and Phase II After illustrate that representation of not geotag gables for Phase I Assets is high in values in comparison to Phase II After. Also the paper shows the graphical representation of other two parameters for Phase I Assets and Phase II(BDA).This shows the overall growth of geo-tagging in the different schemes of government. These are also used for monitoring of activities in the different states of India. The geotagging of these assets and activities will help provide more transparency to the process. State governments and the federal government will benefit from a better understanding of the movement of money. Using geo-tagging, inventorying, and other methods, the ministry will be able to reduce duplication, eliminate redundancies, or harmonize its many programs.

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