

HIMACHAL PRADESH IN GIS IMPLEMENTATION IN MGNREGS- PARADIGM SHIFT IN GOVERNANCE

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Abstract

In almost last two decades, the country has achieved different benchmarks in the field of information technology. To implement the developmental programmes effectively and in more transparent manner, changes have been made in the implementation strategies from time to time. In this developmental scenario, the MGNREGS has been proved to be most ambitious programme, which actually reached upto the last beneficiary and the resource poor people, committed atleast 100 days assured employment for the un-skilled worker near to his/her place. The governmental agencies have been putting tremendous efforts to bring the applications like geo-informatics into the monitoring process of such developmental programmes or schemes. In view of these changes occurred in past, GeoMGNREGA has brought paradigm shift in this developmental scenario. This paper will discuss the process of implementation of GeoMGNREGA in Himachal Pradesh and the overall impression of the initiative that has been created in the most ambitious programme so far.

Keywords: *GIS implementation, MGNREGS, geo-informatics, GeoMGNREGA*

1. Introduction

1.1. Background: During past few decades, the applications of information technology have been widely used to ensure the transparency and accountability vis-à-vis good governance. The Government of India has very strongly taken steps to implement the idea of Digital India Programme effectively on ground. Different applications and online software were used to capture the data and keep it in the public domain for better outreach of society. Similar exercises have been practiced by the

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Ministry of Rural Development, Govt. of India for the better expected results of different schemes and programmes. The regular monitoring and inspection was also believed to be better geared up with the applications of information technology.

The very ambitious programme, which was globally discussed and appreciated called Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), has been putting lots of efforts to ensure the accountability of functionaries working for the better implementation of the scheme and maintaining the transparency in whole process. Started with the onset of NREGASOFT, which was a software developed for maintaining transparency and facilitating e-Governance by enabling IT based implementation of NREGS across the states, districts and blocks with the core functionaries at all three tiers of Panchayati Raj Institutions (PRIs).

The Ministry of Rural Development acknowledges that creation of durable assets and strengthening the livelihood resource base of the rural poor is equally important and it is in this context that the Fixed Asset Registers (FAR) have been introduced which keep a permanent record of each asset in a physical form.

The need to geographically visualize the assets created under MGNREGA was felt by the Ministry of Rural Development and it planned to shake hands with few technical agencies to make the appropriate and better planning vis-à-vis monitoring to achieve the desired results. Then, the GIS application called 'GeoMGNREGA' was conceptualized with the vision to geotag the assets created under MGNREGA and make them available in the public domain. The objective was to create a Geographic Information System (GIS) solution to visualise, analyse and explore such asset related data and also to manage more effectively alongwith the better understanding of the impact.

Kangra district of Himachal Pradesh became the first district in the country to achieve the GeoMGNREGA targets at the fastest rate in the first go. The daily progress of geotagging is again remarkable in the state so far.

1.2. Purpose of GeoMGNREGA:

About 30 lakhs new assets are being created every year through MGNREGS. Geotagging of these created assets will allow the government to enforce better monitoring, recording and terrain mapping for future developmental works. With the objectives to ease out the future identification and monitoring, geotagging process will further paves the path for further developmental process in the area.

1.3. Inception

The MoU was signed between Ministry of Rural Development, Govt. of India and National Remote Sensing Centre on 24th June 2016 on the suggestion from states and other technology partners. The MoU had clear cut timelines and responsibilities. The implementation of GIS was started with Wave-I roll out strategy in September 2016, which included geotagging of first 100 districts of the country followed by Wave-II, which started in December, 2016 and covered all the remaining districts for geotagging process.

1.4. GIS Implementation

The process of Geotagging has been made to practice after a series of capacity building programmes at national, state, districts and block levels. The technical agencies involved in the development of web based application vis-à-vis mobile based application have also extended the support for further hand-holding to all the functionaries involved in the implementation process.

As GeoMGNREGA assets are being geotagged using a judicious combination of MIS data from NIC and geospatial solution of BHUVAN geoportal with mobile application of NRSC, ISRO. Such an application network has enabled the realisation of a geospatially trackable tool called "GeoMGNREGA" which is helping village panchayats and local administration vis-à-vis the visualization of rural assets created or under construction.

Phases: GeoMGNREGA has been started with GeoMGNREGA Phase-I which covered all the completed works right from the inception of

MGNREGA and followed by Phase-II which is covering the works at three stages i.e. approved works, during execution of works & the completed works.

1.5. Core Functionaries:

To cater the need of implementation, monitoring and sustainable solution for the future implementation, MoRD, Government of India is the nodal Ministry for the implementation. National Informatics Centre (NIC) is playing an important role of data syncing process from NREGASoft to Bhuvan mobile application. The most crucial role i.e. developing mobile based bhuvan application for capturing data and portal of bhuvan for monitoring purpose has been performed by National Remote Sensing Centre (NRSC), ISRO. The other core functionaries for effective implementation of GeoMGNREGA included the following officials:

- i. State GIS Nodal Officer (SGNO), who co-ordinates with the district level officials and the nodal ministry.
- ii. District GIS Nodal Officer (DGNO), who co-ordinates with the block level officials during the implementation of GIS in MGNREGA.
- iii. GIS Asset Supervisor (GAS), a designated official at block level who has the responsibility to take care of GIS implementation process at Gram Panchayat level at every stage. This official has been given the power of validation and moderation to assure the precision and accuracy in the process.

2. Process & Stages

The physical record from Fixed Asset Register (FAR) have been available in GeoMGNREGA with GIS visualization. The data from NREGA soft has been synced to Bhuvan web portal and mobile based application while capturing the data in field.

The asset being geo-tagged by GeoMGNREGA Spatial Enumerator (MSE) at site uploaded with high resolution (mandatorily <10m) which is seen at Block level and being monitored by GIS Asset Supervisor (GAS). After getting the approval of GIS Asset Supervisor (GAS) and necessary moderations, if any, done, the geo-tagged assets are available to district

and state level for monitoring and co-ordination at state and national level respectively.

There are three stages i.e. pre, during and post work completion in phase-I & II.

Janmgnrega:

It is a Citizen-centric Mobile Application (CCMA) which was launched by Ministry of Rural Development on 19th June 2017. The application has the following salient features:

- The mobile app allows locating already geotagged more than 1.8 crore MGNREGA Assets within ISRO's Bhuvan Map Interface, along with their attributes & two photographs using an Android mobile phone.
- Citizens will also be able to provide feedback about assets that have been created under the programme.
- The initiative will enhance proactive disclosure of information to Citizens.
- Janmanrega app has a prime objective towards good governance alongwith transparency & accountability.

3. Research Problem

The budget outlay, every year, has a huge earmarked budget for the rural employment scheme i.e. MGNREGA. The country has the budget allocation of Rs48000 crores for the year 2017-18 and in similar fashion a total amount of Rs.3508 lakh has been allocated for execution of MGNREGA works in state of Himachal Pradesh during the year 2017-18. A lot of efforts have been made to make efficient and effective system of accountability and transparency in view of the first objective of MGNREGA i.e. providing the assured employment of atleast 100 days. However, the second objective of the scheme which entails about the creation of durable assets, had very few mechanisms to ensure the transparency and accountability. Thus, GIS implementation in MGNREGA came up with the innovation vis-à-vis solution to ensure the transparency and outreach to society. The study is more emphasized on the

implementation stages of the initiative and shift in governance in respect of the implementation of MGNREGA through application of ICT.

4. Objectives of The Study

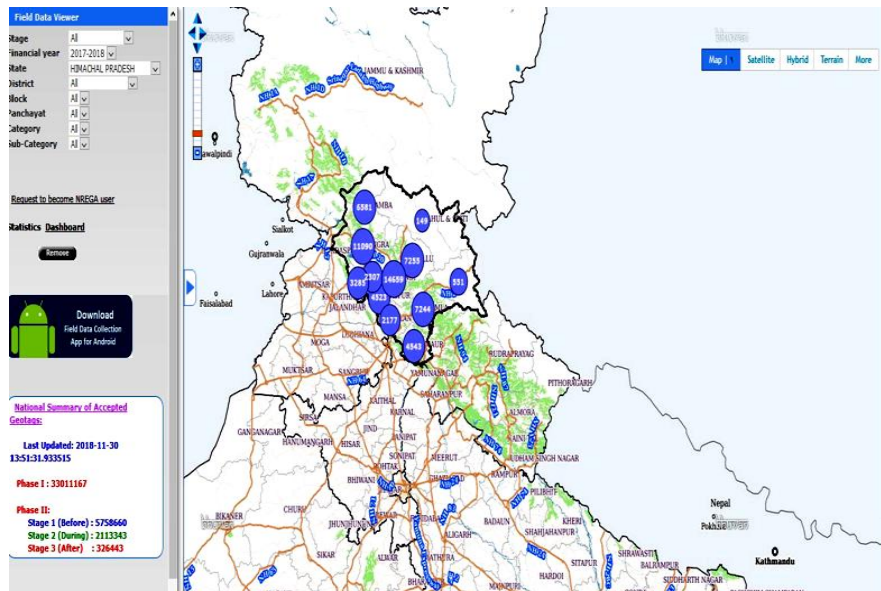
- 4.1. To study the type of assets created in the state in one reference year i.e. 2017-18.
- 4.2. To study and analyze different stages of geotagging of the assets created in phased manner.
- 4.3. To discuss the GeoMGNREGA process in context to Himachal Pradesh and recommend the way forward.

The secondary data forms the major portion of the study. In view of the above background, this paper intends to look for the space of innovation in good governance through ICT intervention.

5. Research Methodology

5.1. Profile of Study Area:

The study includes whole state with all the districts and blocks implementing geotagging process under GeoMGNREGA during Phase-I & II.



Picture 5.1. Showing the Profile Area (all districts of H.P.) through Bhuvan Portal

5.2. Collection of Data:

Data collected for this study was purely secondary, collected from bhuvan portal of GeoMGNREGA and reports of GeoMGNREGA.

6. Results & Discussions

The overall study revolves around the status of assets created through MGNREGS in the state vis-à-vis the progress of geo-tagging in different stages while discussing the challenges in implementation of GeoMGNREGA. The results on these aspects are shown below.

6.1. Assets created in the state in one reference year i.e. 2017-18

Sr. No.	Type of Works	Gram Panchayat Level	Panchayat Samiti Level	Zila Parishad Level
1.	Flood Control	3620	50	--
2.	Rural Connectivity	6062	432	--
3.	Water Conservation & Water Harvesting	6164	30	--
4.	Renovation of traditional water bodies	502	11	--
5.	Drought proofing	215	123	--
6.	Irrigation channels	2171	6	--
7.	Irrigation facilities to SC/ST/IAY	29335	32	--
8.	Land Development	11475	42	--
9.	Other works	347	13	
10.	Bharat Nirman (Rajeev Gandhi Sewa Kendra)	19	--	--
11.	Coastal Area Works	10	--	--
12.	Rural Drinking Water	33	1	--
13.	Fisheries	6	--	--
14.	Rural Sanitation	11305	--	--
Sub total		71264	740	00
Total		72004		

(Source: nrega.nic.in)

About 99 percent of works have been executed through Gram Panchayats only where the major thrust has been given on the categories of works related to irrigation facilities during the reference year i.e. 2017-18. Whereas the Panchayat Samities have contributed about 1 percent for the execution of works under NREGS and the major thrust was given on works related to the rural connectivity. However, ZilaParishads have no contribution for executing the works and creating assets through MGNREGA during the year 2017-18. Thus it can be concluded from the results that there has been a demand for the works related to irrigation facilities vis-à-vis the connectivity to the rural areas.

6.2. Different stages of geotagging of the assets created

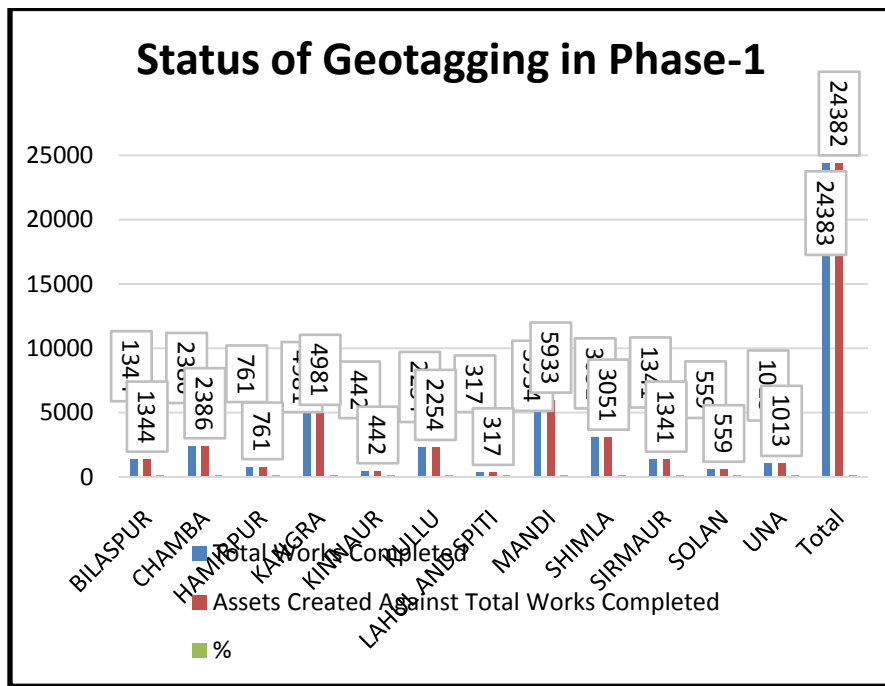


Figure 6.2. a. showing the status of geo-tagging of 3 stages of Geo-MGNREGA Phase-I

The figure 6.2. a. shows that there is 99.99 percent coverage of completed works in Phase-I in the state. Hence, all the works are available for the monitoring agencies and the citizens on web based application of GeoMGNREGA.

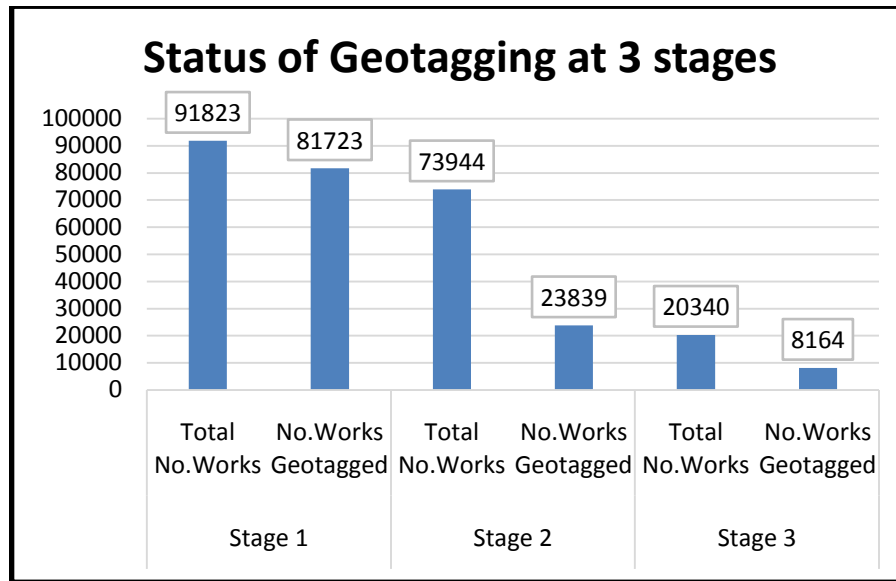


Figure 6.2. b. showing the status of geo-tagging of 3 stages of Geo-MGNREGA Phase-II

The figure 6.2.b. shows that 89% works have been geotagged at stage-1, which is at the approved site for work followed by the geotagging of completed works at stage-3 showing a progress of 40 percent. However, the works which are being executed and not completed (stage-2) have a progress of 32% of the total works. Hence, it is concluded that the progress at initial level i.e. stage-1 is very quick, followed by the geo-tagging of the completed works. However, the geo-tagging of the works at stage-2 are subject to the condition that geotagging of works at stage-1 are complete and acknowledgement is received with 30% expenditure booked in NREGASoft.

7. Findings

The GeoMGNREGA was launched by keeping few anticipated results and benefits in mind including the ease of assets identification, simplified ways of inventorying the assets and finding ways to improve the durability of assets and access to the citizens of the nation. The major findings of the study include the following points:

7.1. Quick and Easy Identification of Assets: The initiative has made all assets created through the scheme available with easy access to everyone with few clicks. All the completed assets are available to citizens with full description of work.

7.2. Simplified version of inventory: Earlier conventional way of inventorying the assets created, managed through Fixed Asset Register (FAR) and then NREGASoft has pragmatically shifted to GeoMGNREGA with accurate details

7.3. Compliance with Social Audit & other requirements: GeoMGNREGA has made the possible access of every component of the works being executed through NREGS to the public thus covering the essence of social audit and other requirements for transparent process in the scheme.

7.4. Co-ordinated joint use among multiple departments: The efforts of different technical agencies and departments have made a strong sync to effectively implement the programme, which is visible through GeoMGNREGA support portal and GeoMGNREGA WhatsApp Group, giving a prompt solutions and back-end support to all GIS core functionaries.

7.5. Hiccups: The major functionaries, tagging the data at spot comprising MGNREGA Spatial Enumerators (MSEs) are the officials who are not very much technologically well acquainted, thus, prone to get problems related to software and handling the mobile based application to greater extent. The changing technology and not having refresher trainings to thesegrassroot level functionaries is another challenge for the programme to move in a required pace.

8. Conclusion & Suggestions

The most ambitious programme of government has seen achievements in almost all the states despite of various challenges including administrative issues, insufficient technical know-how of the officials and different

topography of the states. However, the following suggestions are proposed in view of the findings of this study:

- 8.1. Feedback Response System:** The officials involved in geo-tagging process through mobile applications needs a strong communication with the officials from technology partner agencies to have quicker solutions to the technical issues faced by them on daily basis.
- 8.2. Mapping the issues vis-à-vis progress:** The issues related to GeoMGNREGA implementation need special attention by the implementing and coordinating agencies at national, state, district and block level while capturing the data regarding progress of geo-tagging.
- 8.3. Special Guidelines for certain geographical areas:** The areas where satellites are very rarely visible or not at all present, shall be given separate operational guidelines for the functionaries in respect of capturing and geotagging the assets as they face real problem related to resolution (not less than 10 m).
- 8.4. Replicable model:** The model used for geotagging of assets made under MGNREGS has a replicable effect and needs to be introduced in all such schemes where the assets or infrastructures are being created for the public.

Hence, it is worth mentioning here that GeoMGNREGA is a very pertinent example of utilizing the information technology in efficient and effective manner for the well-being of society. This paradigm shift has a long way to go and make the model of good governance applicable to all other schemes as well.

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