

GIS Based Integrated Planning and Monitoring System for the PRIs in West Bengal



**Institutional Strengthening of Gram Panchayats (ISGP) Project
Panchayats & Rural Development Department
Government of West Bengal**

Constitutional Mandate to PRIs

- Ensure social justice and economic development through need based planning approach
- Ensure citizens' participation in the bottom-up planning process through Gram Sansad and Gram Sabha meetings

Typical West Bengal Gram Panchayat Profile

DEMOGRAPHIC

1. Average Population: **20940** (Census 2011)
2. Average No. of Household: **4581**
3. Average Area: **32.57 Sq.km**
4. Average No. of Villages: **12**
5. Average No. of Elected Members: **15** (at least 50% of them are women)
6. Average No. of GP Employee: **07**

CORE PUBLIC AMENITIES (ON AVERAGE)

- | | |
|-------------------------------------------|--------------------------------------|
| 1. Black Top Road – 9.5 Km. | 7. Upper Primary School – 7 |
| 2. Concrete Road – 7.4 Km. | 8. Secondary/HS School – 5 |
| 3. Earthen / Unsurfaced – 26.1 Km. | 9. Madrasa – 1 |
| 4. Hand Pump – 284 | 10. ICDS Center – 21 |
| 5. Primary School – 27 | 11. Primary Health Centre - 1 |
| 6. Sishu Sikhsha Kendra - 6 | 12. Health Sub Centre – 5 |

Assigned Institutional Functions

- Hold the Gram Sansad and Gram Sabha meetings in time to document local needs to prepare the annual draft plan
- Review asset repository for identification of critical gaps in line with the demand
- Hold General Body and Standing Committee meetings in time to finalize the annual plan; review plan implementation
- Initiate timely procurement process for implementation of planned projects
- Monitor progress to ensure timely completion
- Proactive disclosure to citizens

GIS Based Integrated Planning & Monitoring System: **Objectives**

- To create a one stop solution to aid the PRIs for better planning and monitoring
- To create a global platform for data sharing amongst all stakeholders to facilitate decision support
- To strengthen the system of state oversight
- To ensure transparency and public accountability

GIS Based Integrated Planning & Monitoring System : **Core Elements**

I. MIS Application

- Capture and analyse GP-wise data on institutional functioning, Gram Sansad and Gram Sabha meetings, physical and financial progress on planned projects

II. Mobile Application

- Capture latitude, longitude, image, date-time stamp, audio, video with the help of GPS satellite wherever relevant for validation of MIS data

III. GIS Application

- Capture and analyse GP-wise spatial data on geo-referenced map of Gram Panchayat, District and State

GIS Based Integrated Planning & Monitoring System : **How it works?**



MIS Application

Gram Panchayat enters data to web MIS software:

- (a) Planning
- (b) Peoples' Participation
- (c) Institutional functioning



The screenshot shows the homepage of the Institutional Strengthening of Gram Panchayats (ISGPP) Project website. The header features the ISGPP logo and the text: "Institutional Strengthening of Gram Panchayats (ISGPP) Project", "Panchayats & Rural Development Department", and "Government of West Bengal". Below the header is a navigation menu with links: Home, Project Components-, Online Reporting, IEC Initiatives -, Publications, Notifications, Reports, Tenders, and Our Team. The main content area includes a large banner image of a smiling child with the text "Scale the mountain of ignorance with Knowledge". To the right of the banner is a "Geographic Information System (GIS) Website" link with a "NEW" tag and an "Online Report View" button. Below this is a "Latest Notifications" section with three entries: "28/05/2015 Order of Block Grant for 2015-16 for six Districts and Dakshin Dinajpur (One GP)", "24/04/2015 Notification for Filling up of Vacant Post on Contract basis under ISGP Project", and "23/03/2015". At the bottom right are "ISGPP Blog" and "Feedback" buttons. The word "Introduction" is visible at the bottom left of the page.

GIS Based Integrated Planning & Monitoring System : **How it works?**



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Welcome dhlprr

Logout

I.S.G.P.(M.E.) - 1

Progress related to Institutional Strengthening Issues of Gram Panchayat

District Name : Dakshin Dinajpur
Subdivision Name : Balurghat
Block Name : Hilli
GP Name : Dhalpara
Financial Year : 2015-2016
Reporting Period : July To September

- ▶ 1.1 Maintenance of different Registers
- ▶ 1.2 Status of form 26 and 27 Reports (Cumulative Data till the month of reporting)
- ▶ 1.3 Information related to procurement by the Gram Panchayat(Cumulative Data till the month of reporting)
- ▶ 1.4[A] Information related to approval of Upa-Samiti Budget (Form 35) and Upa-Samiti based GP Plan and Budget (To be filled up only in September/October)
- ▶ 1.4 Information related to Preparation of Upa-Samiti plan wise Integrated Gram Panchayat Plan (To be filled up only at the beginning of February and March)
- ▶ 1.5 Regularity in the occurrence of various GP level meetings *
- ▶ 1.6 Audit Related Information
- ▶ 1.7 Generation of Own Source Revenue (Cumulative Data i.e. from the beginning of the Financial Year)
- ▶ 1.8 Consistency of total budget with total estimate of individual schemes

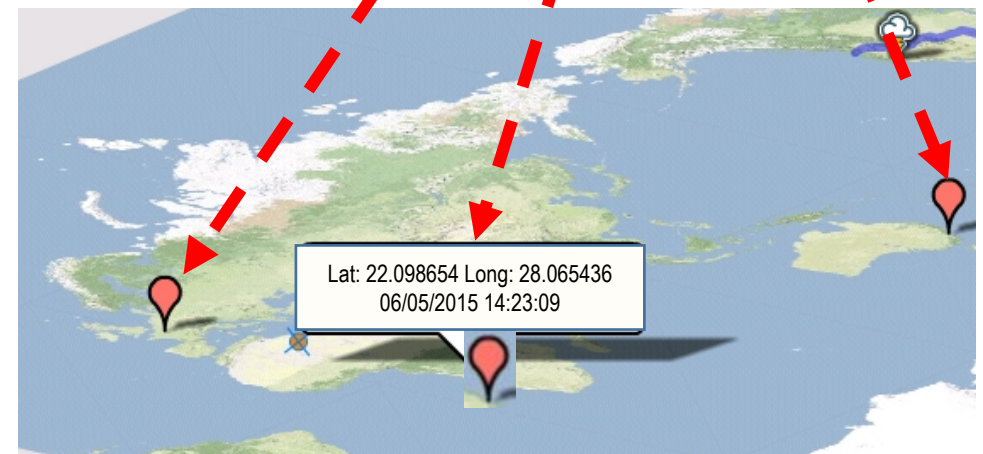
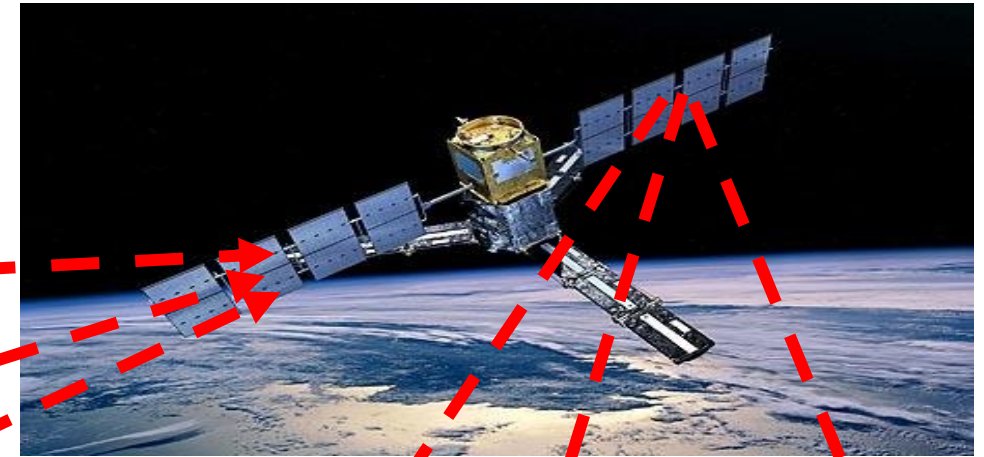
GIS Based Integrated Planning & Monitoring System : **How it works?**



Mobile Application

Gram Panchayat use GPS enabled Mobile with custom application for:

- (a) Geo tagging of Participation
- (b) Geo tagging of plan progress
- (c) Spatial view of Institutional indicators



GIS Based Integrated Planning & Monitoring System : **How it works?**



GIS Application

Gram Panchayat use GIS software for:

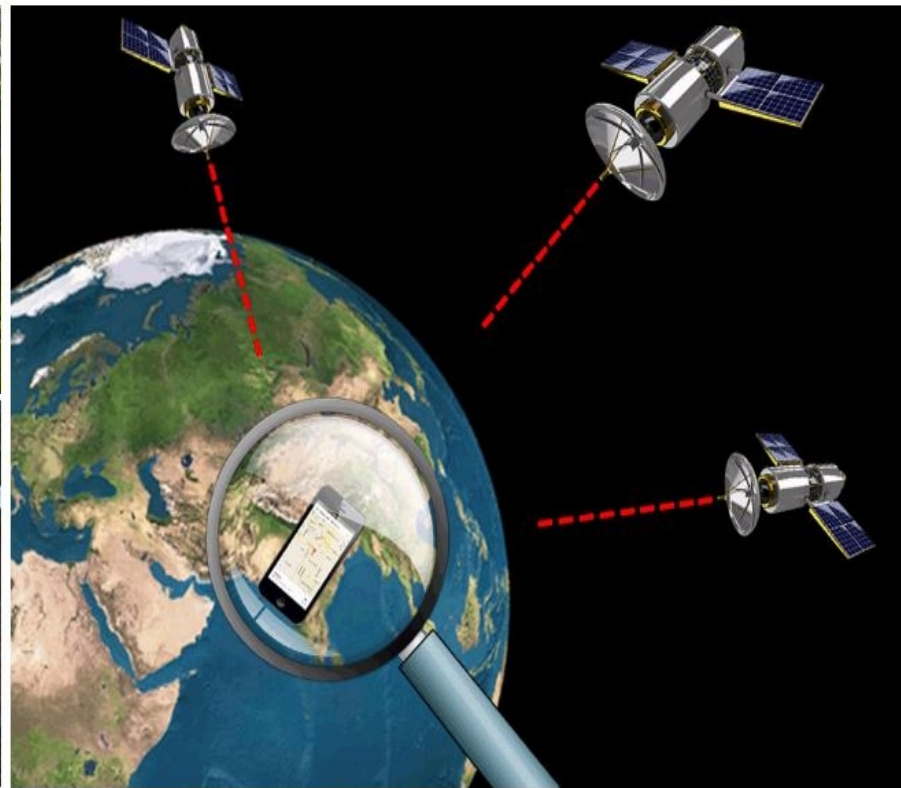
- (a) Planning with GIS tools
- (b) Real time monitoring of planned projects with image
- (c) Comparative Analysis of performance

Institutional Strengthening of Gram Panchayats Project

Panchayats & Rural Development Department, Government of West Bengal
Monitoring through GIS



Home | Map | Planned Activity | Dashboard | Meetings | Public Amenities | Mobile Application | Activity Capturing Status



Introduction of GIS based technology to Gram Panchayat monitoring is a rich value addition to the state oversight being managed by a comprehensive web based application .

The GIS protocol has been designed in a way so that it validates the progress with regard to planning, institutional functioning, people centric governance with the help of GPS technology. [click for more](#)



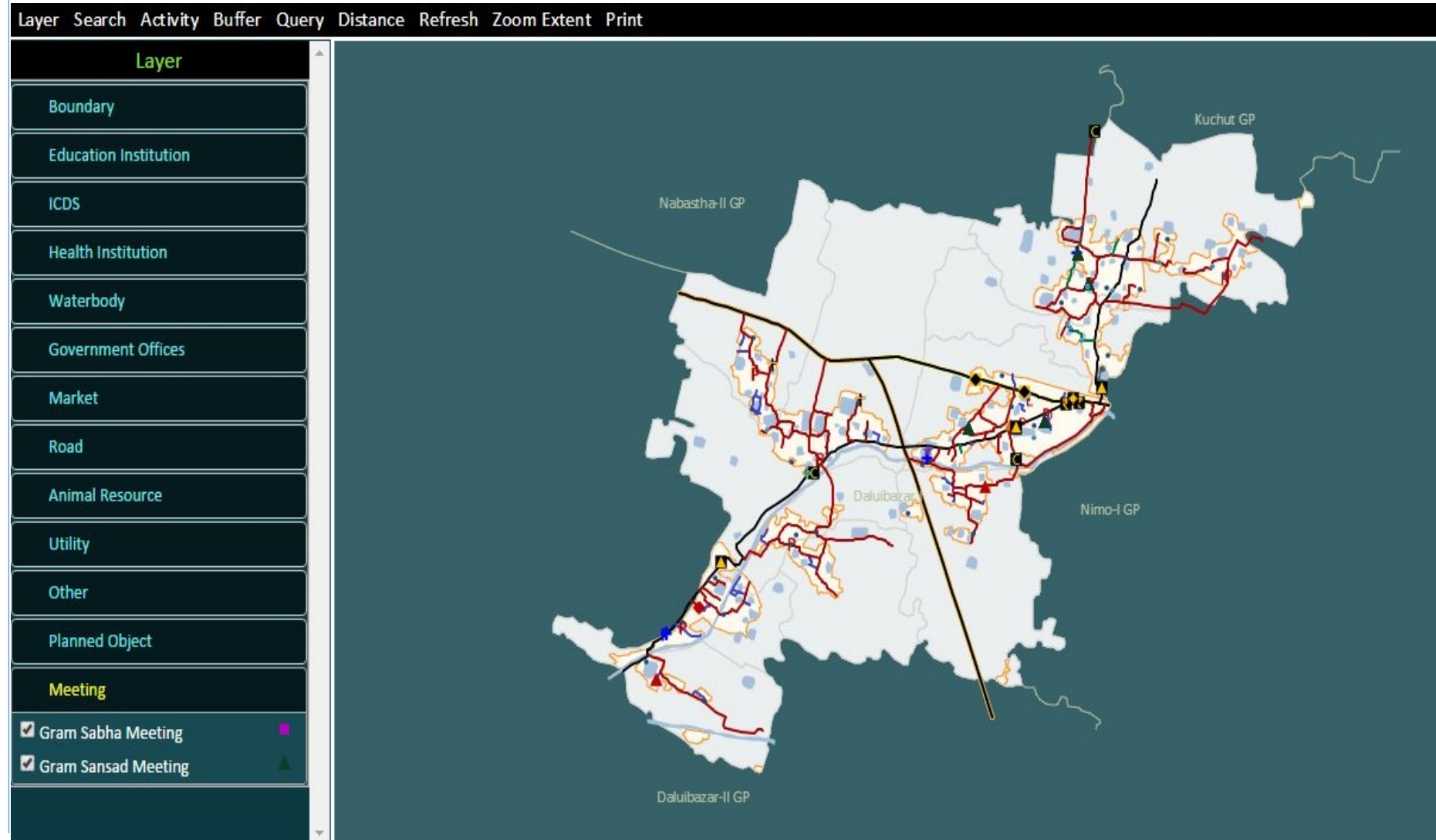
GIS Based Integrated Planning & Monitoring System : **How it works?**



GIS Application

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GIS Based Integrated Planning & Monitoring System : **How it works?** A **RECAP**



MIS Application

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GIS Application

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The GIS based integrated
planning & monitoring system as









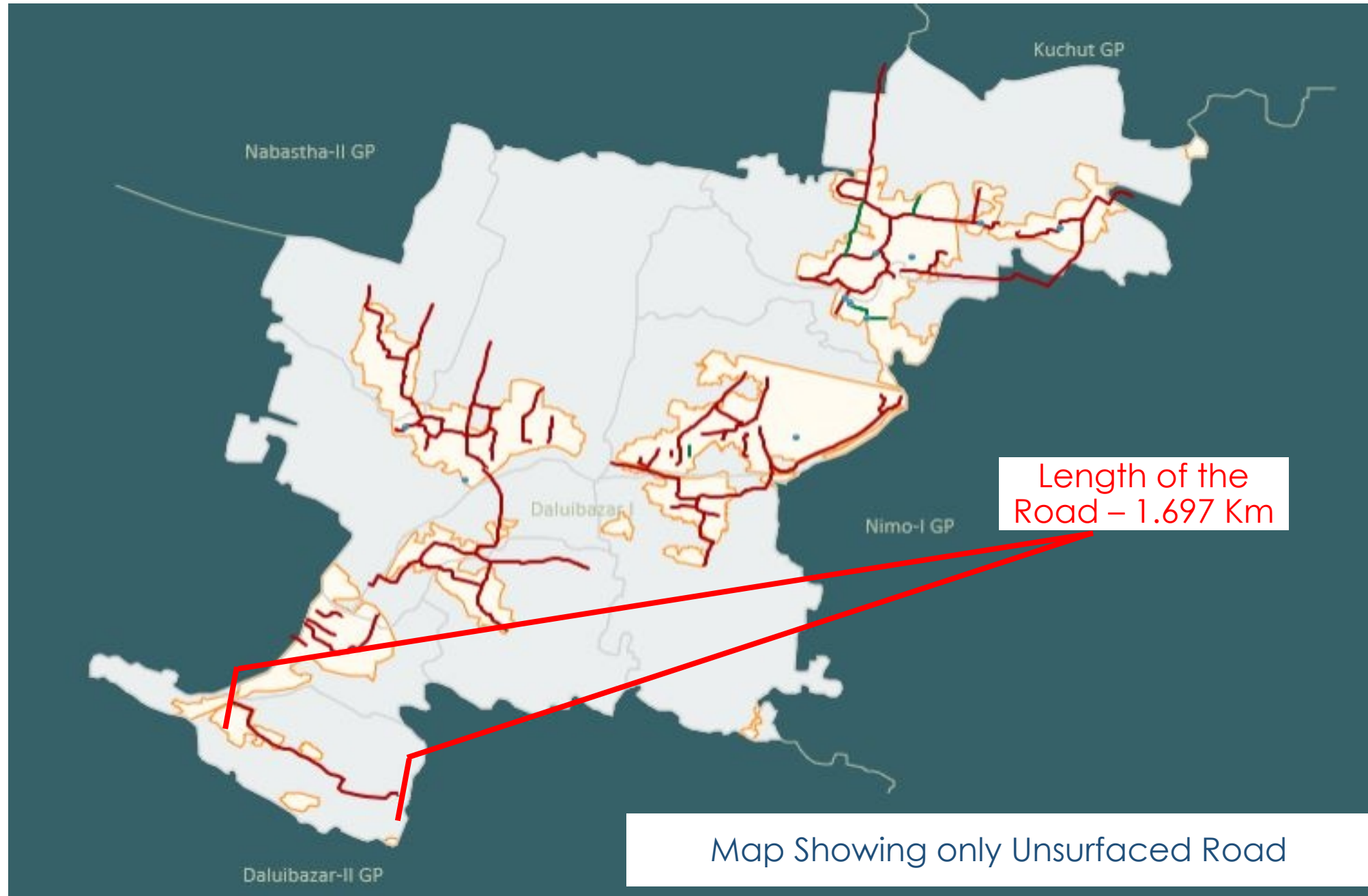
**Asset
Repository**

**Planning
tool**

Spatial Planning with the help of GIS Map

Road Network of Gram Panchayat

National Highway	
State Highway	
Blacktop Road	
Concrete Road	
Brick Road	
Unsurfaced Road	



Spatial Planning with the help of GIS Map

Primary Schools at Gram Panchayat

Boundary

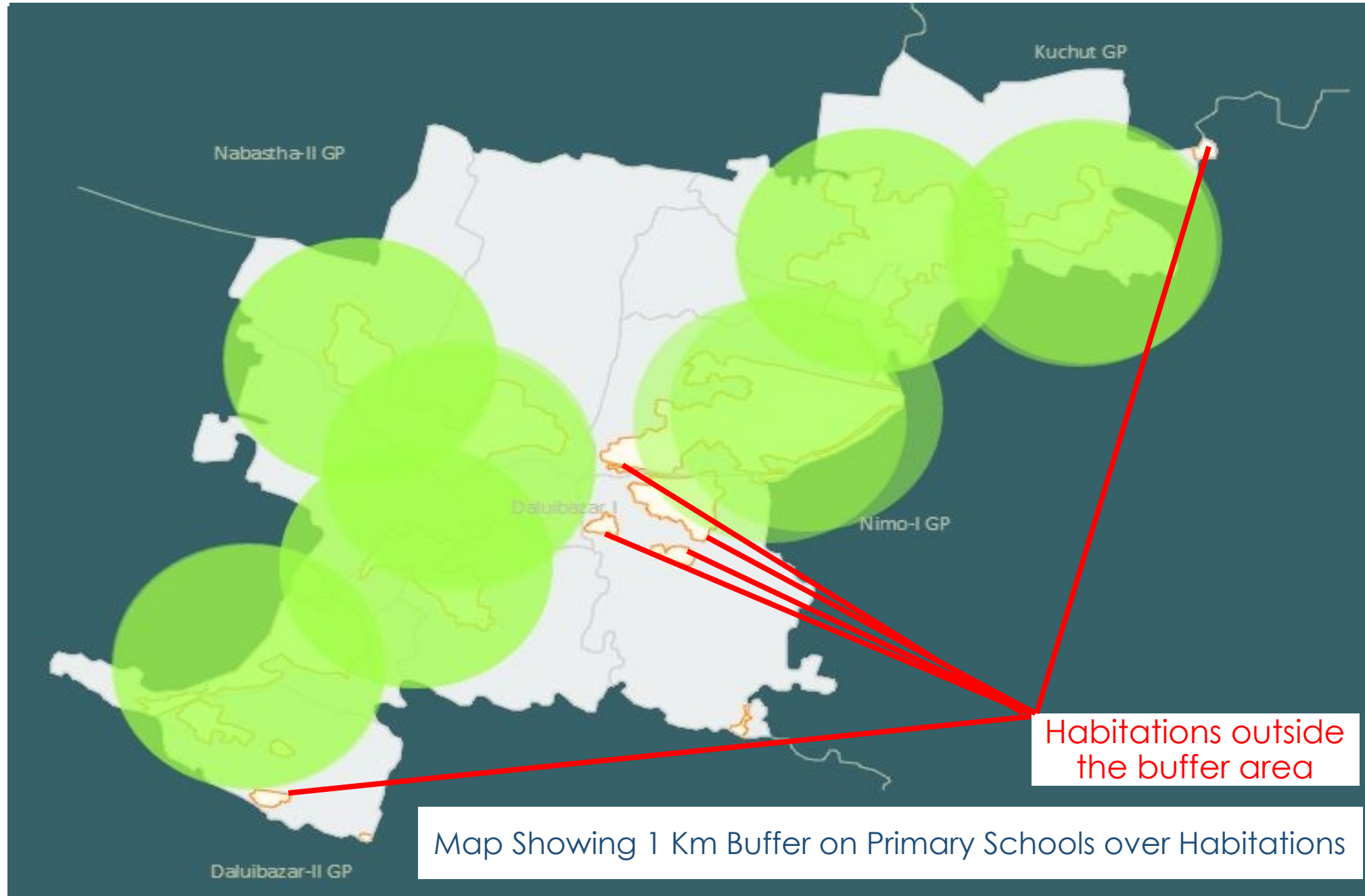
Gram Panchayat

Revenue Village

Education Institution

Primary School

1 Km Buffer 



The GIS based integrated
planning & monitoring system
as a **monitoring** tool

MIS

GIS

**Real Time
Monitoring
with the help of**


**Gram
Sansad
(Ward Level)
Meetings in
Gram
Panchayat**

Boundary

- Gram Panchayat
- Revenue Village
- Habitation

Meeting






- Gram Sabha Meeting
- Gram Sansad Meeting

Consolidated Report on Gram Sansad Meeting

<p>Gram Sansad Name: Daluibazar-I/I Meeting Date: 28/05/2015 16:22:18 Attendance-113 Female Attendance-62 Attendance % - 19% Female Attendance %- 54.9%</p> 	<p>Gram Sansad Name: Daluibazar-I/II Meeting Date: 01/06/2015 17:02:31 Attendance-139 Female Attendance-68 Attendance % - 17% Female Attendance %- 48.92%</p> 
<p>Gram Sansad Name: Daluibazar-I/III Meeting Date: 04/06/2015 16:53:18 Attendance-109 Female Attendance-59 Attendance % - 15% Female Attendance %- 54.12%</p> 	<p>Gram Sansad Name: Daluibazar-I/IV Meeting Date: 22/05/2015 16:27:17 Attendance-103 Female Attendance-67 Attendance % - 13% Female Attendance %- 65.04%</p> 
<p>Gram Sansad Name: Daluibazar-I/V Meeting Date: 25/05/2015 17:08:33 Attendance-148 Female Attendance-58 Attendance % - 19% Female Attendance %- 39.72%</p> 	<p>Gram Sansad Name: Daluibazar-I/VI Meeting Date: 27/05/2015 17:36:29 Attendance-94 Female Attendance-48 Attendance % - 12% Female Attendance %- 48.5%</p> 

Monitoring with the help of Web MIS

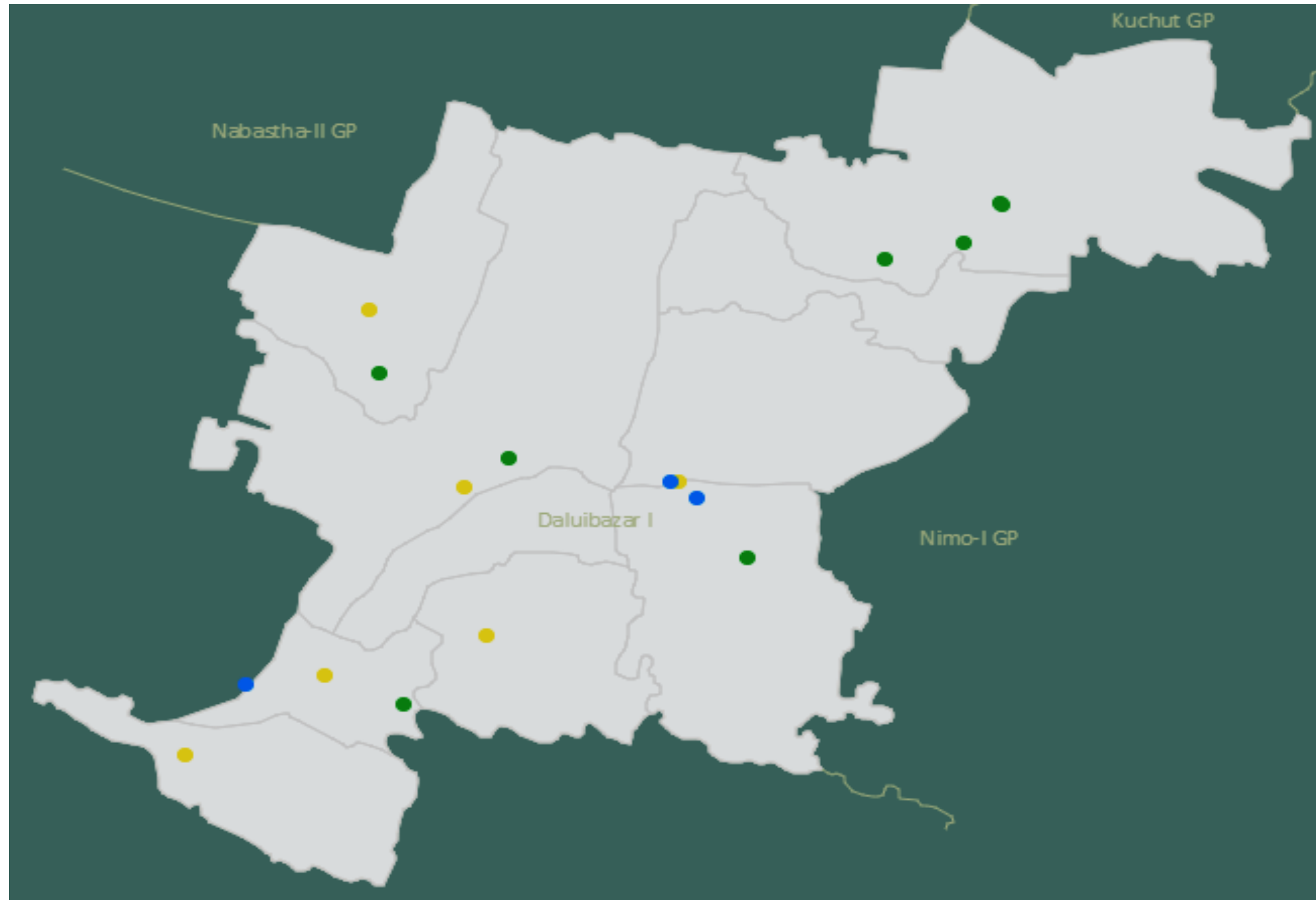
Physical Progress of Planned Projects by Gram Panchayat

Sl No.	Name of the Work	Location	Sub-Committee	Nature of Work	Approved Budget	Status	View Details
1	Construction of ICDS Centre beside Jyotkrishnapur Primary School	Sansad No.- IV, Mouza Name - Rangpur	Nari-Sishu Unnayan o Samajkalyan	Building – New Construction	589000.00	Ongoing	
2	Construction of Culvert near Daspara ration shop	Sansad No.- IX, Mouza Name – Daspara	Shilpa o Parikathamo	Others – New Construction	342000.00	Completed	
3	Construction of Concrete road from the house of Rabi Mondal to the Chandanpur SSK	Sansad No.-II, Mouza Name – Chandanpur	Shilpa o Parikathamo	Roads – New Construction	725000.00	Not Started	
4	Installation of sub submersible pump at golar math	Sansad No.- VII, Mouza Name – Basudebpur	Krishi o Sanslisto	Irrigation – New Work	610000.00	Completed	
5	Installation of Mark -II tubewell at Dhalipara ICDS centre	Sansad No.- III, Mouza Name – Daspara	Nari-Sishu Unnayan o Samajkalyan	Water Supply – New Work	174000.00	Completed	

Real Time Monitoring with the help of Web MIS

Physical Progress of Planned Projects by Gram Panchayat

Planned Object	
<input checked="" type="checkbox"/> Activity	
Current Progress	
In Plan Document	17
Captured in GIS	17
Yet to begin	3
Work in Progress	6
Completed	8



Real Time Monitoring with the help of Web MIS

Physical Progress of Planned Projects by Gram Panchayat

Planned Object	
<input checked="" type="checkbox"/> Activity	
Current Progress	
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Real Time Monitoring with the help of GIS Map




Physical Progress of Projects - Comparative Status on District Map

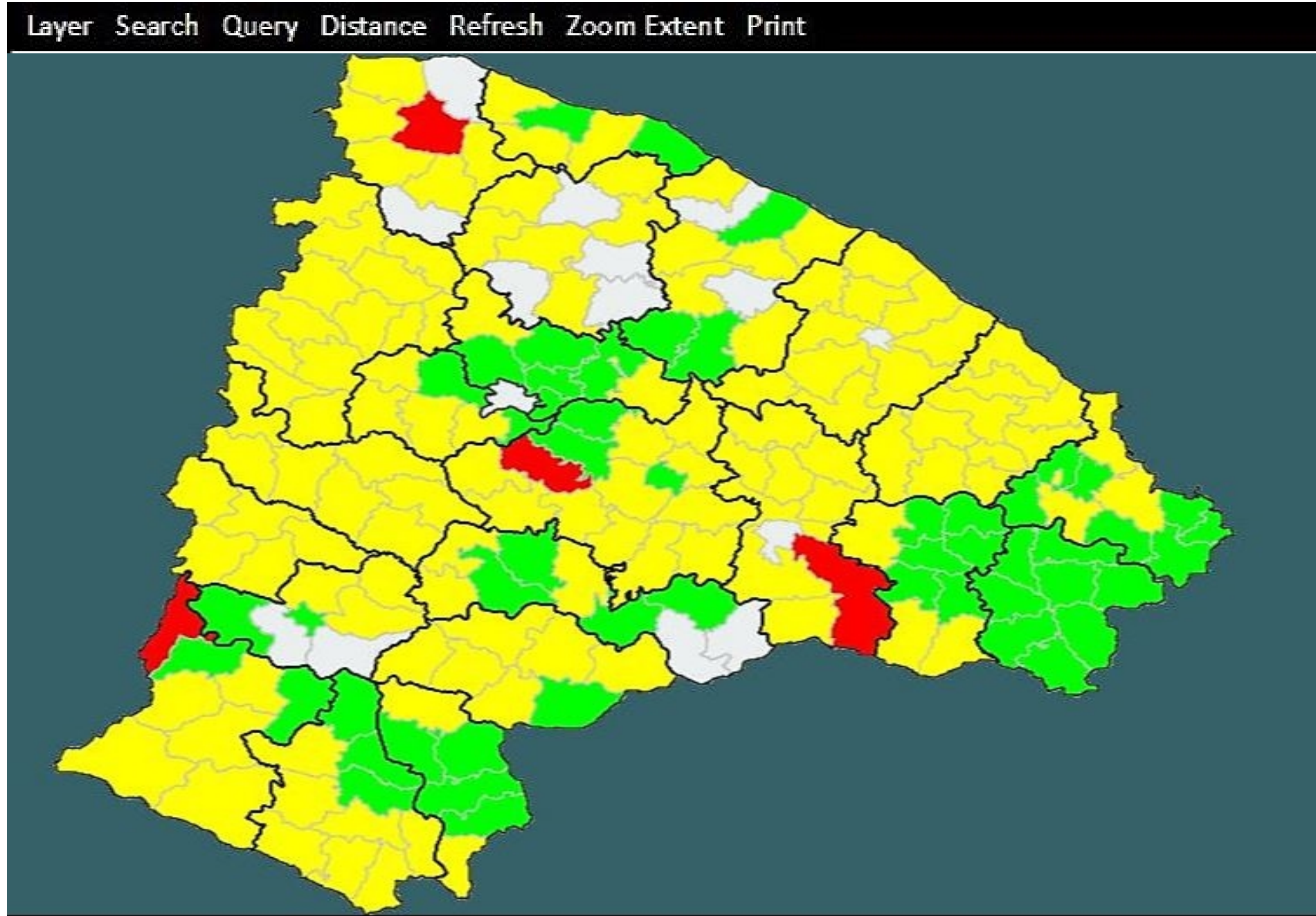
Planned Object

Activity

Execute Range Query

Legend

	46.0	58.76
	58.77	71.53
	71.54	84.3



Real Time Monitoring with the help of Dashboard

Physical Progress from District Level to Project Level could be viewed in one window

Physical Progress of planned activities

Completed
Work in Progress
Not Implemented

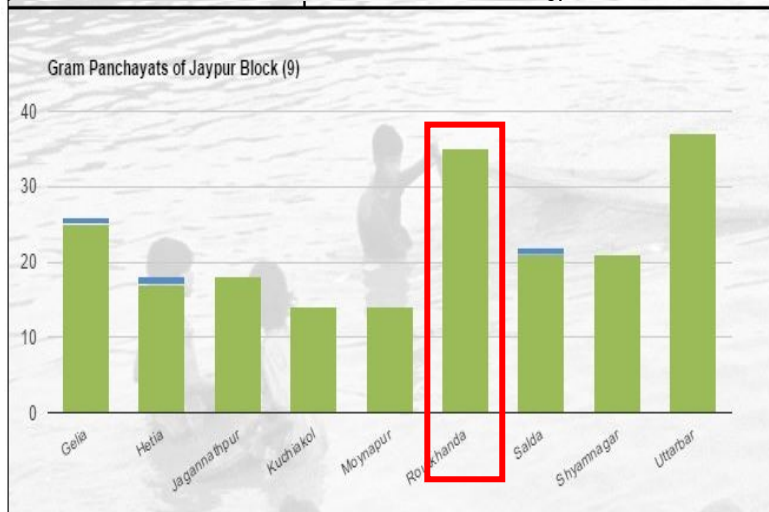
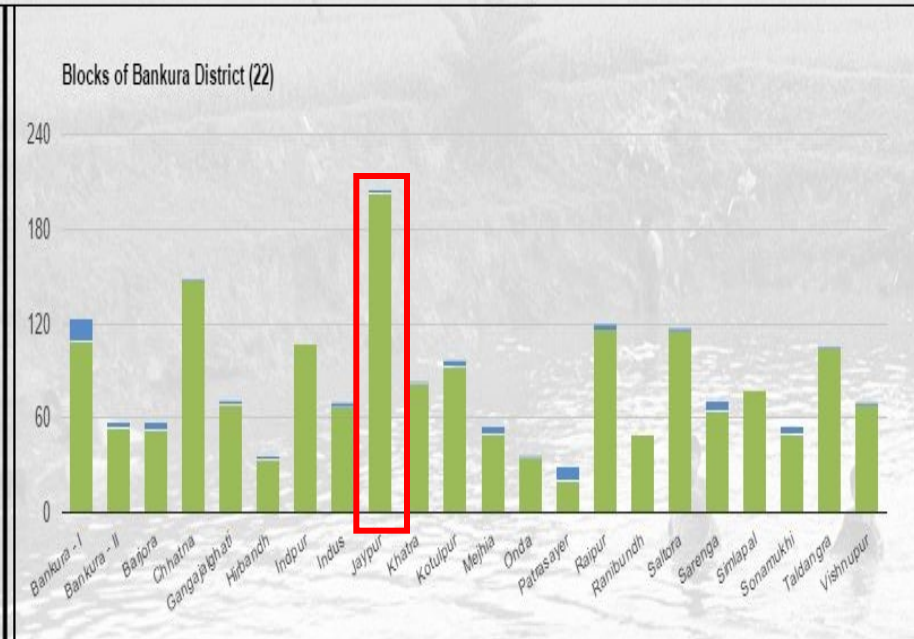
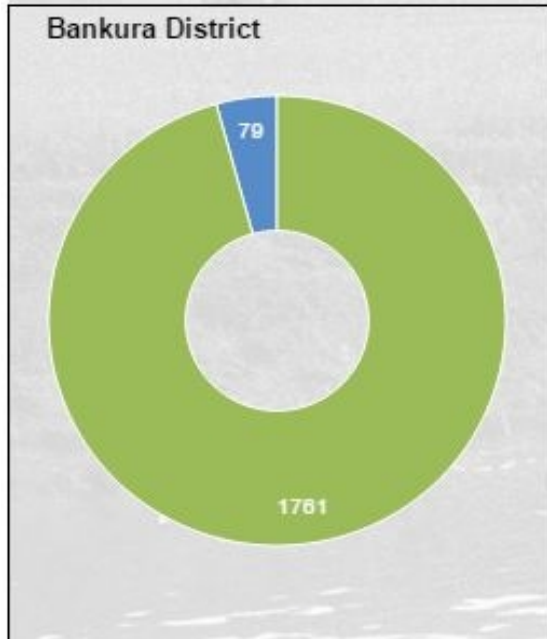
District: **Bankura**

Select Financial Year: **2014 - 2015**

Select Dataset: **Till date**

Proceed

District > Block > Gram Panchayat > Project > Status Report



Activity List – Routkhanda Gram Panchayat

Page no.	Sl. no.	Name	Status
69	497	Construction of Pcc Road From Pucca Rasta Towards Anukul Mandal House via Harish Chandra House at Paranpur Sansad	Completed
70	499	Construction of Pcc Road With Road Protection Wall From Beside of Sova Builders South Side Pucca Rasta to Ajit Karmakar Arun	Completed
70	500	Construction of Pcc Road From	Completed

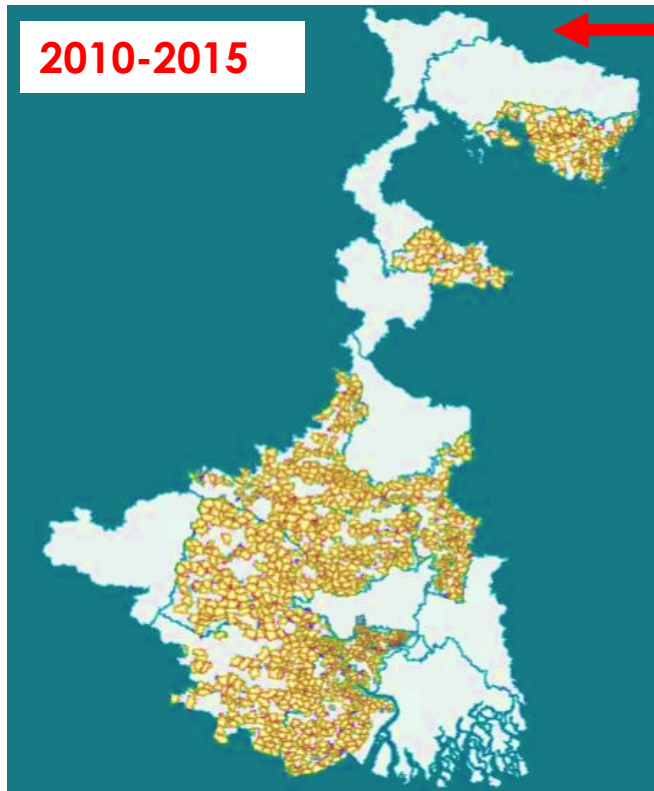


Start Date : 29-05-2015
End Date : 22-07-2015
Work Nature : Roads - New Work
Upa Samiti Name : Silpa-o-Porikathamo
Sector Name : Parikathamo
ESMF Complied : Y
Estimated Cost (Rs. in lakhs) : 2.9
Expenditure till date (Rs. in lakhs) : 2.89

GIS based integrated planning & monitoring system: **Challenges Faced**

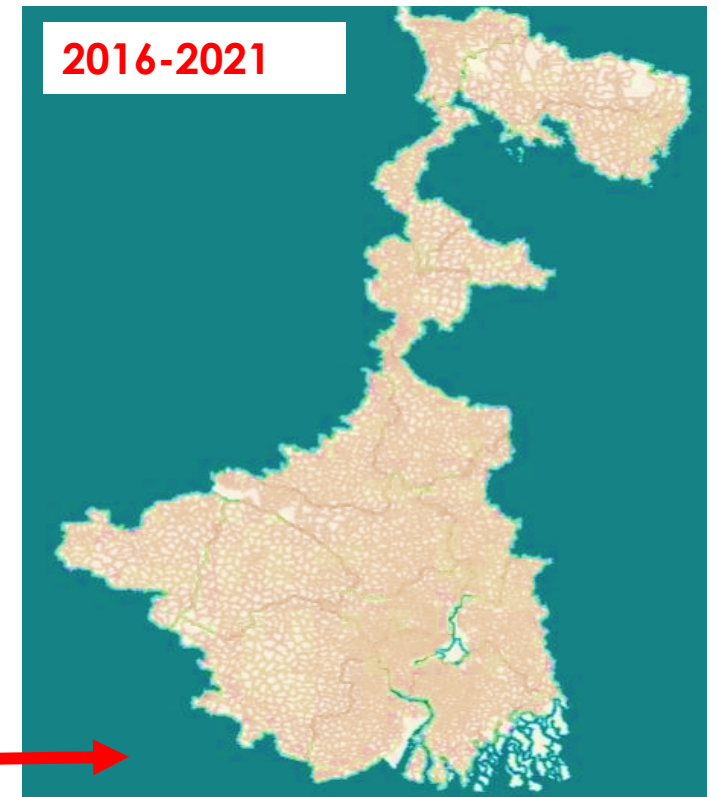
- **Internet connectivity** has been an issue of major challenge. The entire system has been optimized to be operated on 2G network
- **Mobile network availability**: applications have been designed to operate mostly on 2G or no network
- **Digital literacy of Gram Panchayat functionaries** has been another major challenge. Rigorous training and intensive handholding support to GP elected representatives and employees have been undertaken

GIS based integrated planning & monitoring system: **The way forward**



The Web Based Integrated Planning and Monitoring system has been designed, developed, tested and institutionalized in 1000 GPs during ISGP Project Phase-I (2010-2015)

The system will be rolled out to the entire state as a single window solution to planning and monitoring during ISGP Project Phase-II (2016-2021)



GPs Covered: 1000
Districts Covered: 9
Population Covered – 1.9 Crore

GPs Covered: 3235
Districts Covered: 19
Population Covered – 6.2 Crore

Web based integrated planning & monitoring system: **Value Addition**

- Gram Panchayats have completely done away with manual system of data management, paper based reporting
- Web MIS and Web GIS is now part of Gram Panchayat Administration, Planning and Real time monitoring
- The Integrated system has been a massive value addition to transparency and public accountability by Gram Panchayats
- At least 3 functionaries in each Gram Panchayats are trained to use these systems flawlessly
- **West Bengal Gram Panchayats are graduating to be global institutions**

GIS based integrated planning & monitoring system: **Cost factor and replicability**

- Capital Expenditure – **INR 18.5 Thousand Per GP for 1000 GPs**
 - Cost of Mobile Phone, Software Development, Setting Up IT Infrastructure) – **INR 17 Thousand Per Gram Panchayat**
 - Cost of Foundation and Refreshers Training (5 Sessions for GP functionaries of each Gram Panchayat) – **INR 1.5 Thousand Per Gram Panchayat**
- Total Project Cost – **INR 1.85 Crore for 1000 Gram Panchayats**
- Recurring Expenditure – **INR 130 Per GP Per Month**
(for mobile internet – borne by GPs)
- Cost for Replication – **INR 1.12 Crore (for Rest of the state)**
 - Cost of Mobile Phones INR 5 Thousand Per GP for 2235 GPs



The journey has begun..