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.
2. Concrete Road – 7.4 Km.
4. Hand Pump – 284
5. Primary School – 27
6. Sishu Sikhsha Kendra - 6
7. Upper Primary School – 7
8. Secondary/HS School – 5
9. Madrasa – 1
10. ICDS Center – 21
11. Primary Health Centre - 1
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
GIS Based Integrated Planning & Monitoring System: **How it works?**

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Progress related to Institutional Strengthening Issues of Gram Panchayat

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

1. **1.1 Maintenance of different Registers**
2. **1.2 Status of Form 26 and 27 Reports (Cumulative Data till the month of reporting)**
3. **1.3 Information related to procurement by the Gram Panchayat (Cumulative Data till the month of reporting)**
4. **1.4 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)**
5. **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)**
6. **1.5 Regularity in the occurrence of various GP level meetings**
7. **1.6 Audit Related Information**
8. **1.7 Generation of Own Source Revenue (Cumulative Data i.e. from the beginning of the Financial Year)**
9. **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
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The GIS-based integrated planning & monitoring system as an 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

Length of the Road – 1.697 Km

Map Showing only Unsurfaced Road
Spatial Planning with the help of GIS Map

Primary Schools at Gram Panchayat

Map Showing 1 Km Buffer on Primary Schools over Habitations

Habitations outside the buffer area

1 Km Buffer
The GIS based integrated planning & monitoring system as a *monitoring* tool
## Consolidated Report on Gram Sansad Meeting

### Daluibazar-I/I
- **Meeting Date:** 28/05/2015 16:22:18
- **Attendance:** 113
- **Female Attendance:** 02
- **Attendance % - 10%**
- **Female Attendance % - 54.9%**

### Daluibazar-I/II
- **Meeting Date:** 01/06/2015 17:06:31
- **Attendance:** 139
- **Female Attendance:** 08
- **Attendance % - 17%**
- **Female Attendance % - 48.92%**

### Daluibazar-I/III
- **Meeting Date:** 04/06/2015 18:53:18
- **Attendance:** 109
- **Female Attendance:** 09
- **Attendance % - 15%**
- **Female Attendance % - 54.12%**

### Daluibazar-I/IV
- **Meeting Date:** 22/05/2015 16:27:17
- **Attendance:** 103
- **Female Attendance:** 07
- **Attendance % - 13%**
- **Female Attendance % - 65.04%**

### Daluibazar-I/V
- **Meeting Date:** 25/05/2015 17:08:33
- **Attendance:** 143
- **Female Attendance:** 08
- **Attendance % - 18%**
- **Female Attendance % - 49.72%**

### Daluibazar-I/VI
- **Meeting Date:** 27/05/2015 17:38:09
- **Attendance:** 94
- **Female Attendance:** 48
- **Attendance % - 12%**
- **Female Attendance % - 51.06%**

### Daluibazar-I/VII
- **Meeting Date:** 07/06/2015 17:06:31
- **Attendance:** 117
- **Female Attendance:** 53
- **Attendance % - 13%**
- **Female Attendance % - 45.72%**

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**Report on Annual Gram Sansad Meeting: Daluibazar Gram Panchayat**

*GIS Map*

*Real Time Monitoring with the help of WebMIS*
## Monitoring with the help of Web MIS

### Physical Progress of Planned Projects by Gram Panchayat

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

Physical Progress of Planned Projects by Gram Panchayat

<table>
<thead>
<tr>
<th>Current Progress</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Plan Document</td>
<td>17</td>
</tr>
<tr>
<td>Captured in GIS</td>
<td>17</td>
</tr>
<tr>
<td>Yet to begin</td>
<td>3</td>
</tr>
<tr>
<td>Work in Progress</td>
<td>6</td>
</tr>
<tr>
<td>Completed</td>
<td>8</td>
</tr>
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</table>
Real Time Monitoring with the help of Web MIS

Physical Progress of Planned Projects by Gram Panchayat

<table>
<thead>
<tr>
<th>Planned Object</th>
<th>Current Progress</th>
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<tbody>
<tr>
<td>Activity</td>
<td>In Plan Document</td>
</tr>
<tr>
<td></td>
<td>17</td>
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</table>

Activity: Const. of Concrete Road
Real Time Monitoring with the help of GIS Map

Physical Progress of Projects - Comparative Status on District Map
Physical Progress from District Level to Project Level could be viewed in one window.
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..