

Multi -Hazard DDMP

Gaya, Jehanabad, Aurangabad, Arwal

Review & Consultation Workshop

Presentation by

Global Rescue Consultants Pvt Ltd (GRCPL)

for

**Bihar State Disaster Management Authority
(BSDMA)**



6-7 January 2016
At Patna





Status of Progress in the Process of Making DDMP

The Methodology

Step-1: Planning Workshop



Step-2: Ground Work



Step-3: HRVCA Workshop



Step-4: Department Wise Meeting



Step-5: Preparation & Testing of SOPs



Step-6: Dev. of Preparedness & Response Plan



Step-7: Development of Mitigation Plan



Step-8: Drafting of DDMP

Step-9: Final Consultation on Draft DDMP



Step-10: Revision of DDMP & Submission to BSDMA/DDMA



Step-11: Handholding of DDMP

Progress Status

Step	Methodology Step	Status
1	Planning Workshop (distt level)	Completed
2	Ground Work	Majority Completed
3	Progress cum HRVCA Workshop (distt Level)	Completed
4	Department wise Meetings	Completed
5	Preparation & Testing of SOPs	Yet To Be Done
6	Dev. of Preparedness & Response Plan	Started
7	Development of Mitigation Plan	Started
8	Drafting of DDMP	Yet To be Done
9	Final Consultation on Draft DDMP	Yet To be Done
10	Revision of DDMP & Submission to BSDMA/DDMA	Yet To be Done
11	Handholding of DDMP	Yet To be Done



Stakeholders Consultations Held in Districts

Stakeholders Consultations

Sr	District	Chaired BY	Date
<u>Distt Level Planning Workshop</u>			
1	Gaya	ADM	24 August 2015
2	Jehanabad	DM	22 August 2015
3	Aurangabad	ADM	1 September 2015
4	Arwal	DM	21 August 2015
<u>Distt Level Progress & HRV Workshop</u>			
1	Gaya	DM	12 Dec 2015
2	Jehanabad	ADM	23 Nov 2015
3	Aurangabad	SDC	28 Dec 2015
4	Arwal	DM	7 Dec 2015

Stakeholders Consultations

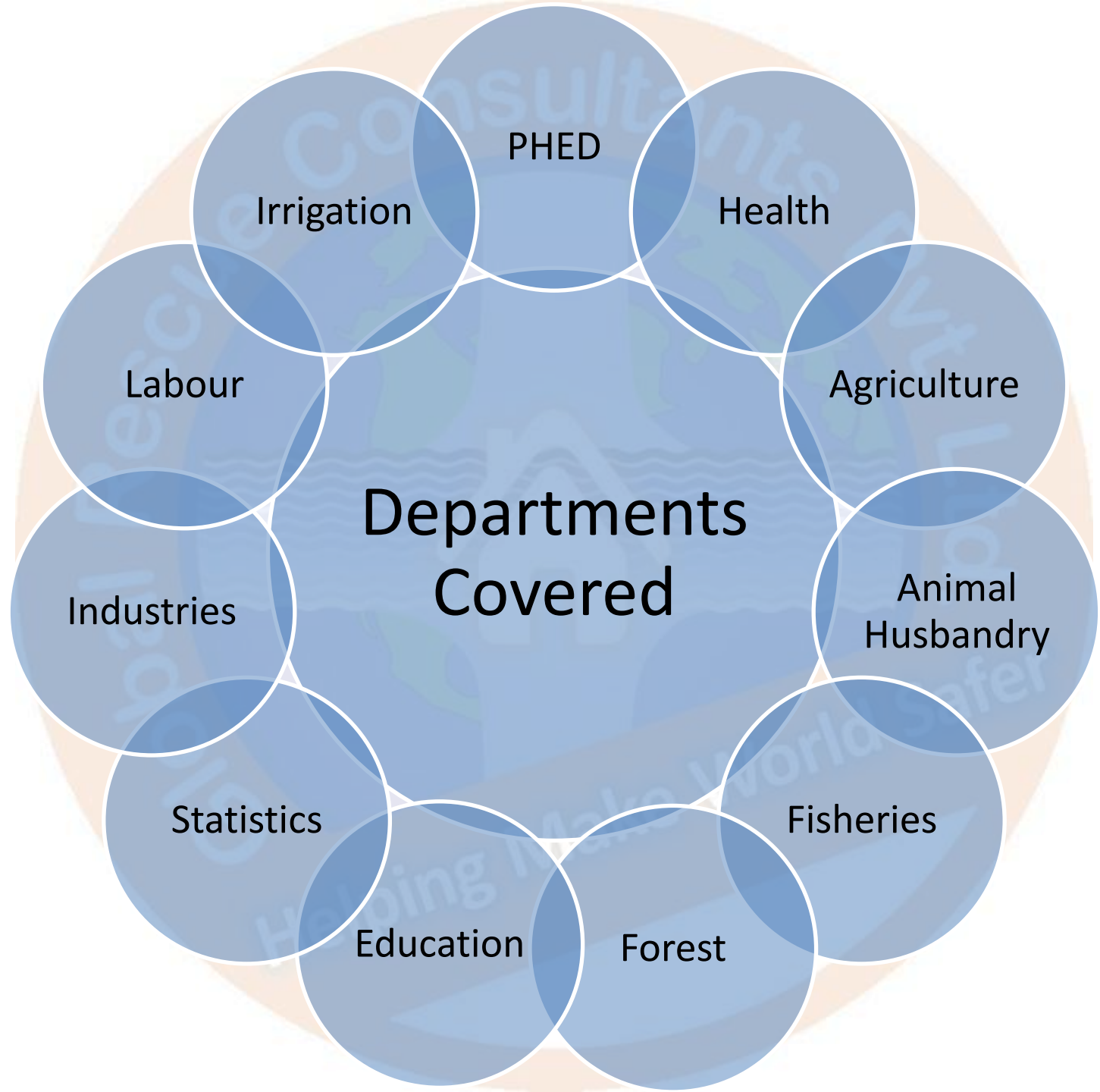
Gaya Sub-Division Level Progress & HRV Workshop

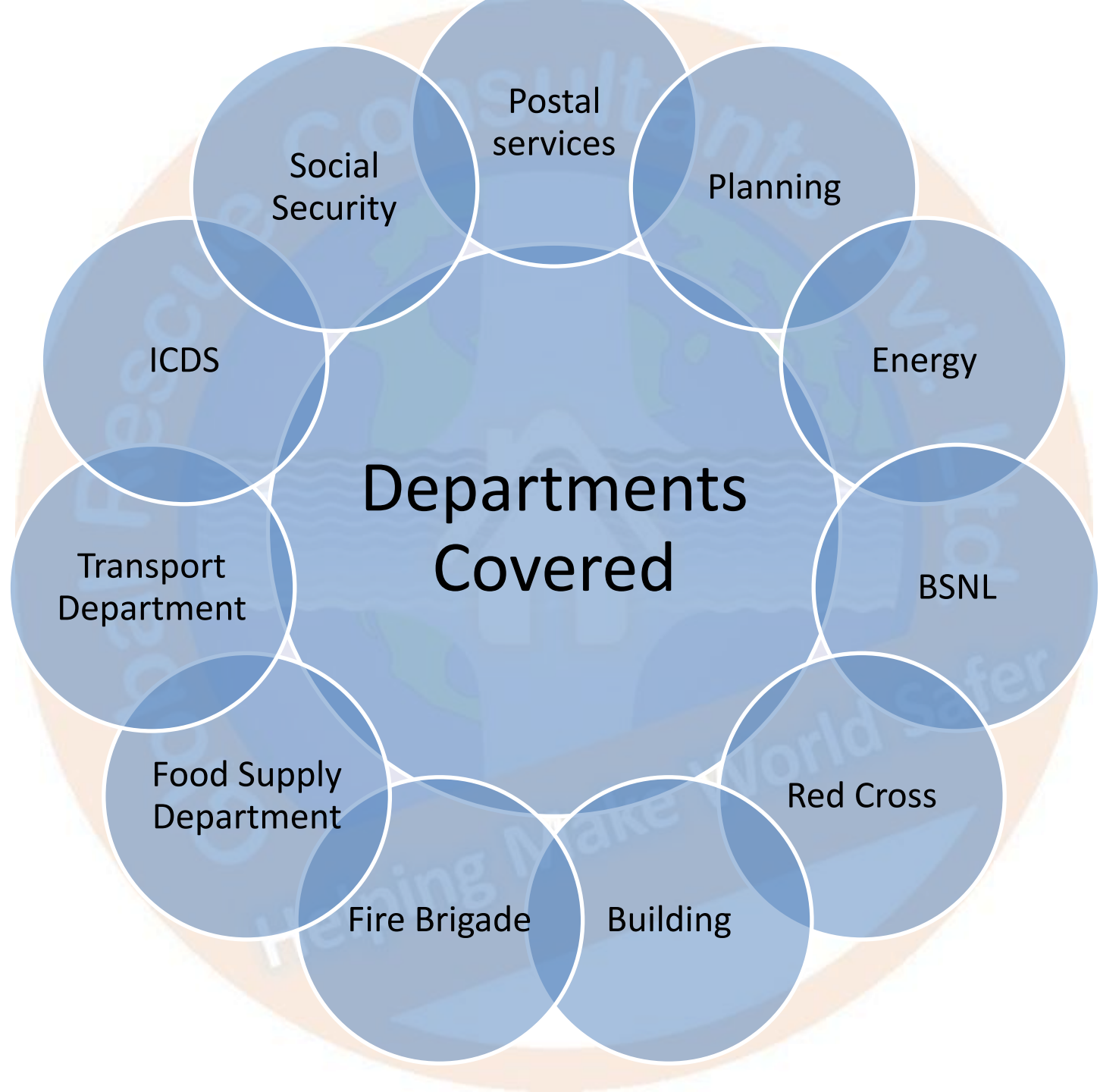
1	Tekari	16 Dec 2015
2	Sherghati	17 Dec 2015
3	Neemchak Bathani	18 Dec 2015
4	Gaya Sadar	19 Dec 2015

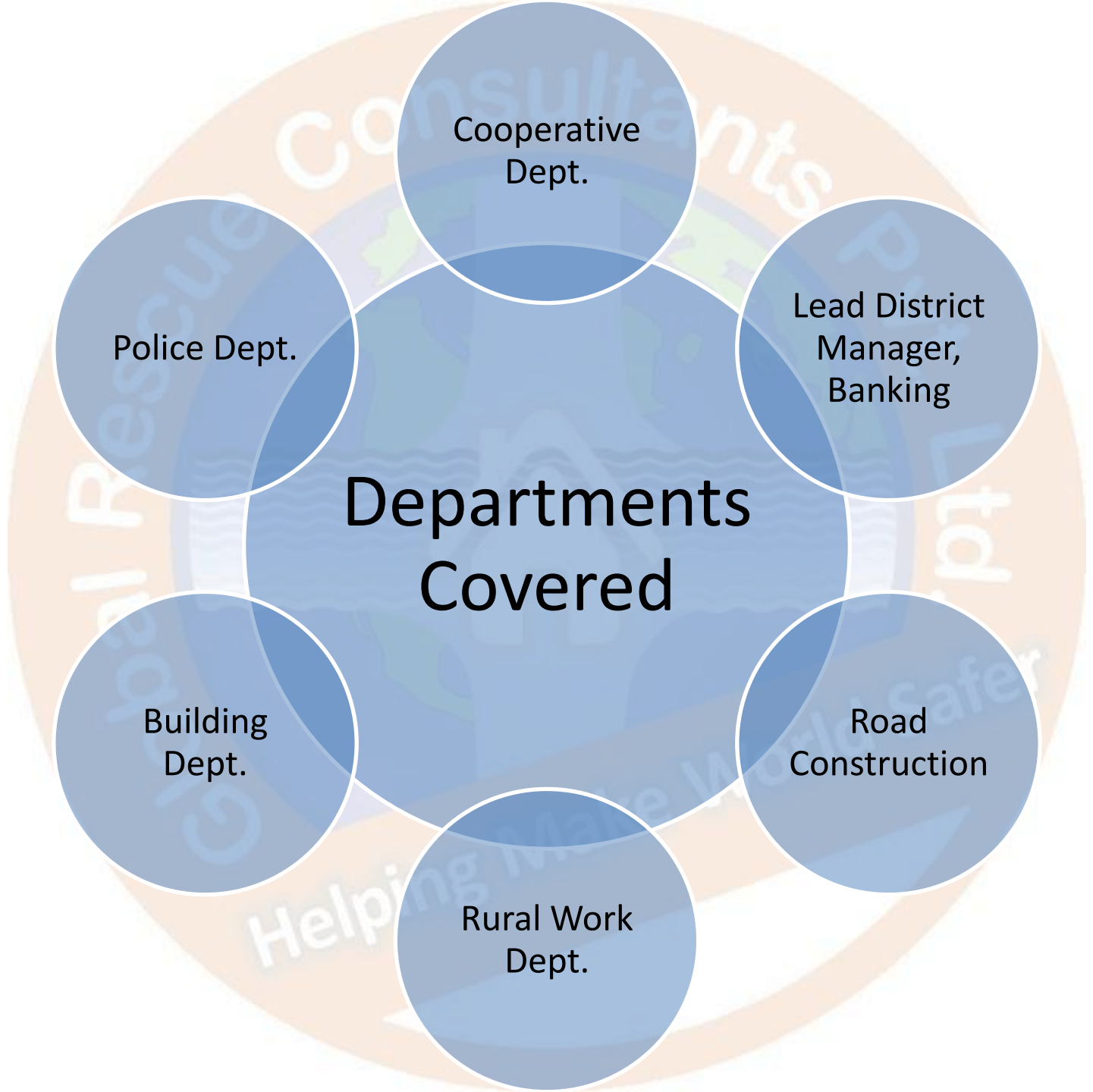
Stakeholders Consultations

Sr	Distt	Status
	Department wise meetings	
1	Gaya	Completed
2	Jehanabad	Completed
3	Aurangabad	Completed
4	Arwal	Completed
Departments Covered:		









Departments Covered

Cooperative
Dept.

Lead District
Manager,
Banking

Road
Construction

Rural Work
Dept.

Building
Dept.

Police Dept.

Stakeholders Consultations

Sr	Distt	Status
	Other Stakeholders	
1	NCC	Consulted
2	Scout & Guides	Consulted
3	NGO's	Consulted
4	Red Cross Society	Consulted
5	Schools	To be consulted
6	Hospitals	To be consulted
7	Business Associations	To be consulted



Reach to Blocks, PRIs & ULBs

Blocks, PRIs & ULBs

Sr	Distt	Covered
1	Gaya	4 Wards (29,30,50,51) and 9 villages
2	Aurangabad	12 villages
3	Arwal	6 villages
4	Jehanabad	12 villages

Sr	Distt	Total Blocks	Blocks Covered
1	Gaya	24	19
2	Aurangabad	11	11
3	Arwal	5	5
4	Jehanabad	7	7



Highlights of the DDMPs: Process & Content

Highlights: Process

District Coordinators

➤ 1 Full Time Coordinator for each district

Distt	Coordinator	Qualification
Gaya	Belal Anwar	Masters in D.M. TISS
Jehanabad	Kunal Sharma	Pursuing PhD in Indl Chemical D.M.
Aurangabad	Parveen Saroha	Masters in D.M. TISS
Arwal	Prathmesh Baviskar	Masters in D.M. TISS

Highlights: Process

Guiding Principle

➤ **Ownership Building**

- ❖ Involvement of D.M., ADM, SDC
- ❖ Office Space at District HQ
- ❖ Involvement of Line Deptts, COs, BDOs
 - ❖ Involvement of Mukhiyas
- ❖ Involvement of other stakeholders

➤ **DDMP should connect with the people**

➤ **Workable DDMP**

Highlights: Process

- **Planning Meeting at New Delhi Office**
- **Ground Work Planning based upon the Inputs in Planning Workshop at Distt Level**
- **Secondary Data Collection from Line Departments**
- **Initial Analysis of Secondary Data & then Revised Planning for Field Visits**
- **Use of Feedback form in Planning Workshop**
- **Improvement in consultation workshops' approach based upon Resource Persons' feedback**
- **Open Discussions in Planning Workshop on pre-defined questions**
 - **Review meeting at BSDMA with team**

Highlights: Process

➤ Ground Work divided into 6 Major Exercises

1. District profile
2. HRV Analysis
3. Capacity Analysis
4. Mitigation
5. Response
6. Preparedness

Comprising more than 40 forms

Highlights: Process

- Review Planning Workshop at New Delhi
- Study of HRVA methodology adopted by various agencies in the past and selection of tools relevant for our working
- Development of Checklist to monitor & assess ground work progress
- HRVC workshop: Open discussion guided through pre-defined questions
- Visit to Each block & Vulnerable Panchayats
 - Gaya: Sub-Division Level workshops
 - PRA Exercises

Highlights: Process

- **Planning Workshop at Gaya Chaired by ADM
on 24th August 2015**



Highlights: Process

- **Planning Workshop at Gaya Chaired by ADM**
on 24th August 2015



Highlights: Process

- **Planning Workshop at Arwal Chaired by ADM**
on 21th August 2015



Highlights: Process

- **Planning Workshop at Jehanabad Chaired by DM
on 22th August 2015**



Highlights: Process

- Progress & HRVA Workshop at Aurangabad
On 28th Dec 2015



Highlights: Process

- **Sub-Division Level Progress & HRVA Workshop at Gaya**
During 16 to 19 Dec 2015



Highlights: Process

- **Sub-Division Level Progress & HRVA Workshop at Khijarsarai, Gaya During 16 to 19 Dec 2015**



Highlights: Process

- **Sub-Division Level Progress & HRVA Workshop at Tekari, Gaya During 16 to 19 Dec 2015**



Highlights: Process

प्रश्न 1: आपके अनुसार आपके जिले में किन आपदाओं का खतरा है ? (छोटी , बड़ी सभी)

What are the hazards (disasters) your district is prone to?

प्रश्न 2: आपका (या आपके विभाग या संगठन का) आपदा प्रबंधन में क्या रोल (भूमिका) है ?

What is the existing role/work of your department/organization (or your) in the disaster management?

प्रश्न 3: आपदा प्रबंधन में आपके विभाग को अन्य किस विभाग को सहयोग करना पड़ता है या सहयोग लेना पड़ता है ? During disaster management what are the interdependency of your department with other departments?

Highlights: Process

प्रश्न 4: आपके अनुसार "जिला आपदा प्रबंधन कार्य योजना" (डी डी एम पी) कैसी होनी चाहिए ? अर्थात् आप इस योजना में क्या चाहते हैं या इस योजना से आपकी क्या अपेक्षाएं हैं ?

What are your expectations from the District Disaster Management Plan?

प्रश्न 5: पूर्व में आपने (या आपके विभाग या आपके संगठन ने) आपदा प्रबंधन का कार्य करते हुए किन समस्याओं का सामना किया है ?

What were the problems faced by you (your department) in the past during Disaster Management at district level?

प्रश्न 6: आपके अनुसार वर्तमान में जिला आपदा प्रबंधन कार्य प्रणाली में क्या कमियां हैं ?

What are the gaps in the present disaster management system at district level?

Disaster आपदा

"disaster" means

- Catastrophe, mishap, calamity or grave occurrence in any area,
- Arising from **natural or manmade** causes, or by accident or negligence
- Which results in **substantial loss** of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment,
- And is of such a nature or magnitude as to be **beyond the coping capacity of the community** of the affected area;

आपदा का मतलब है

- किसी क्षेत्र में तबाही, दुर्घटना, विपत्ति, गंभीर हादसा
- प्रकृति या मानव जनित
- बड़े पैमाने का जान माल, वातावरण का नुकसान या मानवीय पीड़ा
- स्थानीय जनता और प्रशासन की क्षमता से बाहर

Disaster आपदा (as per HPC)

Water and Climate related disasters

1. Floods and Drainage Management
2. Cyclones
3. Tornadoes and Hurricanes
4. Hailstorm
5. Cloud Burst
6. Heat Wave and Cold Wave
7. Snow Avalanches
8. Droughts
9. Sea Erosion
10. Thunder and Lightning

पानी और जलवायु सम्बंधित आपदाएं

1. बाढ़ और जलनिकास प्रबंधन
2. चक्रवात
3. बवंडर और तूफान
4. मूसलधार बारिश
5. बादल फटना
6. लू और शीत लहरी
7. हिमस्खलन
8. सुखाड़
9. समुद्र कटाव
10. गरज और बिजली गिरना

Disaster आपदा (as per HPC)

Geologically related disasters

1. Landslides and Mudflows
2. Earthquakes
3. Dam Failures/ Dam Bursts
4. Mine Fires

भौगोलिक सम्बंधित आपदाएं

1. भूस्खलन और कीचड़ प्रवाह
2. भूकम्प
3. बांध विफलता/ बाँध फटना
4. खदानों की आग

Disaster आपदा (as per HPC)

Chemical, Industrial and Nuclear related disasters

1. Chemical and Industrial Disasters
2. Nuclear Disasters

1. रासायनिक और औद्योगिक आपदाएं

2. नाभिकीय आपदाएं



Disaster आपदा (as per HPC)

Accident related disasters

1. Forest Fires
2. Urban Fires
3. Mine Flooding
4. Oil Spill
5. Major Building Collapse
6. Serial Bomb Blasts
7. Festival related disasters
8. Electrical Disasters and Fires
9. Air, Road and Rail Accidents
10. Boat Capsizing
11. Village Fire

दुर्घटना जनित आपदाएं

1. जंगल की आग
2. शहरी आग
3. खदानों में बाढ़
4. तेल छलकना
5. इमारतों का ढहना
6. सीरियल बम विस्फोट
7. त्यौहार सम्बन्धी आपदाएं
8. बिजली सम्बंधित आपदाएं और आग
9. हवा सड़क और रेल दुर्घटनाएं
10. नाव पलटना
11. गाँव में आग

Disaster आपदा (as per HPC)

Biologically related disasters जैविक आपदाएं

1. Biological Disasters and Epidemics

2. Pest Attacks

3. Cattle Epidemics

4. Food Poisoning

1. जैविक आपदाएं महामारी

2. कीटों के हमले

3. पशु महामारी

4. भोजन विषाक्तता

Helping Make World Safer



Introductory Remarks on DDMP Purpose of Planning Workshop?

**डीडीएमपी पर परिचयात्मक टिप्पणी
योजना कार्यशाला का उद्देश्य**

Ownership Building स्वामित्व का बोध

- For **You**, By **You**
 - It is **your Plan**
 - At the Time of Disaster, You are Part of It
 - **REMEMBER: Its For Me**
- आपके लिए ,
आपके द्वारा
 - यह आपका प्लान है
 - आपदा के समय
आप इस पर निर्भर
रहेंगे
 - हमेशा याद रखिये-
प्लान मेरे लिए है

Purpose of Planning Workshop

योजना कार्यशाला का उद्देश्य

➤ **Consensus Building**
मतैक्य (आम सहमति)

➤ **Participation of all stakeholders**
(Participatory Approach)

सभी हितधारकों की भागीदारी

Purpose of Planning Workshop

योजना कार्यशाला का उद्देश्य

- Interactive Process
- (Your Feedback on ongoing practices, gaps)
- Plan will not be prepared by us
- इंटरैक्टिव प्रक्रिया (परस्पर संवाद)
- चल रहे तरीकों और कमियों पर आपकी प्रतिक्रिया
- प्लान आप बनाएंगे - हम नहीं

Highlights: Process

Planning Workshop at Arwal, Chaired by D.M. (21 August 2015)

Questions asked by the D.M. and other participants

- How many DDMPs have been prepared in India so far?
- **Will the plan be prepared by taking inputs from D.M.?**
- What is the probability of earthquake in Arwal i.e. Arwal's earthquake zonation and risk?
- Will the DDMP prepared by the agency or the DM office has to make it?
- **How will you manage and make plan for old infrastructures and buildings in the district?**
- **Will this plan have provisions to enforce building codes & guidelines or retrofitting of old structures?**
- **How much practical & workable will the DDMP be and what is the plan to ensure the same?**

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Highlights: Process

Planning Workshop at Arwal, Chaired by D.M. (21 August 2015)

Questions asked by the D.M. and other participants

- Is school safety aspect being covered by DDMP or not?
- What are the formats that the line departments have to fill to give their inputs?
- Will DDMP cover disaster due to lightning?
- **Is Civil Unrest also in the scope of DDMP?**
- **Are you also going to include panchayat level issues in D.M. plan?**
- What are the provisions in DDMP for heat wave or cold wave?
- Will DDMP include fire problem due to high voltage electric wires that fall on crops?
- **What are the provisions for private institutions like schools in DDMP.**
- What is broad definition of disaster?

Highlights: Process

Planning Workshop at Arwal, Chaired by D.M. (21 August 2015)

Inputs/Feedback from D.M. and other participants

- Ensure that the formats for data and inputs collection are in Hindi and also that the executives involved in the collection of data are well versed with the relevance of the data required in the DDMP preparation.
- Lower areas along the Sone river are prone to flood hazard?
- Include fire evacuation plan in DDMP.
- Display board on disaster awareness should be placed in schools and hospitals.
- IEC material (Posters etc) should be provided and provision/plan for the same should be highlighted in DDMP.
- Detailed evaluation of the learning from the past disasters should be done.
- There should not be any short cuts while preparing the DDMP.

Highlights: Process

Planning Workshop at Arwal, Chaired by D.M. (21 August 2015)

Inputs/Feedback from D.M. and other participants

- District Coordinator or facilitator of the agency should help the DM office and line departments to get thorough knowledge about the idea behind the whole DDMP process.
- District coordinator should be well versed with the questionnaire to ensure efficient and better data mining.
- Use of satellite phones for line departments during disaster response.
- Include Rihant dam on some river in DDMP for Arwal.
- Provision for enforcement of building bylaws in DDMP.
- Detailed mitigation plan should be there in DDMP.
- DDMP should help initiate training in all line departments.

Highlights: Process

Planning Workshop at Arwal, Chaired by D.M. (21 August 2015)

Inputs/Feedback from D.M. and other participants

- **Separate response plan for single storey and multi storey building should be there in DDMP.**
- **Mock drill provisions in DDMP.**
- **Disasters created due to tin sheets during strong winds/cyclone should be included in DDMP.**
- **Bomb blasts** should be taken care of in the DDMP.
- Train accidents which occur due to pedestrian crossing of railways track should also be included in DDMP.
- **Mid day meal** in schools which causes health issues should also be included in DDMP.

Highlights: Process

Planning Workshop at Arwal, Chaired by D.M. (21 August 2015)

Inputs/Feedback from D.M. and other participants

- **Human resource management during response** of disaster should be included in the DDMP.
- Fire management provisions up to block level.
- SOPs development for all departments.
- **DDMP should be simple to understand and operate.**
- **Response plan should be like DEMP (District Election Management Plan).**
- **All departments and stakeholders should be apprised with the HPC list of 31 types of disasters.**
- Clarity on inter department issues in DDMP.
- **Proper and synchronized planning between all line departments.**

Highlights: Process

Planning Workshop at Aurangabad, Chaired by A.D.M. (1 Sep 2015)

Inputs/Feedback from participants

- Road accident at NH2 is very frequent. Special focus on highway accidents. District Aapda Prabhari herself had faced road accident.
- Fire in villages due to cigarette or bidi or other negligence especially during March to June.
- Land mines blast is a serious issue in Madanpur block.
- Heat waves should be dealt in DDMP.
- Food poisoning should be covered in DDMP.
- Tractor and heavy vehicles driven by children is a serious road hazard.
- Lightening is a serious problem (in Dev area).
- Crowd Management in Dev area especially in Sun Temple.
- Neelgai attack problem should be dealt in DDMP.
- Insects attack (Obra Thana and nearby areas of Haidari river) especially mosquitoes is a serious problem.
- Village level plan should be included in DDMP.
- Vulnerability based plan.

Highlights: Process

Planning Workshop at Aurangabad, Chaired by A.D.M. (1 Sep 2015)

Inputs/Feedback from participants

- **DDMP should be sensitive to local needs.**
- **Crowd management in hospitals** along with proper safety/security arrangements of officials who work in relief operations during disaster.
- Staff availability should be increased for disaster management.
- **A Trauma centre should be opened in Aurangabad.**
- **Fogging machine and other helpful machines in relief operations should be kept at panchayat level.**
- **Well equipped fire stations at strategic locations are required.**

Highlights: Process

Planning Workshop at Aurangabad, Chaired by A.D.M. (1 Sep 2015)

Inputs/Feedback from participants

- Proper canal management is required.
- Roads and divider management.
- Provision for earthquake resistant buildings should be in DDMP.
- **Lack of information technology for disaster management should be taken care of in DDMP.**
- **No proper training is provided to officials to deal with the after effects of disasters.**
- Transport department should be well defined for their role in quick & easy recovery.
- **Role of media and public representatives during and after disaster should be dealt in DDMP.**

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Highlights: Process

Planning Workshop at Gaya, Chaired by A.D.M. (24 Aug 2015)

- **Inputs/Feedback from participants**
 - Fire prone areas and Road accident prone areas should be included in DDMP.
 - Flash Flood in Dobhi Block should be taken care of in DDMP.
 - Heat wave (Sunstroke) should be dealt in DDMP.
 - Lightening disaster is a major issue which should be included in DDMP.
 - **Children and cattle falling in bore well** should be included in DDMP. At the moment there is no guideline to rescue bore well related accidents/issues.
 - Logistics problem during disaster response should be included in DDMP.
 - No proper response system is present at the moment.
 - **Response Team deployment should be very quick.**

Highlights: Process

Planning Workshop at Gaya, Chaired by A.D.M. (24 Aug 2015)

- **Inputs/Feedback from participants**
 - **A dedicated team only for disaster management should be in the district.**
 - No proper technique to slow down village fire. This should be dealt in DDMP.
 - Non availability of fire brigades at block level.
 - Awareness generation programs (like nukkad nataks etc) should be included in DDMP.
 - Rail accident related response mechanism & capacity building should be included in the DDMP.
 - Village level disaster management teams should be formed.
 - Non availability of even small rescue equipments like fawda, gaiti etc is observed during response.
 - **Health management in village should be included in DDMP.**
 - Non availability or huge scarcity of medicines during disasters is observed.

Highlights: Process

Planning Workshop at Gaya, Chaired by A.D.M. (24 Aug 2015)

- **Inputs/Feedback from participants**
 - 18 to 25 year old persons should be trained for diving & flood relief at village level.
 - Awareness generation on time & relief management in villages during disaster.
 - There should be sufficient number of boats & life jackets at Village/block level.
 - Identification, training & listing of physically robust persons at village level to work for response during disaster.
 - Divers from fishermen community should be given preferences.
 - Proper crowd management plan should be included in DDMP.
 - **Proper evacuation of animals during disaster should be dealt in DDMP.**
 - Villages should have ponds for water harvesting to ensure availability of water during summer/drought phase.
 - **Availability of feeder points at village level for fire brigade to fight fire.**
 - Financial management system for disaster management should be incorporated in DDMP.
 - **Advance fund for disaster response should be provided to every line departments and COs.**

Highlights: Process

Planning Workshop at Gaya, Chaired by A.D.M. (24 Aug 2015)

- **Inputs/Feedback from participants**
 - Good quality lightening arrester use for lightening should be encouraged in villages.
 - **Resource management should be included in DDMP.**
 - **Boats carrying capacity should be mentioned on each boat prominently.**
 - **District disaster response fund should be included in DDMP.**
 - Administrative process during disaster should be efficient and minimized.
 - Response Volunteers awareness, training and their lodging/boarding (care of care givers) should also be taken care of in DDMP.
 - Proper distribution system & policy for distribution of relief materials should be included in DDMP.
 - Proper identification of disaster prone areas should be done.
 - Focus on making separate units for disaster management at each level.
 - **Government officials' capacity building should be taken into consideration.**
 - **There should not be any political interference of any kind during disaster response & relief and system should work as per DDMP.**
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Highlights: Process

Planning Workshop at Jehanabad, Chaired by D.M. (22 Aug 2015)

Questions asked by the D.M. and other participants

- What is zone 3 for earthquake and what may be the damages?
- How Disaster Management could be done at village level without resources in villages?
- **Will you be covering death of cattle due to lightening in DDMP?**
- **What about knowledge management in rural areas?**
- How will DDMP solve problem of non-standard constructions in rural areas?
- **How will villagers come to know that whether a building is earthquake resistant or not?**
- Will you be getting base data from district or from the field?

Highlights: Process

Planning Workshop at Jehanabad, Chaired by D.M. (22 Aug 2015)

- **Inputs/Feedback from D.M. and other participants**
 - Contact details of GRCPL's district coordinator should be provided to all persons to receive proper feedback from them.
 - **There should be a Toll free number for disasters (Disaster Helpline Number).**
 - Crowd management in Barabar Caves and Shiv Temple especially during Sunday & Saturday.
 - Make separate plan for Barabar Shiv Temple.
 - **Local administration is not trained for any disaster response properly.**
 - Kako Block Sun Temple crowd management should be covered in DDMP.
 - Fire in villages mostly occurs due to use of Bamboo sticks for erecting electrical lines.
 - **Remedy from Snake bites should be covered in DDMP.**
 - Drowning cases should be taken care of in DDMP.
 - No proper resource (fund) management at the moment for disasters.
 - Water logging issues in cultivable fields for a long duration.
 - Proper training should be given to mukhiyas so that they could train their subordinates in disaster response & mitigation.

Highlights: Process

Planning Workshop at Jehanabad, Chaired by D.M. (22 Aug 2015)

- **Inputs/Feedback from D.M. and other participants**
 - During such workshop some reading material on disasters management should be distributed to participants.
 - Post and pre disaster mitigation exercises should be done regularly.
 - Vulnerable locations and hazard hotspots should be identified at village level.
 - **Local area representatives should be involved in DDMP process.**
 - Time bound feedback system from ground level should be included in DDMP.
 - Participants and stakeholders should give honest feedback.
 - One to one meeting with stakeholders should be done to get feedback and other data/information.
 - There is huge scarcity of knowledge and funds for managing disasters. DDMP should address this issue.
 - No early warning system is available for disasters.
 - Special emphasis should be given on lightening cases in DDMP (Lakhi Sarai Area)
 - **DDMP should include framework for Mock drill and awareness generation.**
 - Response of line departments is very slow during crises.
 - Water distribution system of Mohrar river should be included in DDMP.

Highlights: Process

Planning Workshop at Jehanabad, Chaired by D.M. (22 Aug 2015)

Inputs/Feedback from D.M. and other participants

- Height and leveling problem in Mohrar River area.
- Loose erection of electricity poles in villages is a major problem.
- Habitation is not at right place.
- Rural electrification should be included in DDMP.
- Transformer maintenance system in DDMP.
- Death due to cold waves should be taken care of in DDMP.
- Loss of crops due to animals like Neelgai should be taken care of in DDMP.
- Tourist management plan should be included in DDMP.
- Water resource management to be included in DDMP.
- Habitation management in DDMP.
- Standard operating procedure should be included in DDMP.
- Base data collection system from village level should be developed & included in DDMP for continuous modification of DDMP as well as future mitigation and response planning.



Activities Undertaken to cover Important Aspects

Activities Undertaken to cover Important Aspects

HRVCA

- Review of literature and secondary data resources to understand the district profile
- Meeting and discussion and with DM, different departments officials (stakeholders) to understand the hazard profile of the district.
- Interaction with community members for repo building and to understand hazard perspective on the ground
- Transect walk with key informants to vulnerable areas
- Structured and informal interviews with key personnel
- Focussed group discussion with different stakeholders
- Participatory rural appraisal for resource mapping
- Preparation of hazard risk assessment matrix based on above activities

Activities Undertaken to cover Important Aspects

HRVCA

- Priority ranking of hazard based on matrix prepared
- Seasonality analysis of each hazard and differentiating it into high, medium and low probability
- Historical analysis of hazard
- Identification of vulnerable areas w.r.t. to each hazard and mapping of elements at risk (human, livestock, environment, agriculture, infrastructure etc.)
- Mapping of vulnerable sites, structures, housing conditions in the area (based on primary and secondary sources of information, census data 2011)
- Mapping of resources available in the district for capacity analysis

Activities Undertaken to cover Important Aspects

Environment & CCA

- Understanding the ecosystem of the district, the extent to which it has degraded, land use and land cover change, its capacity to respond at the onset of natural calamities like drought and flood
- Rainfall and temperature analysis to map the climatic variations
- Literature survey for various ecosystem services
- Groundwater problem

Activities Undertaken to cover Important Aspects

Prevention

- Stakeholder meeting and analysis
- Meeting with different line department
- Sectoral analysis

Preparedness

- Stakeholder analysis at various level –Gram panchayat, Block and district level for understanding the institutional mechanisms present at ground level,
- One to one interaction with line departments to understand the resources available, their plan pre, during and post disaster
- Gap analysis –lack of training and mock drills, trained disaster professionals, DDMC
- Preparing plan to address these gaps

Activities Undertaken to cover Important Aspects

Mitigation

- Sector wise vulnerability reduction measures-irrigation department, revenue department, health, water and sanitation
- Structural and non structural mitigation measures
- Short term and long term measures

Response

- Developing Incident Command System (ICS) for pre, during and post disaster event
- Mapping of NGOs and voluntary organization for search and rescue operation, shelter management etc.
- Developing department wise early warning and dissemination mechanism for pre, during and post disaster
- Standard operating procedure for round the disaster management cycle
- Role of media

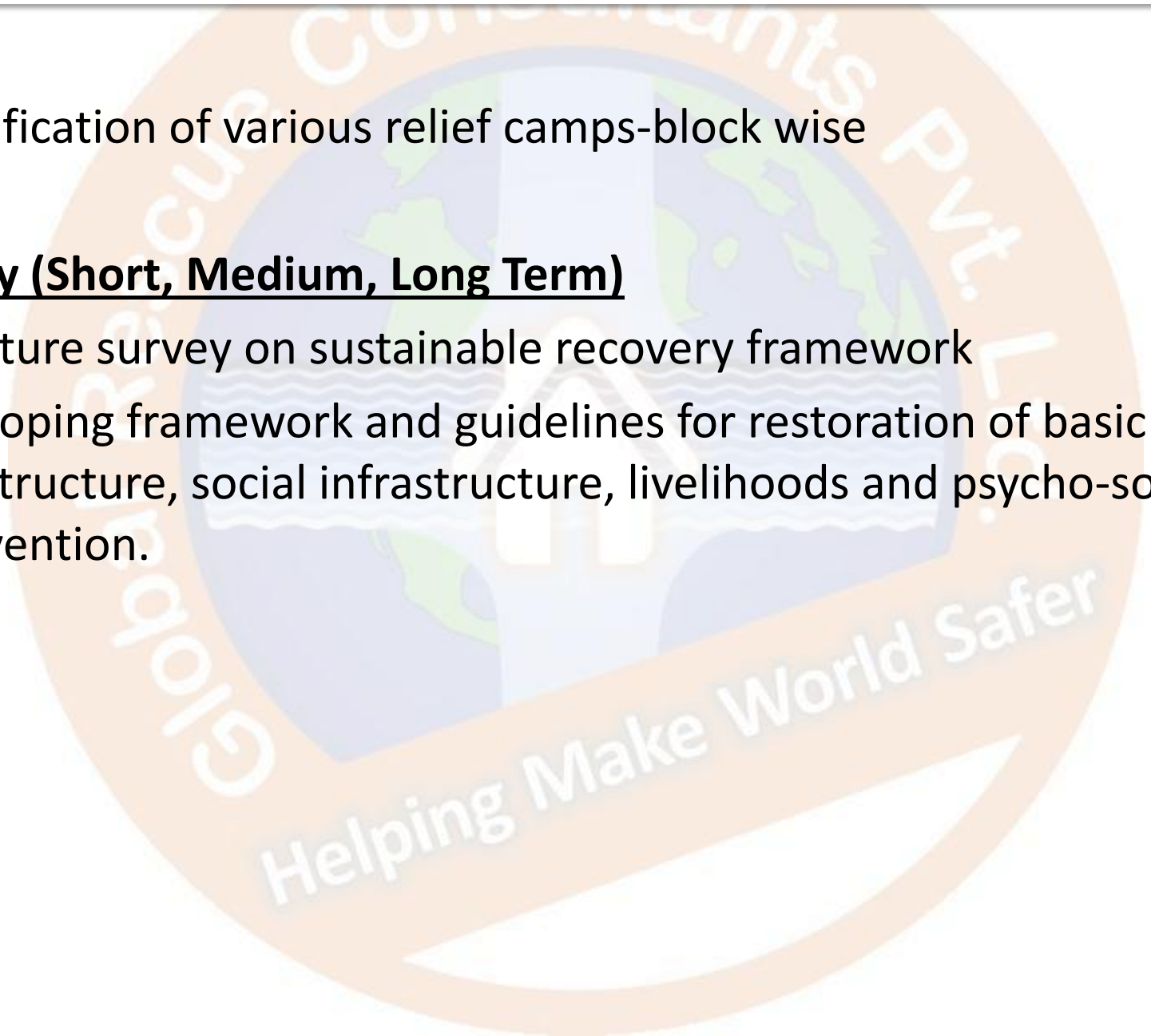
Activities Undertaken to cover Important Aspects

Relief

- Identification of various relief camps-block wise

Recovery (Short, Medium, Long Term)

- Literature survey on sustainable recovery framework
- Developing framework and guidelines for restoration of basic infrastructure, social infrastructure, livelihoods and psycho-social intervention.



Activities Undertaken to cover Important Aspects

Rehabilitation

- Recommendations analysed to avoid making major financial decisions during the early recovery period.
- Studied provisions to provide psychological counselling to help deal with the trauma.
- Points are identified to provide insurance help through any insurance company or govt organisation as most of the peoples are somehow insured via various insurance policies.
- Awareness strategies on creating list of damaged or lost items for insurance or financial assistance purposes.
- Pointed out effects of considering photography of the damage where it occurred and whatsapp it by any people in vulnerable place to get proper rehabilitation

Activities Undertaken to cover Important Aspects

Cross –Cutting Issues

Training & Capacity Building

- Training needs analysis in the district
- Identification of resource person, institutions

Gender

- Women involvement at every stage of planning (gender mainstreaming)
- SHGs, civil society and NGOs role in women empowerment

Highlights: Content

- Multi-Hazard DDMP (HPC List)
 - 2 volumes
- D.M.Act: Definition & Scope
 - Use of 2011 census data
- Use of Latest SECC Report-2011 data
- Strengthen DDMAAs-Framework & executable system/plan for the same
 - Sleek/crisp Response Plan
 - Climate Sensitive

Highlights: Content

- Response plan considering worst case scenario (L1, L2, L3 categorization as per HPC to be considered)
 - Detailed planning for EOC, IDRN.
- Preparedness Plan: Immediate as well as Long Term
 - Gender concern
 - School & Hospital Safety
- Multi-Layer, Multi-Sector and Multi-Hazard
 - Planning for enforcing existing codes
 - Land use planning

Highlights: Content

- Alignment of National Guidelines
- Indigenous knowledge to be used for Response & Mitigation plan
- Animal Disaster Management provision
- Cross Cutting Issues: Gender, Special Needs, Child issues, Training & Capacity Bldg etc
- Effective Review & updation framework and system
- Specific & Time Bound Capacity Building measures

Highlights: Content

- Provision & Approach for Linking Block & panchayat level DM plans with DDMP
 - Historical & Heritage sites safety
 - Crowd Management plan
- Mainstreaming DRR with development plans of district
 - GIS Based Resource Mapping

Issues Highlighted during inception Workshop

Sr	Points Highlighted by Hon'ble VC/BSDMA
1	Multi Hazard will be the key word for the DDMP.
2	DDMP should strengthen DDMA's-Framework & executable system/plan for the same is to be incorporated in the DDMP.
3	Overall framework of DDMP will be as per DM Act-2005 (especially Section 31)
4	Sleek/crisp Response Plan.
5	2 volumes (Vol-1:Preparedness& Mitigation Plan.Vol-2:Response Plan).
6	Commonly used dialect in DDMP
7	HRVC depth to be defined clearly by agencies.
8	Pro-poor Plan
9	Consider Underlying Risk Factors
10	Disaster Definition as per the D.M. Act-2005 to be followed

Issues Highlighted during inception Workshop

Sr	Points Highlighted by Hon'ble VC/BSDMA
11	HPC report's 31 disasters to be considered while making multi-hazard DDMP
12	2011 census data to be used
13	Climate Sensitive DDMP
14	Response plan to be developed considering worst case scenario (L1, L2, L3 categorization as per HPC may be considered)
15	It should have detailed planning for EOC, IDRN.
16	Preparedness Plan: Immediate as well as Long Term
17	Mitigation Plan: Non-structural within the structure and beyond the structure. Structural Mitigation.
18	System for mainstreaming
19	Should also focus on Block & Panchayat level
20	Gender concern to be addressed
21	Communication plan

Issues Highlighted during inception Workshop

Sr	Points Highlighted by Hon'ble VC/BSDMA
22	GIS based mapping
23	DDMP should be Multi-Layer, Multi-Sector and Multi-Hazard
24	Planning for enforcing existing codes
25	Land use planning
26	Defining threshold for each disaster
27	School Safety & Hospital Safety aspect to be dealt in detail
28	Samastipur DDMP may also be referred
29	Alignment of National Guidelines
30	Indigenous knowledge to be used for Response & Mitigation plan
31	DDMP should connect with the people
32	Animal Disaster Management provision in DDMP

Issues Highlighted during inception Workshop

Sr	Points Highlighted by Hon'ble Member/NDMA, Sh. Kamal Kishor
1	Participatory Approach (but keeping in view the rationale as well as the cost factor)
2	Incorporate the lessons/experiences of response, Relief & recovery & reconstruction phases of past major disasters
3	Rationalization of Risk Assessment. What to cover and up to what level?
4	Effective Review & updation framework and system
5	Monitoring of effectiveness of DRR measures
6	Integration of District Development Plans with the DDMP
7	Recovery System Chapter in DDMP should be water tight (most effective and practical by drawing experiences from past disasters)
8	Impact assessment: retrospective as well prospective
9	Trends of risk to be studied
10	Logic of risk reduction: what is to be achieved in a time bound manner (say within next 5 yrs or so; on capacity building)? Questionnaire may be based on these aspects.
11	Consequence of DDMP on adjoining districts/areas
12	Bottoms-up approach: sensible plan based upon ground level facts & gaps
13	Practical ways for DRR planning (Corrective risk reduction as well as prospective risk reduction)

Issues Highlighted during inception Workshop

Sr	Points Highlighted by DG-FS & HG, Sh.P.N.Rai
1	Practical & Executable DDMP
2	IRS based Response Plan
3	Panchayat Representatives to be involved in entire process

Sr	Points Highlighted by Director/NDMA, Sh R.K.Singh
1	In Mitigation planning, capacity building should be the focus area
2	Static part of DDMP may be hard bound and Dynamic Part may be spiral bound for ease of modification/updation
3	Lessons learnt during the entire process and also the usefulness of the DDMP guidelines of the NDMA may be documented and shared with NDMA for future DDMPs



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Inclusion of Environment & Climate Change Related Issues in DDMP

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Issues and findings relating to Environment and CCA

Issues & Findings

- Rainfall data of last 15 years in Jehanabad, Aurangabad & Arwal. In Gaya its for 12 years.
- Temperature data for past years is not available at district level.
- Deforestation in districts Aurangabad (Madanpur & Nabinagar), Gaya (Moahnpur, Wazirganj, Bankey Bazar) and Jehanabad (Makhdumpur).
- Increase in the river catchment area (due to soil erosion) in all four districts which has affected adjacent villages.



**Focus on Religious Gathering, Crowd
Management, Historical Monuments,
Heritage Buildings & Industrial
Establishments**

Focus on Religious Gathering, Historical Monuments, Heritage Buildings & Industrial Establishments

- Prior art search of incidents and mass gathering at Pitra Pakshh Mela, Vishnupad Mandir Gaya, Mahabodhi Temple Bodh Gaya etc.
- Analyzed role of district administration during Melas like Shrawani mela & Chhat melas at various religious places in all four districts like Dev Temple Mela, Kako Sun temple , Barabar Caves Jehanabad, Pret Shila etc.
- Complete evaluation of Barabar Caves temple route in Jehanabad to identify hazard hot spots.
- Shree Cement in Aurangabad (to be studied).



Critical Cross-Cutting Issues

Cross Cutting Issues

Sr	Issue	Status
1	Gender/MISP	Under Study
2	Child Centric issues	Under Study
3	Differently Abled	To be done
4	Issues relating to Livestock	Completed
5	Governance in disaster management	Completed
6	Training & Capacity Building	Under Progress
7	Environment Related issues	Under Progress

The logo for HRVC (Humanitarian Response and Vulnerability Consultants) is a circular emblem. It features a stylized globe in the center with green landmasses and blue oceans. The text "HRVC Consultants Pvt." is written in a white, sans-serif font along the top arc of the circle. The text "Global" is written along the bottom arc. A white banner across the middle of the circle contains the text "Helping Make World Safer" in a white, sans-serif font.

HRVC Analysis Process & Outcome



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Jehanabad

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HRVC Matrix, Jehanabad

SEVERITY					
probability Frequency of Occurrence		4 Catastrophic	3 Critical	2 Marginal	1 Negligible
	5 Frequent	Drought	Flood, Neelgai menace	Hailstorm	
	4 Probable	Stone disease		Snake bites	
	3 Occasional		Earthquake	Fire	
	2 Rare			Lightning, drowning, Electric shock	
	1 Improbable				

Level of risk	Hazard	Major elements at risk	Vulnerable areas
High risk hazard (score 20-15)	Drought	Human, livestock, agriculture, fishery, environment	Entire district
	Stone disease	Human	Entire district
	Flood	Human, livestock, agriculture, fishery, houses, infrastructure, environment	Ratni, Makdumpur, Modanganj
	Nilgai menace	Human, livestock, agriculture, environment	Entire district
Medium risk hazard (score 14-9)	Hailstorm	Homeless population, people living in poor housing conditions, cattle and crops	Kako
	Earthquake	Human, livestock, agriculture, fishery, houses, infrastructure, environment	Entire district
Low risk hazard (Score 8-4)	Snake bite	Human	Block Ratni
	Fire	Human, cattle, agricultural produce, kutcha houses, property,	Ratni, Kako, Makhdumpur, Hulasganj
	Lightening	Human, cattle, agricultural produce, kutcha houses, property,	Ratni
	Electric shock	Human, cattle, agricultural produce, kutcha houses, property,	Ratni, Makdumpur
	drowning	Human	Makdumpur

Gahuan dam, Ratni



Present Condition Of Dam



Baldai River, Pandaul



Kachnama Dam, Makhdumpur



Uderasthan Dam



Uderasthan Dam



Neelgai spotted in the agricultural field



Earthquake Impact Ghoshi Block



Murahara Bridge



Mukhiya Ji on Bridge



End of bridge



Truck Fall & Gathering



Travelling on roof of buses





Road condition in Jam



Steep Railing





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Arwal

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HRVC Matrix, Arwal.

SEVERITY					
probability Frequency of Occurrence		4 Catastrophic	3 Critical	2 Marginal	1 Negligible
	5 Frequent	Drought, Road Accidents, Social Unrest	Flood,		
	4 Probable	Fire	Neelgai menace, Cold wave	Lightning,	
	3 Occasional		Earthquake	Heat wave, Epidemics	
	2 Rare			Electric shock	drowning, Cyclone
	1 Improbable				Cracks in building

Level of risk	Hazard	Major elements at risk	Vulnerable areas
High risk hazard (score 20-15)	Drought	Human, livestock, agriculture, fishery, environment	Entire district
	Social unrest	Human	Entire district
	Flood	Human, livestock, agriculture, fishery, houses, infrastructure, environment	Arwal , Kurtha, Sonbhadra- suryapur Bansi
	Fire	Human, Livestock, Agriculture, environment, infrastructure	Entire district (Specially Karpi and Bansi Block)
Medium risk hazard (score 14-9)	Lightning	Homeless population, people living in poor housing conditions, cattle and crops	Entire district
	Cold wave	Human, Livestock	Entire district
	Earthquake	Human, livestock, agriculture, fishery, houses, infrastructure, environment	Entire district
	Nilgai menace	livestock, agriculture, environment	Entire district
Low risk hazard (Score 8-4)	Heat wave	Human, Livestock	Entire district
	Electric shock	Human, cattle, agricultural produce, kutchha houses, property,	Entire district
	Drowning	Human, Livestock	Arwal, Kurtha and Bansi (specially animals)

‘Madansingh ka tola’ flood affected area and school in the area



Draught afftected area in 'Karpi' block



Flood affected area of sakri panchayat Arwal



Flood affected area of kurtha block



Flood affected area of kurtha block



Situation of houses in the district





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Aurangabad

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HRVC- Matrix, Aurangabad

SEVERITY					
probability Frequency of Occurrence		4 Catastrophic	3 Critical	2 Marginal	1 Negligible
	5 Frequent	Drought, Road Accident	Neelgai Menace		
	4 Probable		Heat waves, Fire, Flood	Snake bites,	
	3 Occasional		Earthquake	Lightening, Cold waves, Hailstorm	
	2 Rare	Electric shock		Drowning, Land mines	
	1 Improbable				

Level of risk	Hazard	Major elements at risk	Vulnerable areas
High risk hazard (score 20-15)	Drought	Human, livestock, agriculture, fishery, environment	Entire district
	Road Accident	Human	
	Nilgai menace	Human, livestock, agriculture, environment	Entire district

Medium risk hazard (score 14-9)	Flood	Human, livestock, agriculture, fishery, houses, infrastructure, environment	Goh, Haspura, Obra
	Electric shock	Human, cattle, agricultural produce, kutchha houses, property,	Kutumba, Dev, Madanpur
	Snake bite	Human	Kutumba, Dev, Madanpur
	Electric shock	Human	Kutumba, Madanpur, Goh
	Fire	Human, cattle, agricultural produce, kutchha houses, property,	Kutumba, Madanpur, Haspura, Rafiganj
	Earthquake	Human, livestock, agriculture, fishery, houses, infrastructure, environment	Entire district

Low risk hazard (Score 8-4)	Hailstorm	Agricultural, Homeless people	Haspura
	Cold waves	Human and livestock	Entire District
	Lightening	Human, cattle, agricultural produce, kutcha houses, property,	Kutumba, Madanpur
	landmines	Human	Rafiganj, Madanpur
	drowning	Human	Dev

Damaged Bridge for Parta Panchayat



House Damaged by High velocity of Wind



Village Road



Earthquake affected house



Aaganwadi on the Adri river bank



Shamshan Ghat near the Aaganwadi



Dev Kund (Dev Surya Mandir)



Road construction (Bhartholi shariff) Aurangabad.



Inderpuri Dam in Barun



Son Canal



Punpun and Adri in Chapri Village



Bridge on Adri River



Wall damaged



Bridge Damaged



Nabinagar:-Goshandhi (Tengo Panchayat)



Drought in Nabinagar





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Gaya

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Hazard Profiling- Preparation of Hazard Risk Matrix and Priority Ranking

Severity					
Probability Frequency of Occurrence		4 Catastrophic	3 Critical	2 Marginal	1 Negligible
	5 Frequent	Drought, Civil Unrest	Fire, Road Accident, Heat Wave, Cold Wave		
	4 Probable		Lightening & Thunderstorm, Biological Disasters and Epidemics, <i>Neelgai</i> Menace, Snake bites, Earthquake, Animal Diseases & Cattle Epidemics, Festival Related Disasters, Serial Bomb Blasts & Terrorist Attack		
	3 Occasional	Hailstorm	Floods, Pest Attacks, Rail Accident	Drowning, Soil Erosion	
	2 Rare		Air Accident, Cyclone	Landslide	
	1 Improbable				

Level of Risk	Hazard	Major Elements at Risk	Vulnerable Areas
High Risk Hazards (Score 20-15)	Drought	Human, Livestock, Agriculture, Fishery, Environment, Livelihood	Entire District
	Civil Unrest	Human, Livestock, Infrastructure	Entire District
	Fire	Human, Livestock, Agriculture, Environment, Livelihood	Entire District mainly Dumaria, Imamganj, Barachatti, Amas, Atri, Mohra, Mohanpur
	Road Accident	Human, Livestock	Entire district mainly in Gaya Town, Bodh Gaya, Amas, Sherghati, Dobhi, Barachatti, Tekari
	Heat Wave	Human, Agriculture, Livestock, Environment	Entire district
	Cold Wave	Human especially homeless Population, People living in Poor Housing Conditions, Cattle and Crops, Environment	Entire district

Level of Risk	Hazard	Major Elements at Risk	Vulnerable Areas
Medium Risk Hazards (Score 14-9)	Lightening & Thunderstorm	Human, Livestock, Agriculture, Environment, Property & Infrastructure	Entire District
	Biological Disasters and Epidemics	Human, Environment	Entire District mainly in Dumariya, Barachatti, Mohanpur, Mohra, Guraru
	<i>Neelgai</i> Menace	Human, Agriculture, Environment	Majorly affected Tekari, Konch, Paraiya, Neem Chak Bathani, Khizar Sarai
	Snake Bites	Human, Livestock	Majorly affected Barachatti, Mohanpur, Fatehpur, Imamganj, Dumaria
	Earthquake	Human, Livestock, Agriculture, Infrastructure, Environment, Livelihood	Entire District
	Hailstorm	Homeless Population, People living in Poor Housing Conditions, Cattle and Crops, Environment	Entire District

Level of Risk	Hazard	Major Elements at Risk	Vulnerable Areas
Medium Risk Hazards (Score 14-9)	Animal Diseases & Cattle Epidemics	Livestock, Livelihood, Environment	Entire District
	Festival Related Disasters	Human	Entire District mainly in Gaya Town, Bodh Gaya
	Serial Bomb Blasts & Terrorist Attacks	Human, Livestock, Infrastructure, Environment	Gaya, Bodh Gaya, Imamganj, Dumaria, Fatehpur, Barachatti
	Floods	Human, Livestock, Agriculture, Environment	Tekari, Paraiya, Sherghati, Dhobi, Imamganj, Mohanpur
	Pest Attacks	Agriculture, Livelihood, Environment	Entire District
	Rail Accidents	Human	Guraru, Paraiya, Nagar, Tankuppa, Fatehpur, Belaganj

Level of Risk	Hazard	Major Elements at Risk	Vulnerable Areas
Low Risk Hazards (Score 8-4)	Drowning	Human	Gaya Town
	Soil Erosion	Environment	Tekari, Paraiya, Sherghati, Mohanpur, Barachatti
	Air Accident	Human, Environment	Gaya Town, Nagar, Bodh Gaya, Sherghati
	Cyclone	Human, Livestock, Agriculture, Environment	Entire District
	Landslides	Human, Infrastructure, Environment	Neem Chak Bathani, Mohra, Banke Bazar

Water-Logged Area



Drainage System



Water Logged Area



Status of Solid Waste Management



Fluoride Affected Village



Fluoride Affected



Condition of the Houses



Status of Bridge



Improper Traffic System



Road Connectivity to Dumaria Block



Drainage Water Flowing into *Payin*



Present Status of *Payin*



Water Logged Area in Ward 50 (Manpur)



Status of Pole due to Accident



Status of Bridge on NH-2



Status of Nagar Nigam Building



Crowd during *Pitra Pakshh*



Crowd during *Pitra Pakshh*



Water Source in distant Fields



Availability of Water through Tanker



Carrying of Water to their Houses



PRA Exercise in *Pahadpur* Village



Road Connectivity in Remote Area



Connectivity to the Last Miles



Accessibility to Water



Thankyou!

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