



## ***Multi-Hazard District Disaster Management Plan (DDMP)***

### ***Review & Consultation Workshop***

*Showcasing the progress made in Madhubani, Darbhanga, Samastipur and Nawada*

*6-7 Jan, 2016*

*Hotel Maurya, Patna*

***Facilitating agency***

**CDDMASS – A Strategy Center**

**(Center for Development and Disaster Management Support Services), Gurgaon**



# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

# Agenda

## ▶ **Brief from Inception report and workshop**

- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- **Key highlights from Inception report and workshop:**
  - Sharing of project background
  - District profiles (brief profiles of all 4 districts together in one report)
  - Disaster profiles of districts
  - Case studies (highlighting importance and need of planning)
  - Our understanding of Madhubani DDMP
  - Scope of work and deliverables
  - Approach and methodology
  - Outlines of 2 volumes of the proposed plan
  - Project team details
  - Work plan and Timeline
  - Review and monitoring plan
  - Assumptions, risks and dependencies

- **Improvements in Inception reports based on feedbacks received**
  - Common inception report for 4 districts → converted to individual inception reports for 4 districts (on the template provided by BSDMA)
  - Proposed value additions in the DDMPs were incorporated in inception reports, i.e.
    - Financial management plan
    - Action oriented plan at district, block and panchayat level
    - Monitoring plan at district and state level
    - DIA/DRA (Disaster Impact Assessment/Disaster Risk Assessment) to the extent possible
    - Study and planning for school safety, hospital safety and industry safety
    - *Designing Process/ SOPs/ Protocols for district, block and panchayat level*
    - *Designing process to mainstream DRR and CCA*
  - References to data sources advised by BSDMA
    - Bihar infrastructure mapping, NRSC, BMTPC Atlas, Iso-Seismil maps, Survey of India, FMIS, Inundation maps etc.

- **Based on the inputs, CDDMASS is putting efforts to include the following:**
  - Worst case scenario based planning
  - Follow guidelines issued by NDMA and BSDMA for management of different disasters.
  - Analysis of actions which leads to prevention of disasters
  - Approach for building community resilience will be articulated in the DDMPs.
  - Plan for post disaster Livelihood restoration and other main streaming elements
  - Prepositioning of resources for effective response will be mentioned while discussing the IDRN as highlighted by BSDMA
  - Crowd management during different *Melas* and festivals etc.
  - Addition of School safety, Hospital Preparedness and Industry preparedness (these are important components but were not part of Madhubani DDMP)
  - Safety for animals in disaster management
  - Study of safety aspects of historical heritage sites and DM plan for its preservation

# Agenda

- ▶ Brief from Inception report and workshop

- ▶ **Highlights from Stakeholders' consultation**

- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- **District level stakeholders consultation in Nawada (31<sup>st</sup> October, 2015)**
  - Chaired by DM Shri. Manoj Kumar
  - Attended by over 60 participants from different departments and stakeholders (department representatives, BDOs, COs, NGO representatives etc.)
  - Key issues highlighted by participants:
    - Flood like condition develops in Kokla sometimes in monsoon season due to heavy rains
    - Flash floods due to excessive rains in short period
    - Water logging - and sometimes people die due to ignorance and over confidence
    - Lightening – cases of deaths recorded
    - Accidents are common
    - Attack of wild animals (crops and human as well)
    - Rajauli block – children are disabled due to water related diseases
    - High tension wire
    - Crowd management during festivals and Mela etc.



- **District level stakeholders consultation in Samastipur (3<sup>rd</sup> November, 2015)**
  - Chaired by DM Shri. Pranav Kumar
  - Attended by over 80 participants from different departments and stakeholders (department representatives, BDOs, COs, NGO representatives etc.)
  - Key issues highlighted by participants:
    - Hospital preparedness for management of mass casualties
    - Use of IT and technology for quick updation, easy query of information
    - 3 major rivers – Baghmati/Kareh, Kosi and Ganga
    - Most area water logged for 3-4 months
    - Cyclonic winds
    - 2 fault lines (high probability of earthquakes)
    - Roads blocking the natural flow of water
    - Mapping of local level preparedness
    - Climate change – nature and intensity of disasters are changing
    - Effective forecasting and communication
    - Road accidents – mapping of nearest hospitals



# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation

- ▶ **Issues discussed with key stakeholders**

- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- Consultations done with key departments and stakeholders and is still ongoing to get their opinion and benefit from their learning & experiences of previous disaster responses.
- Discussion on gathering of relevant data from different dept., and their positive support received.
- Meetings with officials in Nawada, Samastipur, Darbhanga and Madhubani highlighted the need for concerted efforts to prevent man-made disasters as well which often happen due to negligence (viz. road safety awareness, fire safety, disease control with appropriate hygiene practices etc.)

- Nawada district:
  - Health dept. → advice for formation of task force/group on medical/health response in emergencies.
  - Revenue dept. → requested for hazard specific maps representing vulnerable areas and population
- Samastipur:
  - DPRO → focus on village level awareness campaigns for communities on different disasters, and their prevention, preparedness, risk reduction, mitigation and management etc.
  - Police dept. → some technological tool to help trace the location of the areas affected by disaster or some incidence.
  - NGO (Bal Kalyan) → advised on road safety (technological solutions should be explored to prevent accidents due to foggy weather and sharp bends & blind curves etc.)
- Madhubani:
  - SDC (DDM section) and Apda clerk → risk of flooding in Kosi river due to artificial lakes in Nepal
  - Displacement of people due to landslides and erosion etc.
- Darbhanga:
  - ADM disaster and SDC → Exhaustive flood management plan is available as the district faces regular floods

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders

## ▶ **HRVCA updates and findings**

- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- **HRVCA process was conducted in 20 sample villages in 4 districts**
- Helped in developing understanding of key hazards, vulnerabilities, challenges, (non) availability of resources, local practices to cope with disasters etc.
- Understanding of experiences of previous disasters and issues such as HFL, erosion, water-logging, interrupted accessibility, EQ intensity and impact, Fire incident history, road accidents, storms, lightening, cold/heat waves, wild animal attacks, disease outbreaks, migration etc.
- The villages were identified in consultation with the nodal officer at the district, officials of DDMA/disaster management department, Apda in-charge etc., as well as local agencies working on disaster management were consulted.
- Process followed: PRA exercises, participatory approach.
- **Village HRVCA map** with identification of hazard/risk areas, vulnerabilities, and capacities/resources were prepared.
- **Seasonality analysis**

## Nawada district



**Block: Kauwakol, G.P. – Lalpur,  
Village – Badarwatari**

1. Accessibility blocked during monsoon season (river Nati)
2. Attack of wild animals
3. Diseases: Malaria, typhoid, cholera, diarrhea



**Block: Kashichak, G.P. – Khakhari,  
Village – Nayadeeh**

1. Fire incident (April, 2013)
2. Flood & waterlogging (threat from the Aahar of Dedhgaon village)
3. Diseases: Diarrhea, malaria, typhoid

**Block: Roh, G.P. – Chhanaun,  
Village – Painpura**

1. Flood due to canal and aahar
2. Accessibility
3. Diseases: Malaria, typhoid, cholera, diarrhea
4. Fire incident



# SAMASTIPUR DISTRICT

## Block: Singhia, G.P. – Kundal-2, Village – Nimi



### GPS location of village Nimi

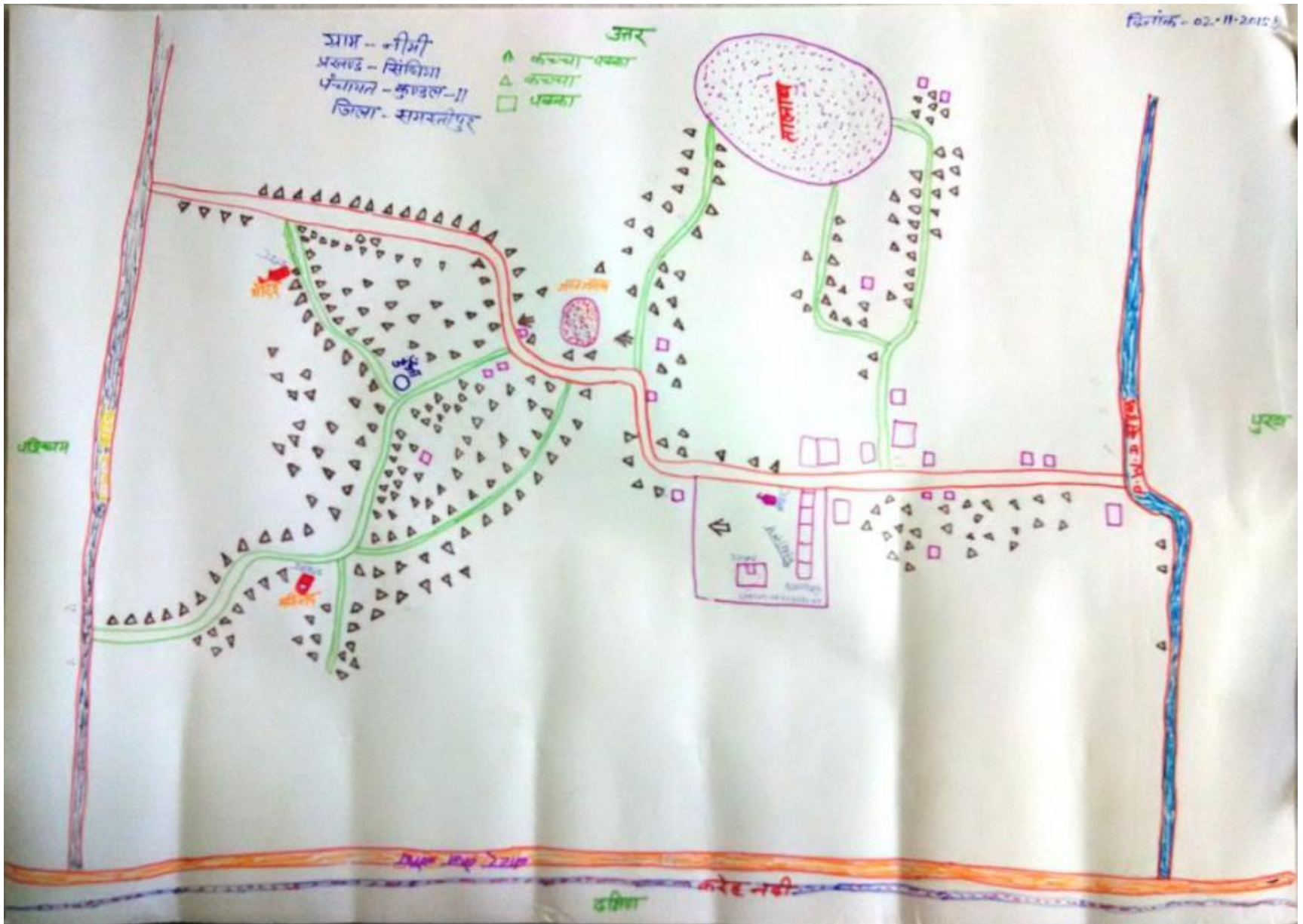
Lat. = 25.786854

Long. = 86.206667

### Key findings

1. Flood prone (next to Kareh river)
2. Major floods in 1987, 2004, 2008
3. Water logging next to embankment
4. Hailstorm in 2015
5. Seismic zone IV (EQ in 1988)
6. Agriculture land inundated during monsoon (June-Aug/Sept)
7. Migration and daily wage labour (60% HH)
8. Kaccha houses – 516 HH
9. 95% houses use firewood for fuel

# HRVCA map of village – Nimi



# SAMASTIPUR DISTRICT

## Block: Hasanpur, G.P. – Bhatwan, Village – Sirsia



### GPS location of village Sirsia

Lat. = 25.772057

Long. = 86.234902

### Key hazards and vulnerabilities

1. Flood prone (inside the embankment) – rivers Kosi and Kareh/Bagmati
2. Floods in every monsoon (embankment not completed (Western embankment of river Kosi to meet the Waterways embankment)
3. Most population lives b/w river and embankment (all SC, and labours), and few on the embankment (EBC) in thatched houses
4. Agriculture land inundated during monsoon (June-Aug/Sept)
5. Migration and daily wage labour (50% HH)
6. Kaccha houses – 790 HH (100% HH use firewood for cooking)
7. Fire in June 2015, more than 40 houses affected

## HRVCA map of village – Sirsia



# SAMASTIPUR DISTRICT

## Block: Kalyanpur, G.P. – Kalaunjar, Village – Gangaura



**HRVCA and PRA is carried on at Gangoura Village**



**Enbankment erosion and River changing its way at Gangoura Village**

### **Key hazards and vulnerabilities**

1. Erosion of the embankment and the village land
2. Bagmati river changing its course year by year
3. Fire hazards (90% houses are thatched houses)
4. Accessibility disturbed during monsoon
5. Diseases – Malaria, Typhoid, Diarrhea etc. (WASH issues)

**DARBHANGA DISTRICT**  
**Block: Tardih, G.P. – Thengha, Village – Thengha**



**DARBHANGA DISTRICT**  
**Block: Tardih, G.P. – Thengha, Village – Thengha**



*Community engaged in developing maps*



*Poor & weak hutments in the village*



*Low land and flooded / water logged area*



*Women took active participation in the discussion*



*Issues of women, girls and children were consulted.*

# MADHUBANI DISTRICT

Block: Madhepur, G.P. – Tardiha, Village – Aathvigha Mushahari (Tola)



## MADHUBANI DISTRICT

Block: Madhepur, G.P. – Tardiha, Village – Aathvigha Mushahari (Tola)



*Community engaged in developing village map on the ground*



*Active engagement of community members, specially women, children, youth and elderly*



*Series of thatched/katcha houses, increasing vulnerability towards floods, fire, storm etc.*



## MADHUBANI DISTRICT

Block: Madhepur, G.P. – Mahasingh Hasouli, Village – Behera



*Chachree (wooden bridge) to go  
Maha Dalit Tola*



*Active participation of community  
members*



*Water logged area in the village*

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ **Issues and findings related to various phases of DM Cycle**
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

DM Phases	Issues and findings
<b>Prevention</b>	<ul style="list-style-type: none"> <li>• Prevention measures highly useful in few hazards such as fire, disease outbreak (vill Nayadih – Nawada, Athvigha Mushhari tola – Madhubani etc.)</li> <li>• Awareness and IEC can play a significant role in prevention of such hazards.</li> </ul>
<b>Preparedness</b>	<ul style="list-style-type: none"> <li>• Preparedness important for floods, earthquake, storms, heat &amp; cold wave, and others such hazards.</li> <li>• Existing plans have some preparedness measures, further improvements are being done in current plans.</li> </ul>
<b>Mitigation</b>	<ul style="list-style-type: none"> <li>• Little awareness on mitigation, its importance, cost-effectiveness etc. Nawada doesn't even have any DMP, and there is no sincere awareness on disaster itself.</li> <li>• Structural mitigation and retrofitting as well as non-structural (risk transfer, CB, policy environment, alternative/resilience livelihood) are important and being considered in the plan.</li> </ul>
<b>Risk reduction</b>	<ul style="list-style-type: none"> <li>• Risk reduction starts after appreciation of risk which is very important for the intervention districts. For example: very few people in Nawada district share and appreciate about any hazard or risk present in the district, whereas Madhubani, Darbhanga, Samastipur have more focus on flood and to some extent on drought.</li> </ul>

DM Phases	Issues and findings
<b>Risk reduction</b>	<ul style="list-style-type: none"> <li>Measures of DRR are considered and being incorporated in the DDMPs, with a more concerted effort for its mainstreaming in the development programs and ongoing schemes in the districts.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>Officials consulted for their prior experiences in disaster response and management to understand successful measures and areas of improvements or challenges.</li> </ul>
<b>Relief</b>	<ul style="list-style-type: none"> <li>Learnings and case stories from different places, both within Bihar, within India and also from neighbouring countries are studied to understand what measures are successful and what could be improved and adapted.</li> </ul>
<b>Recovery</b>	
<b>Rehabilitation</b>	

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle

## ▶ **Environment and CCA**

- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- Impact of climate change is being felt due to changes in climate variability and weather extremes.
- Extreme events i.e. heat waves, cold waves, more intense floods, more droughts, more intense cyclones and flash floods are on increase.
- Climate change is impacting the natural ecosystems and is expected to have substantial adverse effects in India, mainly on agriculture on which 58 per cent of the population still depends for livelihood
- The food security, water security and environmental degradation are key challenges being posed by climate change.
- HH level, village level, Panchayat level, District/Sub District level CCA action plan

- **Efforts being considered in DDMP development in terms of environment and CCA:**
  - More efficient weather forecasting, and its timely reach to communities (installation of localized automated weather stations?)
  - Crop diversification, improved crop cycle, more efficient water use, and improved soil management practices, together with the development of flood & drought-resistant crops can help reduce some of the negative impacts.
  - Promotion of alternative livelihood opportunities, skill development, entrepreneurship development
  - Taking initiatives to reduce dependency on environment, water etc. for livelihood
  - Generating local livelihood opportunities to curb migration
  - Suitable building codes and adherence to same
  - Incentivize efficient use of ground water resources
  - Improvements in irrigation systems, water harvesting techniques, and more-efficient agricultural water management
  - Regional cooperation on water issues

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA

## ▶ **Cross-cutting issues**

- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- Participation of women, elderly, children, P/CWDs was encouraged during community consultations
  - Gender inequity and low decision making capacity in economic issues and household expenditure etc. was observed in many villages. Women contribute more in labour/agriculture work, but their efforts not appreciated and rewarded appropriately.
  - Non-consideration of women's work hours in daily household chores
  - Facilities are not friendly to P/CWDs. This may be considered in all new constructions and efforts may be taken to integrate measures for inclusiveness in older / existing facilities.
  - Capacity building at all levels and in different themes should be taken up. Examples include awareness and education, policies techno-legal systems and practices, training, capacity development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk with related impacts.

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues

## ▶ **Innovations and good practices**

- ▶ Issues related to ToR
- ▶ Proposed activities and timeline

- Innovations / value additions in the DDMPs
  - Financial management plan
  - DIA (Disaster Impact Assessment) to the extent possible
  - Designing Process/ SOPs/ Protocols for district, block and panchayat level
  - Designing process to mainstream DRR and CCA
  - Periodic simulation of Village level Early Warning dissemination and disaster response to be proposed as an agenda for the PRI/Gram Sabhas
  - Analysis from learning's and success stories from past disaster management/response programs of different govt. and organizations (in other districts, states, national level and regional level)

# • Data sources

a. Bihar Infrastructure (roads, hospitals, rivers, education institutions etc.) Mapping –  
(Source: <http://gis.bih.nic.in/>. Designed and developed by NIC Bihar State Centre, Patna).

## **Available without login:**

- District wise maps: Roads, rivers, rail, assembly, blocks, polling stations, details of assembly constitutions
- Details of rural roads at block level and district level
- Info about blocks, panchayats etc in each district
- Info about schools:
  1. Institute Type wise Number of Schools in all districts
  2. Social Category Wise Students Percentage
  3. Social Categories wise Students Count
  4. Gender Wise Students Percentage
  5. Gender wise Students Count
  6. Boundary Walls In Schools
- GIS based maps of
  - Roads, water resources (rivers, canals, streams), power transmission lines, forests, transport services (Airpots, NH, SH, railway tracks), health services

**(GIS maps: if we can get images/ PDF version, it would be really value adding for the report)**

- Data sources

District Wise Flood Hazard Map –  
(Source:<http://www.nrsc.gov.in>, National Remote Sensing Centre (NRSC)/Bhuvan, ISRO, Hyderabad.)

- Satellite based images, real time river data and analysis, **login required**, international disaster case studies images available

**requires login to**

**[http://www.bhuvan.nrsc.gov.in/bhuvan\\_links.php#](http://www.bhuvan.nrsc.gov.in/bhuvan_links.php#)**

annual flood layers upto 2010 (- <http://bhuvan-noeda.nrsc.gov.in/gis/thematic/index.php>)

**Need to arrange**

- Data sources

Vulnerability Atlas of India, Building Materials and Technology Promotion Council(BMTPC) ( <a href="http://www.bmtpc.org/">http://www.bmtpc.org/</a> )	Construction technology, codes related information <b>on login/ on demand</b> <b>Need to arrange</b>
Table of block wise Seismic Risk (Source: Bihar State Disaster Management Authority: publication : Hypothetical Occurrence of 1934 Earthquake Intensity,)	Report downloaded, block wise risk available for Darbhanga & Madhubani in table form
Survey of India Maps ( <a href="http://www.surveyofindia.gov.in/">http://www.surveyofindia.gov.in/</a> )	Available for download/ purchase, to dig relevant maps with team
Maps from Flood Management Information System(FMIS), ( <a href="http://fmis.bih.nic.in/">http://fmis.bih.nic.in/</a> ), Water Resources Department, Govt. of Bihar. (to be coordinated by Shri A. K Samiyar, Sr.Technical Advisor, BSDMA)	Available: Very good source for DM planning for floods, prediction etc  Some initial maps downloaded and incorporated in the report as per the context.

- Data sources

Ground Water Map of Districts. (It is available on the Public Health and Engineering Department Website, Govt. of Bihar)	State level downloaded, district level yet to locate, table showing affected blocks available and downloaded ( <a href="http://phed.bih.nic.in">http://phed.bih.nic.in</a> )
Map of the water logged areas of districts	Not found yet

*\*\* In few of the data sources, support from BSDMA is requested for authorization or facilitation.*

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ **Issues related to ToR**
- ▶ Proposed activities and timeline

- Extension of project period by minimum of two/three months (to compensate loss of time due to elections)
- Service Tax has been revised to 14.5% thus further enhancing the cost disadvantage to the agencies associated with the project. This being a Statutory Payment, a view may be taken by BSDMA to pay this to the parties who in turn are paying it to the government
- Cost of field activities (lodging, boarding and local travel within the districts of the field personnel of the agencies) may be borne by the concerned district administration (from the fund transferred by BSDMA to the districts)
- Technology application (open source software for continuous updating of data/information, Google earth mapping, mobile application etc.) may be explored for feasibility and practicability and should be given due consideration in furtherance of this project.
- DRR plan and Response plan for different stakeholders → separate or together? Clarification needed

# Agenda

- ▶ Brief from Inception report and workshop
- ▶ Highlights from Stakeholders' consultation
- ▶ Issues discussed with key stakeholders
- ▶ HRVCA updates and findings
- ▶ Issues and findings related to various phases of DM Cycle
- ▶ Environment and CCA
- ▶ Cross-cutting issues
- ▶ Innovations and good practices
- ▶ Issues related to ToR
- ▶ **Proposed activities and timeline**

- **Key activities to be undertaken in next 2/3 months:**
  - Analysis of HRVCA data
  - Consultations with stakeholders jointly (at district level) as well as separately with different departments
  - Drafting of DDMPs
  - Consultation on draft DDMP
  - Improvisation in the DDMPs based on inputs received from DDMA and BSDMA
  - Submission of final documents

***Thanks for your patient hearing***

Questions  
and  
interactions