



Health & Family Welfare Department  
Government of Gujarat



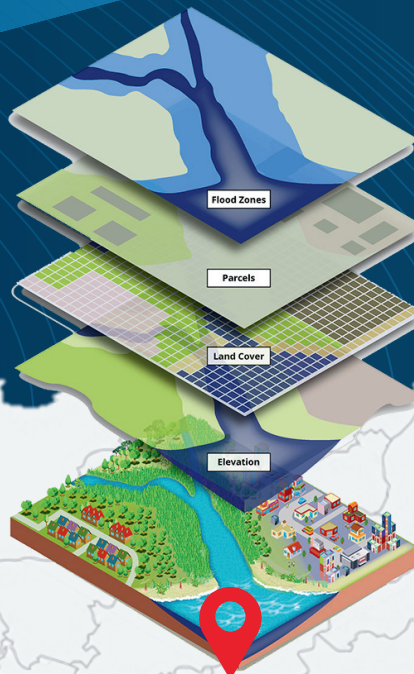
World Health  
Organization  
India



**GUJARAT**  
Gujarat Advanced Risk Assessment Tool

# GUJARAT Advanced Risk Assessment Tool

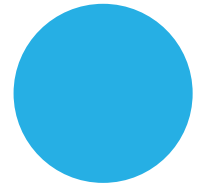
## Process Document





# GUJARAT

Gujarat Advanced Risk Assessment Tool



## BACKGROUND

### Core Modules



#### Hazard Map:

Digital vulnerability mapping and risk assessment tool



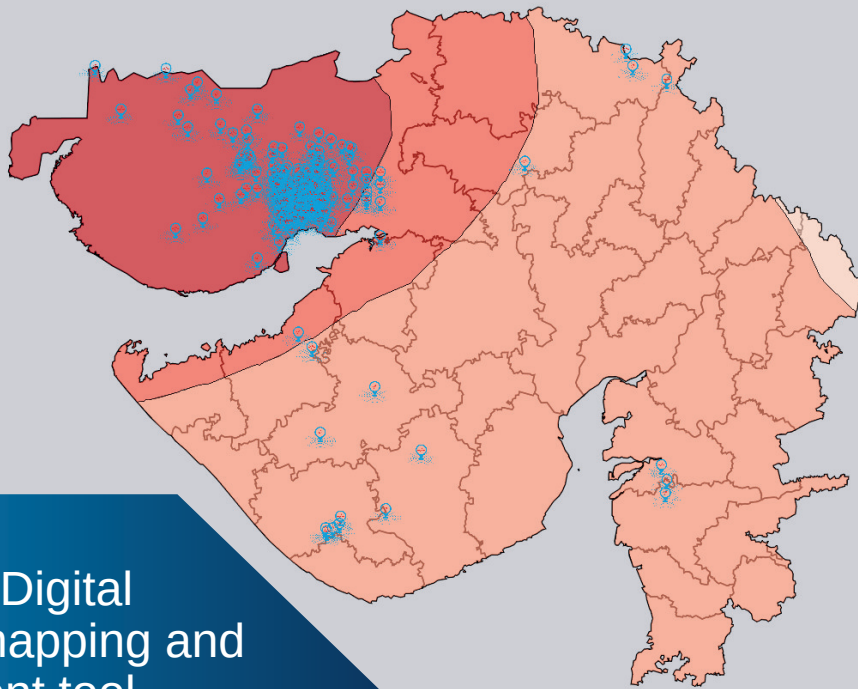
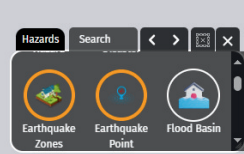
#### Digital Hospital Disaster Risk Management Plan Generator



#### Health Emergency Alert for Response

Disasters and emergencies cause significant challenges worldwide. Their increasing frequency and intensity due to various factors like climate change, urbanization and population growth necessitates to have a comprehensive approach to disaster and emergency management emphasizing on an all-hazard approach. Historically focus has been on response and recovery but there's a growing recognition of the need for prevention and preparedness. The GUJARAT Advanced Risk Assessment Tool, developed by WHO India in collaboration with GIDM and Department of health, Gujarat, addresses these needs by providing an integrated digital ecosystem for managing all phases of emergencies. The tool is grounded in standard risk assessment methodologies, such as the STAR framework and the Rapid Risk Assessment of Acute Public Health Events, ensuring a standardized and systematic approach to disaster/health emergency management. The tool is tailored specifically for Gujarat, a region susceptible to multiple hazards, and aims to streamline disaster management through advanced technology and data integration, emphasizing prevention, preparedness, mitigation, and recovery.

The GUJARAT Advanced Risk Assessment Tool comprises of three core modules: the Hazard Map, the Digital Disaster Management Plan Developer, and the Health Emergency Alert and Response (HEAR). Each module addresses specific aspects of disaster management, collectively forming a digital ecosystem that supports comprehensive disaster and emergency management.



**Earthquake Zone**

- Zone V
- Zone IV
- Zone III
- Zone II

**Earthquake Points**

Earthquake points calculated Based on the seismic moment of the earthquake, which is equal to the average amount of displacement on the fault times the fault area that slipped

# Module 1

## Hazard Map: Digital vulnerability mapping and risk assessment tool

**Purpose:** To assist in advanced spatial analysis and visualization of risk posed by multiple hazards and their interactions across Gujarat. It facilitates vulnerability mapping and risk assessment, thus offering a comprehensive view of the potential threats in the region.

**Description:** It supports multi-hazard analysis by overlaying various hazard layers. The tool offers multiple attribute layers, such as point of entries, factories MAH, tribal areas, etc. thus helping users assess the potential impacts of different hazards comprehensively. Key features include interactive map controls, different base layers of maps, etc. Few of the key features are enumerated below:

## Key features



### Map view

The platform provides 6 types of base layers such as street view, satellite view, open street view, traffic view, white and grey. All these layers are live map layers which forms foundation of the tool allowing user users to select the most appropriate view for their analysis.



### Hazard list


Gujarat's geographic and climatic conditions expose it to a range of hazards including earthquake, flood, drought, cyclone and heatwave. The state is also vulnerable to tsunami due to its long coastline and probability of occurrence of near and offshore submarine earthquakes in the Arabian Sea. Apart from these the state is also prone to other hazards like nuclear, radiological, chemical, fire incidents, lightning, etc. The tool includes a comprehensive list of these hazards (refer annexure 1), mapping five major hazards and eight other attributes/resources, such as airports, seaports, NDRF battalions, fire stations, hospitals with disaster management plans, nuclear power plants, thermal power plants, poison centers, tribal areas, and MAH factory density. Each layer includes a legend for easy interpretation, which can be toggled on or off as needed.




### Interactive Map Controls

These are accessible via the dashboard on the right extreme by clicking on the 3 dots. The interactive map controls enables users to have easy access to tools like recenter, full screen, zoom in and out, find my location, panning, area and distance measurement tool and navigation tool. Users can also export map analytics in various formats (PNG, JPG, PDF, SVG), facilitating the sharing and analysis of data. For detailed process refer annexure 2.

Type of Hospital



Government Hospital



Private hospital

Category



Sub Health Center



Primary Health Center



Community Health Center



Sub-District Hospital



District Hospital



Medical College Hospital



Urban Health Center

Next

# Module 2

## Digital Hospital Disaster Risk Management Plan Generator

**Purpose:** This module provides a comprehensive tool for healthcare professionals to develop hospital disaster risk management plans. It is designed to help hospitals prepare for and respond to emergencies from various hazards, ensuring they can maintain operations and care continuity during disaster/ emergencies.

**Description:** Grounded in WHO's SAFE hospital initiative, this module helps user to develop hospital disaster risk management plan tailored to their specific need. The plan varies as per the capacity of the healthcare facilities. Overall, this module is a step towards ensuring the structural, non-structural, and functional efficacy of hospitals which further enhances service quality and ensures continuity during emergency/ disasters. It includes six main sections:



# Key features

## Creating Risk Matrix



This feature is designed to systematically assess, and document risks associated with various hazards that a hospital might face. By identifying the likelihood and impact of different hazards, this module helps in creating a comprehensive risk profile for the hospital. It allows users to input details about potential hazards based on the hospital's historical exposure to such risks. Users can select hazards from a predefined list, determine the likelihood and impact of each hazard, and generate a risk matrix. This process helps in visualizing and prioritizing risks, enabling informed decision-making for risk mitigation.

The tool provides a centralized repository for managing statutory documents. The users can upload relevant documents, track compliance deadlines, and receive notifications for renewals, ensuring adherence to regulatory requirements.

## Documentation of regulatory compliances



## Auto HIRS Organogram



This feature helps in establishing a functional HIRS for efficient hospital operation during emergencies. It includes an inbuilt template for documenting the HIRS structure, adaptable to any organization. It defines the chain of command and clear areas of work for each designated person, making the emergency response process more defined.

This was developed from the experience that people often struggle to understand their roles during emergencies. It helps in defining the roles and responsibilities of each individual within the department or the HIRS, and the roles of departments within the organization during an emergency. It automatically creates job cards that serve as quick references for individuals and departments, ensuring everyone knows their roles and responsibilities at the time of emergency.

## Roles and Responsibilities



## Training/ Mockdrill calendar preparation



This feature allows for creation of annual training/ mockdrill calendar by feeding in the details of training topic, co-ordinator name, number and planned date as per consensus achieved in the committee. The hospital can follow this calendar to conduct trainings at regular intervals as planned as it will help to build the capacity of the staff and their capabilities to deal with response during emergencies. The system can also notify staff of district, state, or national-level drills and exercises.

This feature is to ensure completeness and accuracy of the HDRM plans. The tool involves 2 levels of checks to ensure completeness of the HDRM plans. The first level involves ensuring that all necessary details are filled in each section, preventing users from skipping important information. The second level involves a review and approval process by the relevant authority, ensuring that the data entered is complete and accurate. The user gets notified through their official mail id for approval/ rejection of plans and further action to be taken. This overall helps in ensuring authenticity of the data entered.

## Approval Mechanisms



Disaster

Notification for Disaster		Notification for Regulatory Compliance		Notification for Mockdrills	
Select	UID/NIN ID	Contact Detail	Hospital name	District	Village/Town/City
<input type="checkbox"/>	NA	0221-3471001/01	PDU Govt. Medical College & Hospital	Rajkot	Rajkot
<input type="checkbox"/>	887236	022121001/01	More hospital	No Data	Delhi Cantonment,
<input type="checkbox"/>	123	078442001/	surat vcare testing	Surat	surat
<input type="checkbox"/>	00000	025450785/	Government PHC	Surat	No Data
<input type="checkbox"/>	0000	078442001/	Private Single Speciality Hospital	No Data	No Data
<input type="checkbox"/>	1153691	08812001/01	PHC_UPHC	Bhavnagar	Vasant Kunj
<input type="checkbox"/>	24654621	08812001/01	RKG hospital	No Data	dfa
<input type="checkbox"/>	00000000	078442001/	Vcare Hospital	No Data	No Data
<input type="checkbox"/>	00000000	078442001/	Vcare Hospital	No Data	No Data
<input type="checkbox"/>	00000000	078442001/	SHC_HWC	No Data	No Data
<input type="checkbox"/>	00000000	078442001/	District Hospital	Surat	Katargam

# Module 3

## Health Emergency Alert for Response

**Purpose:** The HEAR module provides early warnings and notifications, enabling swift and coordinated responses to emergencies or disasters

**Description:** This module is designed to send alerts and notifications for various kinds of disaster/ emergency, regulatory compliance, and mock drills. It is managed by the admin ensuring centralized control and coordination and sending timely alerts to relevant users. These alerts facilitate quick mobilization of resource and organized response at the time of emergencies, thus minimizing the overall impact.



Notification for disasters/ Emergencies



Notification for regulatory compliances



Notification for mock drills

### Summary

Overall, the Gujarat advanced risk assessment tool not only helps in assessing risks but also helps in preparing for and mitigating the risks through preparation of detailed HDRM plans. These plans are crucial ensuring efficient response and recovery. Furthermore, the HEAR module enhances the early warning mechanism for swift and coordinated response at the time of emergencies. Leveraging the advanced technology and comprehensive planning capabilities, this tool serves as a critical resource for managing disasters and emergencies, ultimately contributing to a safer and more resilient state.

# Annexures

## Annexure 1 : Hazard map navigations

**Map View toggle**

**Hazard list**

**Map base layers: street view, satellite view, traffic view, open street view, white and grey (from top to bottom)**

**Information: sources of data, methodology and process document**

**North arrow**

**web-based map interface**

**Legend**

**Distance measuring tool**

**Hazard list toggle**

**Area measuring tool**

**Toggle header**

**Recentre**

**Full screen**

**Zoom in**

**Zoom out**

**Reset bearing to north**

**Current location**

**Print/ export**

**Additional tools**

**Navigation tool**

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**search bar for hazard/ attribute**

**Previous/ next layer**

**Deselect all**

**Close**

**Scroll**

**Export map**

**Hazards/ Attributes**

**Page Size** A4

**Page Orientation** Landscape

**Format** JPEG

**DPI** 96

**Generate**