

District Disaster Management Plan of Sheohar District

Part III: Disaster Risk Reduction Plan

Prepared by:

District Administration, Sheohar
State Disaster Management Authority, Bihar

With the support from:

All India Disaster Mitigation Institute

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1. Disaster Risk Reduction Plan

The Disaster Risk Reduction Plan (DRR) of Sheohar is comprised of activities and measures that, if performed, support the district towards reducing the risks of disasters including those associated to changes in the weather pattern – or, in other words, climate-induced hazards. This plan was prepared based on consultations conducted with key line departments and on field assessment performed in vulnerable villages; thus the recommendations herein presented were built upon the gaps observed in the process of disaster management in Sheohar. Additionally, the plan also lists major developmental programmes and schemes that can be seized up for DRR and disaster recovery within the district. The DRR Plan is related to a long-term strategy as it links disaster management with development and requires the involvement of multiple stakeholders for its effectiveness.

2. DRR recommendations

The Gap Analysis presented in the HVCA reveals the main bottlenecks within the district when it comes to disaster risk reduction. The recommendations presented below were mainly developed based on the results of the gap analysis.

- 1) District Emergency Operation Centre (DEOC) is not available in Sheohar, though there is a Flood Control Room active from June to October yearly. In view of this, one of the measures to be undertaken by the DDMA towards DRR is the establishment of a DEOC of excellence.
- 2) The District Crisis Management Group (DCMG) is not formally organized at district level in Sheohar. It is recommended that the CMG be created and their members get training on disaster response mechanisms and equipment, Incident Command System, First Information Report, Loss and Damage Assessment, etc.
- 3) A record with the stakeholders for disaster response is not readily available within the district administration. This is a critical element when it comes to preparedness; therefore it is strongly recommended that the district administration fills the following table for quick reference. Additionally, a conference may be held with these stakeholders in order to improve the coordination mechanism between them.

Organizational	Sector of intervention	Contact Person	Address and Contact No	Resources available		
				Staff	Volunteer	Equipment
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There is no early warning systematized within the district as most warnings are given only by the India Meteorological Department (IMD) and other central institutes/organizations. In this regard, the district administration should revise the mechanism currently adopted for early warning and improve it accordingly to ensure that every concerned stakeholder is included and communicated in a timely manner.

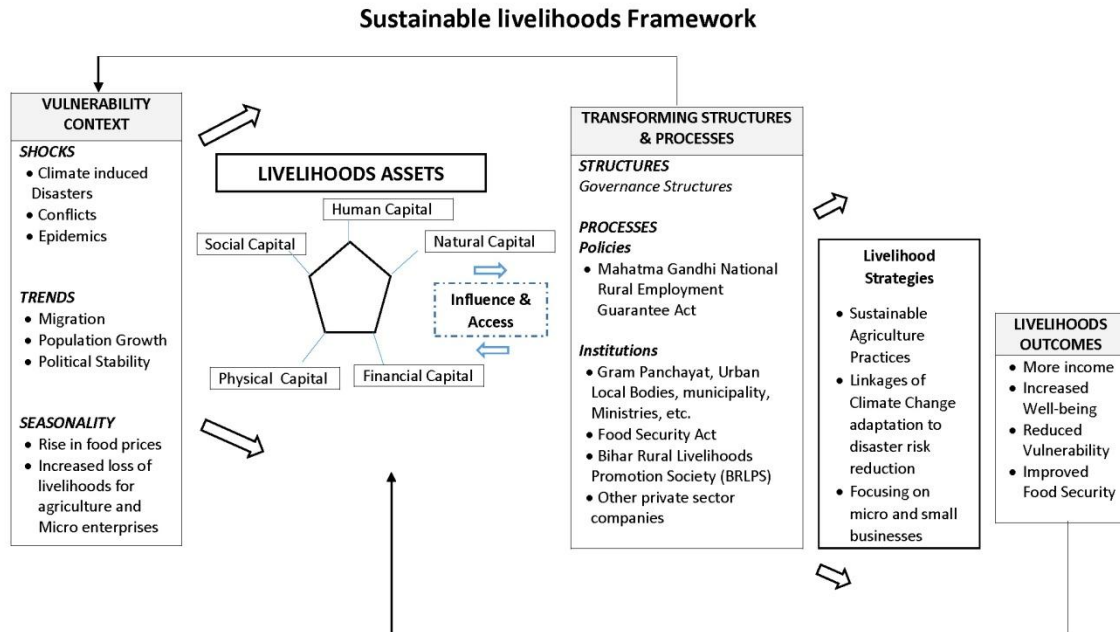
- 5) As for the community early warning system, it is recommended that the district adopt a mass voice message mechanism so to easily and quickly spread the warning to the concern communities as per the block-wise hazards assessment.
- 6) Many line departments obtain the resources they require under the private contractors scheme, which present various benefits (e.g. the maintenance does not have to be performed by the local administration itself). On the other hand, this scheme should be closely monitored and evaluated from time to time to

identify if any area requires improvement so to ensure that it meets the needs of the line departments.

- 7) Human resources are less in many departments. Besides that, a schedule for department-wise trainings about disaster management should be set every six months to ensure skilled a workforce. Accordingly, Mock-Drills and Emergency Management Exercise have to be planned and conducted in a regular basis (please refer to the **General Plan**).
- 8) Key buildings requiring retrofit or repair were identified throughout Sheohar. Following is a summary of the findings to guide further measures by the district. For detailed explanation, one may refer to the School Safety and Hospital Safety Audits, as well as the Office Disaster Management Plan.

Sr. No.	Buildings	Main concerns
1	Collectorate	No fire safety measures, earthquake protection.
2	Schools	Basic infrastructure of government building is very poor, no fire safety protection.
3	Hospitals	No fire safety measures.
4	Police Station	No fire safety measures.

3. Sustainable livelihoods framework



4. Line Departments: State and National Government Schemes

Following are the schemes reported by the line departments to be in use in Sheohar. The list is presented in a department-wise manner and contains, besides the department itself, the scheme, its benefits, and eligibility criteria

1. Agriculture department

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Benefits	Eligibility
1	Diesel Anudan (Provided in case of drought)	Farmers affected because of drought or low rainfall –Every farmers gets 300 rs per acre for buying diesel and irrigating his field	Farmers affected by drought or low rainfall
2	Seed subsidy	Seeds subsidy is provided in case farmers register loss	
3	Fasal Shati Anudan	For 1 acre of crop damage 5400 rs are provided	
4	Shatabdin alkoop yojnaanudan	Subsidized bore well and hand pump sets are provided with 50% subsidy to affected farmers	

2. Education

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Ben efits	Eligib ility
1	Sarva shiksha abhiyaan		
2	Saksharta mission		
3	Small scale awareness programs like debate and essay completion on disaster awareness organized by the state government		

3. Fisheries department

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Benefits	Eligibility
1	Samagra Matsya Vikas Yojna	Under this scheme money was deposited in the bank accounts for the fishermen cooperative societies to take loan (IDBI Bank). But the challenge was that the bank was not able to provide loan as providing guarantee was being a challenge for these societies. Recovery of loans	

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		was being a challenge.	
2	Rashtriya krishi vikas yojna	50% subsidy for bore well (75000)	

4. Range office

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Benefits	Eligibility
1	Tree planting and livelihood generation scheme (Not the name of the scheme)	Formers are distributes sampling and they are paid money for growing it – if the growth is more than 50% they get 15 rs per tree, if more than 40% they get 12 rs and if below 30 they don't get any money.	

5. Industries Department

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Benefits	Eligibility
1	Insurance policy for weaver and handicrafts enterprise under central government	Insurance from damage	Micro to small scale weavers or handicrafts enterprise
2	Pradhanmantri employment guarantee scheme (Central government scheme)	Employment generation/ loan provided upto 25% Weaker section – Rural - upto 35 lakhs Urban - upto – 25 lakhs General section Rural – 25 lakhs Urban – upto 15 laks	

6. Minor Irrigation Department

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Benefits	Eligibility
1	Bihar shatabdi niji nal koop yojna	Installation of 200 tube wells in the district and handing them over to people. For deep well – 35,000 and for shallow well 15000 is provided	Land holding size should be more than 1 acre
2	Udma sichai yojna (Lift irrigation scheme) – 6 floating		

	pump set on river which pump water through underground irrigation pattern. (In the year 2003-04)		
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7. Power distribution department

State and Central Government's Schemes(Mitigation Plan)			
S. No.	Scheme	Benefits	Eligibility
1	Rajiv Gandhi gramini vidyuti karan yojna	Providing electricity in the rural part of the country.	Only applicable for rural electrification
2	BRGF Phase II		Only applicable for rural electrification

5. State Schemes for Disaster Risk Reduction

Sr. No.	Name of the schemes	Benefits	DRR	Activities for DRR
1.	Mukhya Mantri Gram Sadak Yojna (MMGSY)	Good all-weather road connectivity to unconnected villages	- Useful in pre as well as post disaster situation for road connectivity	- Construction of all-weather roads in remote areas
2.	Mukhya Mantri Nihshaktjan Swarojgar Yojana	The scheme extends loans for self-employment to persons with disabilities.	- Livelihood generation	- Livelihood generation
3.	Flood Protection Works	Construction and repair of river and canal embankments, Construction, extension and repairing of canals and Providing storm water drainage system	- Important in flood prone areas to minimise flood risk	- Construction and strengthening of river and canal embankments - Anti Erosion work - Village protection work
4.	Foot and Mouth Disease Control Programme	To prevent, control and contain Foot and Mouth Disease	- To prevent animal epidemics	- Organise HS BQ (Hemorrhagic Septicemia and Black Quarter Combined) vaccination drives
5.	Samarthya Scheme	The scheme aims at physical, social, economic and psychological rehabilitation of Persons with disabilities.	- Provision of aids and appliances such as tricycles, hearing aid, calipers etc.	- Providing aids and appliances such as tricycles, hearing aid, calipers etc. to vulnerable and disaster affected population.
6.	Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP Scheme)	To assist the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard	- Provision of assistance to the needy disabled persons in procuring durable, sophisticated	- Providing of assistance to the needy disabled persons in procuring durable, sophisticated and scientifically

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		aids and appliances that can promote their physical, social and psychological rehabilitation, by reducing the effects of disabilities and enhance their economic potential.	and scientifically manufactured, modern, standard aids and appliances	manufactured, modern, standard aids and appliances
7.	Janani Evam Bal Suraksha Yojana	Reduce maternal and neo-natal mortality by promoting institutional deliveries	- To provide better health care facilities	- Provide assistance to disaster affected families
8.	National Vector-borne Disease Control Programme	Prevention and control of vector borne diseases i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya	- To prevent epidemic	- Organise community awareness programmes and vaccination drives

6. National Schemes for Disaster Risk Reduction

Sr. No.	Name of the schemes	Benefits	DRR	Activities for DRR
1.	Member of Parliament Local Area Development Scheme (MPLADS)	Each MP has the choice to suggest to the District Collector for, works to the tune of Rs.5 Crores per annum to be taken up in his/her constituency. The Rajya Sabha Member of Parliament can recommend works in one or more districts in the State from where he/she has been elected.	<ul style="list-style-type: none">- Mitigation and prevention through creation of durable community assets based on the locally felt needs- As per Para 2.8 of the guidelines on MPLADS, Hon'ble MPs can recommend up to a maximum of Rs. 1 crore for rehabilitation work for the affected areas anywhere in the country in the event of calamity of severe nature.	<ul style="list-style-type: none">- Construction of flood control embankments- Construction of common shelters for cyclones, Floods and handicapped- Purchase of motor boats for flood and cyclone prone areas- Fire tenders for Government organization- Retrofitting of essential lifeline buildings, viz Govt. hospitals, Govt. Schools and public buildings to be used as shelters in an emergency.- Early Warning Systems for effective disaster mitigation.- Construction of roads, approach roads, link roads, Pathways.- Drinking water facility
2.	Indira Awas Yojana (IAY)	Provides financial assistance to rural poor for constructing their houses themselves	<ul style="list-style-type: none">- Providing disaster resilient housing in areas prone to natural calamities- To reducing risk of vulnerable population in Pre-disaster situation	<ul style="list-style-type: none">- Construction of disaster-resilient houses
3.	Mahatma Gandhi National Rural Employment Guarantee	Legal guarantee for one hundred days of employment in every financial	<ul style="list-style-type: none">- To minimise economic vulnerability of the people Pre-disaster situation	<ul style="list-style-type: none">- Construction of river embankments- Construction of roads in remote areas- Construction of multi-

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	Scheme (MGNREGS)	year to adult members of any rural household willing to do public work-related unskilled manual work	- Useful for livelihood generation in Post-disaster situation	hazard shelters
4.	Swarnjayanti Gram Swarajgar Yojna (SGSY)	Bring the assisted poor families above the poverty line by organising them into Self Help Groups (SHGs) through the process of social mobilisation, their training and capacity building and provision of income generating assets through a mix of bank credit and government subsidy.	- To minimise economic vulnerability of the people Pre-disaster situation - Useful for livelihood generation in Post-disaster situation	- Creation of SHGs
5.	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Good all-weather road connectivity to unconnected villages	- Useful in pre as well as post disaster situation for road connectivity	- Construction of roads in remote areas
6.	National Health Mission (NHM) (NRHM and NUHM)	To provide accessible, affordable and quality health care to the urban and rural population, especially the vulnerable groups.	- One of the most important component in Pre as well as post disaster situation to provide universal access to health care facilities	- Rapid Action Force for Emergency Medical Response - Emergency ambulances - Preparedness for mobile Field Hospitals
7.	Scheme for Animal Health Care in the State	Schemes under Department of Animal Husbandry	- To control Animal epidemics	- Vaccination drives
8.	JnNURM	To improve the quality of life and	- To develop and strengthen urban	- Development of river embankments

		infrastructure in the cities	infrastructure to minimise urban risk	- Construction of roads - Storm water drainage
9.	Rashtriya Swasthya Bima Yojana	To provide health insurance coverage for Below Poverty Line (BPL) families.	- Insurance and Risk Transfer	- Insurance (Disaster Insurance)
10.	Pradhan Mantri Awas Yojana (PMAY)	To enable better living and drive economic growth stressing on the need for people centric urban planning and development.	- Minimising risk by constructing Disaster Resistant housing in Urban areas	- Construction of disaster resistant houses
11.	Pradhan Mantri Suraksha Bima Yojana (PMSBY)	An accidental Death and Disability insurance scheme	- Insurance and Risk Transfer	- Insurance
12.	The Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	A term life insurance policy and it will provide life insurance coverage on the death of the policyholder.	- Insurance and Risk Transfer	- Insurance

7. Climate Change Action Plan:

Climate change will have wide-ranging effects on the environment, and on socio-economic and related sectors, including water resources, agriculture and food security, human health, terrestrial ecosystems and biodiversity and coastal zones. Changes in rainfall pattern are likely to lead to severe water shortages and/or flooding. Melting of glaciers can cause flooding and soil erosion. Rising temperatures will cause shifts in crop growing seasons, which affects food security, and changes in the distribution of disease vectors putting more people at risk from diseases such as malaria and dengue fever. Temperature increases will potentially severely increase rates of extinction for many habitats and species (up to 30 percent with a 2° C rise in temperature).

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A rise in extreme events will have effects on health and lives as well as associated environmental and economic impacts. Because of the speed at which change is happening due to global temperature rise, it is urgent that the vulnerability of developing countries to climate change is reduced and their capacity to adapt is increased and national adaptation plans are implemented. Future vulnerability depends not only on climate change but also on the type of development path that is pursued. Thus adaptation should be implemented in the context of national and global sustainable development efforts.

The international community is identifying resources, tools and approaches to support this effort. Adapting to climate change entails taking the right measures to reduce the negative effects of climate change (or exploit the positive ones) by making the appropriate adjustments and changes. There are many options and opportunities to adapt. These range from technological options such as increased sea defenses or flood-proof houses on stilts, to behaviour change at the individual level, such as reducing water use in times of drought and using insecticide-sprayed mosquito nets. Other strategies include early warning systems for extreme events, better water management, improved risk management, various insurance options and biodiversity conservation.

Available evidence shows that there is high probability of increase in the frequency and intensity of climate related natural hazards due to climate change and hence increase in potential threat due to climate change related natural disasters in India, and Bihar is no exception to this. It is highly vulnerable to hydro-meteorological natural disasters, with North Bihar in general being highly flood-prone, and South Bihar being highly drought prone. In the (relative) absence of state level climate models and/or vulnerability studies, as well low community awareness, Bihar is potentially more sensitive and vulnerable to the climate change and its impacts.

a. Sector Specific Activities for climate Change

Sector	Invention type	Activities		
Disaster Management	Coordination and networking	Setting up of Climate Change Sub-cell in the district		
	Monitoring of various climate parameters	Establish automatic weather stations at critical locations to monitor the changes in various climate parameters.		
	Research Training & Capacity Building		Community based risk assessment, Preparation of disaster management plan, Training of community members on search and rescue. Training of: <ul style="list-style-type: none"> - Departmental officials in vulnerability assessment. - Departmental officials in the use of GIS and RS tools for effective resource management. - Engineers in retrofitting of existing structures and safer construction practices. - Mason in safer construction practices. - Formal first responders in search & rescue & first aid. - District level government officers in post-disaster needs assessment. - Media personnel in reporting disaster related issues. - Government officials in preparation of disaster management plans - Government officials in post disaster response and utilisation of IRS principles. 	
			Mock drills and table top exercises involving nodal officers of various government departments	
			Awareness	Knowledge sharing on Disaster management through various media (performing, print and electronic) <ul style="list-style-type: none"> - Training of schoolteachers in vulnerability assessment and school disaster management plans preparation. - Vulnerability assessments: Structural and Non-structural, - Training, Mock Drills, painting etc. competitions in educational institutions,
				<ul style="list-style-type: none"> - Training of doctors in mass casualty management and hospital disaster management plan preparation. - Vulnerability assessments: Structural and Non-structural
	Vulnerability and risk management	<ul style="list-style-type: none"> - Vulnerability assessment of lifeline structure and demonstrative retrofitting - Relocation of critical infrastructure - Relocation of a few threatened habitations 		

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Sector	Invention type	Activities
		<ul style="list-style-type: none"> - Assessment of urban vulnerability particularly in case of extreme precipitation events - Vulnerability assessment of all industrial units in the state
Agriculture	Planning	Development of agro-climatic zone wise adaptation plans
	Forecasting and early warning systems	<ul style="list-style-type: none"> - Establish weather service and early warning system through enhanced agro-met technology deployment and information dissemination - Facilitating access to information and institutional support by expanding Automatic Weather Stations (AWS) networks to the Panchayat level and linking them to existing insurance mechanisms including Weather Based Crop Insurance Scheme (WBCIS) and National Agriculture Insurance Scheme (NAIS), scaling the returns at that level;
	Improved varieties and practices	Development and deployment of improved crop varieties (drought and flood tolerant)
	Irrigation	<ul style="list-style-type: none"> - Promotion of Micro-irrigation systems augmentation - Solar and wind power systems for irrigation
	Soil and water conservation	Implementing measures to minimize soil and water losses through resource conservation technologies such as agro forestry, integrated watershed management, and water harvesting through check dams, renovation of existing ponds, etc. and building new ones
	Integrated nutrient and pest management	Study on integrated nutrient and pest management based on sector climate vulnerability assessment; development of management options
Forests and Bio Diversity	Interventions in forest and nonforest areas	Forest/biodiversity protection, conservation, and green cover augmentation
	Fire Management	Measures for fire management in all forest types
	Research	Studies on indigenous trees species to assess their vulnerability to climate change
	Biodiversity conservation	Survey, identify, catalogue, document, protect, and improve/enhance the status of biodiversity
Water resource	Water infrastructure/resource augmentation/conservation/management	<ul style="list-style-type: none"> - Inventory of and revival/ repair of Ahar-Pynes and traditional systems of water initiated - Conservation and preservation of wetlands and maintenance of optimal wetland hydrology - Groundwater resources regulation and recharge/replenishment - Actions for water use efficiency across sub-

Sector	Invention type	Activities
		sectors <ul style="list-style-type: none"> - Actions for improving water quality - Actions for adaptive retrofitting of infrastructure assets and O&M improvements
Urban development	Energy demand reduction and efficiency	<ul style="list-style-type: none"> - Energy efficiency and conservation measures - Promotion of and codes for green/energy efficient buildings, including in urban housing projects under various programmes
	Adoption of renewable	Promotion of renewable energy sources and technologies
	Management of water, municipal solid waste and waste water	Comprehensive approach in management of water, municipal waste and waste water with a realize their full potential for energy generation, recycling and reuse, composting, rainwater harvesting, Retrofitting of urban infrastructure climate resilience based on vulnerability and risk assessment
	Urban transportation	<p>Evolving integrated land use and transportation plans, achieving a modal shift from private to public mode of transportation, encouraging the use of non-motorised transport, improving fuel efficiency, and encouraging use of alternate fuels</p> <p>Adaptation in terms of realignment and relocation, design standards and planning for roads, rail and other infrastructure to cope with risks from climate change Promote and foster alternative fuels such as CNG, bio-fuels</p>
Transport	Transport Infrastructure, planning, and management (Enhanced and resilient transportation infrastructure and systems in place)	<ul style="list-style-type: none"> - Improve access to bus services and service quality - Enable and promote public transport - Improve route and traffic planning, - Rigorously implement measures for vehicular pollution control - Promote the use and ensure availability of cleaner fuels such as CNG and bio-fuels
Energy	Energy conservation and efficiency improvements	<ul style="list-style-type: none"> - Promoting the use of energy efficient pumps and motors - Promotion of CFLs under the Bachat Lamp Yojana (BLY) - Awareness generation about energy efficient equipment and energy conservation measures
Industries and mining	Promoting Green House Gases Mitigation options	<ul style="list-style-type: none"> - Build awareness for adoption of GHG mitigation options

Sector	Invention type	Activities
Human Health	Building programme Based resilience	<ul style="list-style-type: none"> - Design and deploy to manage increased vector borne and water borne disease burden - Design and deploy improved approaches to deal with heat and wave conditions - Design and deploy measures to address drought induced malnutrition, and food security issues
	Capacity building	<ul style="list-style-type: none"> - Build people’s awareness of health hazards from climatic change through IEC - Developing and strengthening of disaster management teams in district hospital specifically to respond to the effect of extreme climate change
	Research	Study on poverty and equity dimensions of health, disease burden and morbidity as a result of climate change; design of appropriate measures to incorporate findings into health policy and programming
	Health Infrastructure resilience	Reviews of the health infrastructure and potential climate change related vulnerabilities and risks (and where such infrastructure is found to be at high risk, retrofit to make these more climate resilient)

b. Initiatives to Mitigate Climate Change

Initiatives to mitigate disasters (intensified by climate change)	Initiatives to mitigate climate change
Continuous on-going efforts at tracking and disaster risk indicators and developing improved early warning systems;	Introducing new, more efficient and cleaner technologies in thermal power generation.
Developing and putting in place strategies and action programmes for disaster vulnerability reduction;	Promoting renewable energy generation and increasing the share of alternative fuels in overall fuel mix.
Extensive information, education and communication campaigns for the public in general, and specific communications in high risk zones;	Reducing emissions from transportation sector
Improving inter-departmental coordination and communications for improved risk management and disaster response;	Promoting energy efficiency in the economy, notably in industry, transportation, buildings and appliances.
Seamless integration of state disaster management machinery with other key stakeholders such as other developmental agencies and civil society for extended capability in all aspects of risk	Reducing emissions from waste.

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management and disaster response;	
Provision of all necessary equipment and infrastructure for speedy and efficient responses to disasters including search and rescue, relief measures, and rehabilitation/reconstruction;	Developing climate resilient infrastructure
Upgradation and retrofitting of key infrastructure assets in risk-prone zones/areas;	Full implementation of Green India Mission and other programmes of afforestation.
Systematic implementation of the State Disaster Management Plan in all its aspects.	Planning and implementation of actions to enhance climate resilience and reduce vulnerability to climate change.
Proper waste management practices, particularly biomedical waste management to improve health and laying scenario	