



Guidelines
for
Hazard-Specific Non-Structural Mitigation Measures
(NSM)

under

State Disaster Mitigation Fund (SDMF)



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1070 (State) ; 1077 (District)

Guidelines for Hazard-Specific Non-Structural Mitigation Measures (NSM)-SDMF

Mitigation Measures				
Sr. No.	Non -Structural Measure	Suggested Actions	Nodal Department/ Expert Agency	User Dept./ Agencies
FLOOD & URBAN FLOODING:				
Local Planning, Regulations and Guidelines				
a)	Preparation of River basin Flood Plains Management Plan at various level.	<ul style="list-style-type: none"> Generation and up-dation of drainage map. Delineation of low-lying areas characterized by flood plains, river terraces etc. along the major rivers and its tributaries in all the river basins of H.P. 	JSV	All Departments
b)	Amendment of building codes, bye laws for flood risk reduction and mitigation	<ul style="list-style-type: none"> Integration of all building by laws codes and practices, their study and identification of gaps etc. Capacity building and consultation with the stakeholder departments. 	TCP and UDD	TCP/UD/RD/ Panchayat Raj; Other Departments undertaking construction activities
c)	Preparation flood plain zoning regulations and its implementation at ground level.	<ul style="list-style-type: none"> Amendment of building codes on the basis of flood plains and its vulnerability Flood-Resistant Materials, etc. Implementing Flood Barriers Plan, etc. Adjusting zoning laws to limit or restrict development in high-risk flood areas etc. Enforcing regular inspections and maintenance of existing flood protection measures etc. 		
d)	Developing risk insurance and risk transfer strategies and promote flood insurance	<ul style="list-style-type: none"> Collect and analyze data on past events, vulnerabilities, and exposure to risks. Developing risk insurance and risk transfer strategies and promote flood insurance Development & Distribution of IEC materials for the motivation of the general public towards the insurance benefits at the time of disaster Motivation of the users to go for insurance as it protects from variety of risk from different hazards and it will lessen their burden by way of shifting financial liability to the insurance sector. 	Various Insurance Companies.	General Public SDMA and DDMA
e)	Protection of village common land in the river beds from encroachment.	Delineation of low-lying areas characterized by flood plains, river terraces etc. along the major rivers and its tributaries in all the river basins of H.P.	Revenue & Forest	General Public

f)	Protection and revival of natural drains and drainage systems	<ul style="list-style-type: none"> • Conduct a comprehensive survey to identify and map existing natural drains, paleo channels. • Implement and enforce zoning laws that prevent construction and development on or near natural drains • Establish legal frameworks to protect natural drainage systems from encroachment and pollution. • Encourage community participation in monitoring and maintaining these systems. • Identification of the drains at the large scale and microscale level 	JSV, HPSDMA (Macro Scale), UD (ULBs) for micro scale identification	All Departments General Public
g)	Need based planning and projects in urban areas	<p>Drone based planning as per requirement GIS based mapping of all ULBs and identification of the areas for further planning purpose.</p> <p>Carrying capacity of the major urban towns of the State.</p> <p>To conduct surveys, interviews, and public consultations to understand the community's needs and priorities.</p>	<p>HIMCOSTE</p> <p>DEST &CC</p> <p>UDD</p>	UD and Other Departments
h)	Policy and planning for designing of roads, bridges and other infrastructure above the historic flood line will ensure connectivity for locals in case of floods and also response activities if required	<p>Marking of HFL along the major rivers, its tributaries and Flood Zonation</p> <p>Flood Zonation along the major river basins and their tributaries</p>	<p>DDMAs</p> <p>JSV</p>	<p>RDD&PR, PWD</p> <p>All Departments undertaking development activities.</p>
i)	Developing insurance and risk transfer strategies that create a better economic ecosystem	<ul style="list-style-type: none"> • Collect and analyze data on past events, vulnerabilities, and exposure to risks. • Developing risk insurance and risk transfer strategies and promote flood insurance • Development & Distribution of IEC materials for the motivation of the general public towards the insurance benefits at the time of disaster • Motivation of the users to go for insurance as it protects from variety of risk from different hazards and it will lessen their burden by way of shifting financial liability to the insurance sector. 	Various Insurance Companies	All Stakeholder Departments

j)	Creating local committees for hazard mitigation that look into land use management, green infrastructure, watershed management and policy planning for building codes & flood plain management, etc.	Awareness in campaign mode at the Block & ULB level for preparing community towards Disaster Management Capacity building of village and ULBs level volunteer teams. Constitution of village and ULB Level disaster management committees for Disaster Management	ULBs, UD, JSV, RDD& PR, DDMA's DDMA's & ULBs DDMA's and ULBs	ULBs, UD, JSV, RDD& PR
Urban Planning				
a)	Mapping encroached area that aid to blockage and relocating the population	Identification of areas that may lead to blockage at the time of any disaster using latest technological tools of RS&GIS Mapping of hotspots and towns	UDD & Revenue	UDD
b)	Identifying old water networks that help flow and refurbishing them	<ul style="list-style-type: none"> • Conduct a comprehensive survey to identify and map existing natural drains, paleo channels. • Implement and enforce zoning laws that prevent construction and development on or near natural drains • Establish legal frameworks to protect natural drainage systems from encroachment and pollution. • Encourage community participation in monitoring and maintaining these systems. • Identification of the drains at the large scale and microscale level 	UDD & TCP	All Departments
c)	Deploy technological systems of monitoring that ensure strict adherence to local codes	Deploying technological systems of monitoring involves implementing advanced tools such as AutoCAD/GIS, etc. to oversee and track various activities.	TCP & UDD	TCP & UDD
d)	Increasing awareness and infrastructure for rainwater harvesting	Implementation of the Govt instructions and rain harvesting policy and guidelines in practice both at deign as well as ground level.	UDD, TCP and JSV	All Departments & Stakeholders
i. Education and Awareness				
a)	Installation of Weather and hydrological Stations and improvisation of flood warning systems	Densification of the meteorological network across the State up to local level Automatic gazing station along the prominent flood prone rivers/tributaries Developing an EWS for flood hazards along the rivers/tributaries having flood history	SDMA, JSV, IMD & CWC	All User Agencies and Departments

b)	Creation of Data bases for decision support systems (DSS) & disaster database	Developing infrastructure and facilities at the SDMA/DDMA level for developing a decision support system for different hazards.	SDMA/ DDMA/ State and National institutions	All Stakeholder Departments
		Integration of the existing databases with other National as well as State level institutions with the Centralized data base at SDMA level.		
c)	Strengthening information and communication strategy at community level	Constitution of DM Committees at the village level and Awareness program at the Panchayat level about the vulnerability of hazards.	RD & PR & DDMA	DDMA, PR&PR
		Use of social/ print/ electronic/ digital media for strengthening information and communication strategy up to the community level	HP SDMA & DDMA	
d)	Policy and awareness campaign on flood management and water management techniques to reduce the occurrence of the hazard	Developing policy and guidelines for flood management	JSV	JSV, HP SDMA and All DDMA
		Use of social /print/ electronic/ digital media for Strengthening information and communication strategy up to community level		
e)	Increasing capacity of knowledge about the hazard in the community by various tools of community development	<p>Increasing the community's knowledge about hazards through various community development tools as under:</p> <ul style="list-style-type: none"> • Public Awareness Campaigns • Community Workshops and Training • Simulation Exercises and Drills • Resource Centers and Information Hubs • Cultural and Traditional Methods • Through IPR Nodes • IEC Material • Constitutions of Jathas at village level. 	HPSDMA/ DDMA, RDD&PR / IAG Network	All Stakeholder Departments
f)	Informing about new developments in flood safety through brochures and pamphlets	<ul style="list-style-type: none"> • To carry out exercise for comprehensive flood risk assessment based on exposure, vulnerability and likelihood of an event. • Designing responses to the local communities through IPR nodes • Use of social/ print/ electronic/ digital media for Strengthening information and communication strategy up to community level 	HPSDMA/ DDMA, RDD&PR / IAG Network	All Stakeholder Departments
g)	Encourage use of insurance, maps and geological databases to study their region	<ul style="list-style-type: none"> • Collect and analyze data on past events, vulnerabilities, and exposure to risks. • Developing risk insurance and risk transfer strategies and promote flood insurance 	Various Insurance Companies; SDMA/ DDMA	All Stakeholder Departments

		<ul style="list-style-type: none"> • Development & Distribution of IEC materials for the motivation of the general public towards the insurance benefits at the time of disaster • Motivation of the users to go for insurance as it protects from variety of risk from different hazards and it will lessen their burden by way of shifting financial liability to the insurance sector. 		
h)	Sensitization and awareness about reducing the risk of floods through innovation techniques and efficient utilization of local resources	<p>Awareness in campaign mode at the Block & ULB level for preparing community towards Disaster Management</p> <p>Capacity building of village and ULBs level volunteer teams.</p> <p>Constitution of village and ULB Level disaster management committees for Disaster Management</p>	ULBs, UD, JSV, RDD & PR & DDMA's	ULBs, UD, JSV, RDD&PR
Earthquake				
Strengthening of Building Laws and Regulatory Framework				
a)	Development of construction standards and codes which adhere to the latest technology for earthquake resistant building techniques and techniques of retrofitting	<p>Adoption of safe construction practices in all type of constructions</p> <p>Implementing construction standards protocols such as Seismic knowledge, Structural design, material usage, Quality Control, Foundation type and Retrofitting</p>	TCP, UDD, RD&PR	All Stakeholder Departments
b)	Develop a mechanism for regular inspection of old, under construction and new plan infrastructures to be constructed as per earthquake resilient standards. Share the recorded data with municipalities to address issues of faulty or poor standards of construction	<p>Developing an institutional mechanism by involving students from the local Engineering Colleges from Civil streams to carry out the assessment.</p> <p>To develop a mechanism for having 3rd party audit.</p> <p>Strengthening institutional set up of RDD&PR department to carry out assessment of the rural buildings.</p>	TCP, UDD, RDD&PR TE	All concerned Stakeholder Departments

c)	Making the latest standards for construction and revised BIS codes available to developers, builders and the general public	Study of existing BIS and Gaps. Involvement of the consultant to study codes and gaps, etc. Capacity Buildings of construction sector through workshops and distribution IEC material at different platforms.	TCP, UDD & RD&PR	All concerned stakeholder departments
Promoting Earthquake Resilient Infrastructure				
a)	Promoting earthquake resilient infrastructure in earthquake-prone areas using earthquake resistant techniques.	Documentation the traditional construction practices/ dissemination of best construction practices and to conduct workshop	PWD/ TCP, SDMA and DDMA's	All the stakeholder Departments
b)	Adoption of traditional knowledge and best practices amalgamating with modern technology.	Capacity Buildings of construction sector through workshops and distribution IEC material at different platforms. Documentation the traditional construction practices/ dissemination of best construction practices and to conduct workshop.	RD&PR; UDD SDMA/ DDMA's/ Network IAG	All concerned stakeholder Departments
Understand the risk of earthquake. Following measures can be undertaken				
a)	Mapping the geological factors like location of faults, soil composition and condition and related potential hazard. Modeling earthquake scenarios to estimate the potential loss to life and property	To commission studies based on published literature on the local geology, structures, sensitization of the general mass on the role of geology/ structure in causing earthquakes. Also developing district wise earthquake maps based on geology, structure etc.	GSI// IITs/ NITs/ Research Institute/ Expert agencies (Coordination by SDMA)	All Stakeholder Departments
b)	Geo-tagging the critical infrastructure such as hospitals, fire stations, roads, etc.	GIS Mapping of critical infrastructure such as hospitals, fire stations, roads, etc.	HIMCOSTE	All Stakeholder Departments
c)	Create and maintain a database to measure the vulnerabilities of the local population. Further, creating earthquake zonation maps depicting the vulnerable areas,	To undertake the hazard, risk vulnerability assessment of any given area based on the available information.	GSI// IITs/ NITs/ Research Institute/ Expert agencies (Coordination by SDMA)	All Stakeholder Departments

	evacuation points and routes and critical infrastructure			
d)	Reviewing seismic zones to have an application-based approach of land use planning to achieve restricted construction in reviewed earthquake-prone areas	Web GIS Mobile App need to be developed to restrict construction in earthquake-prone Zones to promote hazard resistant constructions	Through expert agencies to be coordinated by SDMA	All Stakeholders
Education and Awareness				
a)	Conducting sessions/ workshops at schools, households and businesses to spread awareness about earthquake risk and mitigation activities	<ul style="list-style-type: none"> • Sensitization workshop on Earthquake at Block level and School level (such as Children Science Congress) quiz on Disaster Management need to be started. • Use of social/print/electronic/digital media for Strengthening information and communication strategy up to community level 	HPSDMA/ DDMA/ Educational Institutes, CBRI, PWD, RDD&PR; UDD; HP IAG; Insurance Companies	All Stakeholder departments
b)	Educating individuals on safety techniques to be followed at the time of an earthquake by regular campaigns through IEC materials (print, electronic media)			
c)	Deploy risk transfer strategies for economic resilience by increasing awareness about earthquake insurance			
d)	Educating homeowners about different structural and non-structural mitigation techniques to increase disaster resilience, like when and how to retrofit, how to make a seismically safe house, how to secure objects like			

	cupboards, clocks, shelves etc.			
e)	Training and capacity building programs for masons, architects, engineers, builders, contractors and developers on earthquake-resilient materials and techniques of construction	Training of Masons, architects, engineers, builders, contractors and developers on earthquake-resilient materials involvement of Housing Facilitation Centre (HFC) within Technical Education department for capacity building	DDMAs/ RDD&PR/ UD/ TE	All Stakeholder departments
f)	Promotion of Research and Development (R&D) activities to develop new technology and study traditional knowledge / best practices measures to increase resilience to earthquakes	To develop new technology and study traditional knowledge / best practices measures through research Guidelines to be prepared for undertaking R&D work	IIT/ NIT/ CBRI / Expert Agencies (To be coordinated by HP SDMA); Technical Education Department	All Stakeholder Departments
g)	Inclusion of Earthquake Mitigation measures in the Education Sector			
h)	Documentation and Promotion of Local knowledge on Seismic safety in building construction			
Landslides, Avalanche, GLOF & LLOF				
Implementing Zonation and Land-use Plan				
a)	Identifying hazard-prone areas based on parameters such as geology, lithology, slope, vulnerable glacial lakes, snow accumulation, etc.	Mapping for generating district wise Inventory of Landslides	Through Expert Agencies (to be coordinated by the HP SDMA)	All the Stakeholder Departments
		Micro zonation of landslide prone areas based on important parameters such as lithology, structures, precipitation, soil, thickness of overburden, relief, land use/ land cover, etc.		
		Mapping and Monitoring of GLOFs in different basins		
		Flood management plan along the potential GLOFs catchments.		
		Regular water level monitoring of potential GLOFs		
b)	Preparation of inventory mapping of	To map the critical infrastructure along the potential zones/ locations	Involving academic and research	All stakeholder Departments

	critical infrastructure and other vulnerable buildings. Development and maintenance of the database of vulnerable locations		institutions/ IIT/ DGRE/ ISRO (To be coordinated by the HP SAMA)	
c)	Using modeling technique to create the hazard scenarios to get an estimate of probable losses. Multi hazards risk mapping and modelling of vulnerable areas	To propose study through simulation exercise for potential hazards considering the multi hazards scenario	Through external agencies (To be coordinated by the HP SAMA)	All stakeholder department
d)	Infrastructure planning based on probabilistic estimates of hazards	To plan for developing disaster resilient infrastructure in view of the multi-hazard simulation exercises.	PWD, JSV, HPSEBL, and other Departments	All stakeholder Departments
e)	Review/revision of existing codes/ standards, guidelines; and preparation of framework land use regulation for landslide mitigation and management	Integration of all building by laws codes and practices, their study and identification of gaps etc. Enforcing regular inspections and maintenance of existing landslide measures etc.	TCP, UDD, RD&PR	All stakeholder Departments
Education and Awareness				
a)	Spreading awareness about the underlying risks by various tools of community engagement	Increasing the community's knowledge about hazards through various community development tools as under: <ul style="list-style-type: none"> • Public Awareness Campaigns • Community Workshops and Training • Simulation Exercises and Drills 	SDMA/ DDMA's, IAG Network	All Stakeholder Departments
b)	Informing the community about the latest development to reduce risk of landslide/ avalanche/ Glacial Lake Outburst Flood (GLOF)/ Landslide Lake Outburst Flood (LLOF) safety by wide publicity through IEC materials (print and	<ul style="list-style-type: none"> • Resource Centers and Information Hubs cultural and Traditional Methods • Use of social/print/electronic/digital media for Strengthening information and communication strategy upto community level 		

	electronic media) and capacity building			
c)	Sensitization and Capacity building of line departments, local community and other stakeholders on different aspects of risk reduction and mitigation strategy	<p>To develop a holistic plan for sensitizing Government machinery. all stakeholders on the various aspects of DRR and its mitigation w.r.t Landslides, GLOFs and Avalanches.</p> <ul style="list-style-type: none"> • Developing risk insurance and risk transfer strategies and promote flood insurance • Development & Distribution of IEC materials for the motivation of the general public towards the insurance benefits at the time of disaster 	HPSDMA/DDMAs/ Through expert agencies and the insurance companies	All Stakeholder Departments
d)	Promoting insurance and its benefits	<ul style="list-style-type: none"> • Collect and analyze data on past events, vulnerabilities, and exposure to risks. • Conduct risk assessments to identify potential hazards and their economic impacts. • Developing risk insurance and risk transfer strategies and promote flood insurance • Distribution of IEC materials • Developing a culture of protection by involving insurance sector. • Hazard based economic Impact and insurance provision at least below poverty line may be prepared. • Explore affordable insurance options for low-income individuals and small businesses to protect against common risks like health issues, crop failure, or natural disasters. • Motivation of the users to go for insurance as it protects from variety of risk from different hazards and it will lessen their burden by way of shifting financial liability to the insurance sector. 	<p>Various Insurance Companies</p> <p>(To be coordinated by the HP SAMA)</p>	All Stakeholder Departments
i. Improving Capacities				
a)	Research and development of the techniques to control the hazards	<p>To commission studies to develop new technology and study traditional knowledge / best practices measures through research</p> <p>To promote research for innovation in various facets of disaster management under various Government schemes.</p>	<p>SDMA/ DGRE/IITs/ CBRI/ CDRI /CRR/ Academic and research Institutions</p> <p>(To be coordinated by the HP SAMA)</p>	All Stakeholder departments

b)	Conducting trainings of government employees on the latest development of the mitigation measures	To expose the Government functionaries involved in DM to have an idea of best practices across the State	HIPA/ SDMA/ NIDM (To be coordinated by the HP SAMA)	All Stakeholder departments
Lightning				
Local Planning and Zonation				
a)	Assessment of vulnerable hot spots and risk	Identification of hotspots across the state.	Through expert agencies	All Stakeholder Departments
b)	Zonation map of occurrence of lightning hazards	Broad zonation based on historical data	(To be coordinated by the HP SAMA)	
Education and Awareness				
c)	Capacity building / training and public sensitization towards lightning and steps to be taken during construction, planning and other purposes	Workshop/ Training at Block/ ULBs Level	HPSDMA/ DDMA/ IITs /NITs/ IAG Network	All Stakeholder Departments
Miscellaneous				
Local Planning and Zonation				
a)	Preparation of plans and zonation maps	Integration of different plans and hazard zonation maps of Himachal Pradesh.	TCP	All Stakeholder Departments
b)	Development and promotion of multi-hazard risk zonation maps, showing applicable codes, regulations, and guidelines	Documentation of the different techno-legal bye-laws for different hazards, guidelines and codes and practices.	UDD, RD&PR	
c)	GIS based risk mapping of different hazards	Generation of multi- hazard maps of Himachal Pradesh.	HP SDMA through expert agencies	
d)	Planning for comprehensive relocation of population from vulnerable zones susceptible to disasters	Identification and mapping of safe locations in view of the multi hazard vulnerability maps		

e)	Identify mechanism for continuing education of orphan and widower livelihood	Sensitization workshop	SJ&E	SJ&E
i. Education and Awareness				
a)	Awareness generation, capacity Building programs including Psychosocial Care and Social Vulnerability Reduction. Mechanism should be developed to utilize the funds for addressing the behavioral aspects of facing disasters among the school children, women, elderly and differently abled	Sensitization workshop on Psychosocial Care and Social Vulnerability Reduction at Block level and School level (such as Children Science Congress) quiz on Disaster Management need to be started.	Health & FW	Health & FW, SJ&E, Education, HPIAG
		Distribution of IEC materials (print, electronic media)		Health & FW, SJ&E, Education, HPIAG
b)	Capacity Building on GIS tools and techniques can be utilized in Disaster Mitigation modelling	Sensitization on NDEM Portal, SDMF Portal Bhuvan Portal and other related GIS platforms used in DM tools and techniques	HIPA/ NIDM/ HIMCOSTE	All the Departments of GoHP
c)	Building a network of research institutions and knowledge base	Centralized documentation of the database on the institutions involved in DM and the data base available at the national and state level institutions in respect of HP.	SDMA/ DDMA	All the Departments of GoHP
		Institutional mechanism at the state level for issuing permission to all the national or state level institutions, academic and research institutions for carrying research in different aspects of the DM in Himalayan ecosystem.		
d)	R&D projects for mitigation measures of various disasters	Providing funding support to carry out sector specific research for different hazards	HP SDMA	All Departments

Drought				
Local Planning and Regulations				
a)	Identification of possible water supplies and capacity to calculate the demand to capacity ratio, concerning historic & present data.	To commission studies on the following <ul style="list-style-type: none"> Identify rivers, lakes, reservoirs, and ponds. Identify aquifers, wells, and springs. Consider potential for rainwater harvesting systems. Water Budgeting Studies on the major river basin 	JSV	Agriculture; Horticulture; JSV; UDD
b)	Identifying local natural indicators like precipitation, temperature, surface moisture, humidity.	To commission studies on the following <ul style="list-style-type: none"> Measure total rainfall and its distribution over time (daily, monthly, yearly). Record maximum, minimum, and average temperatures Assess soil moisture content and surface water availability. Measure relative humidity levels. 	Through expert agencies /Academic and research Institutions/ IMD; DEST&CC (To be coordinated by the HP SDMA)	Agriculture/Horticulture/ All Stakeholder Departments
c)	Assessment committee to be established that ensure proper collection of data for identification.	To constitute multi stakeholder committee and formulation of guideline ad criteria for the collection of the data	HP SDMA	Agriculture/ Horticulture/ JSV
d)	Identifying, planning and procuring of required tangible/intangible material for drought-proofing before the onset of the dry season such as seeds and fodder, health kits, water availability plan, advance credit, etc.	Evaluate the specific risks and needs of the area affected by drought. This includes assessing water availability, soil conditions, and agricultural practices. Determine the essential materials and resources needed, such as drought-resistant seeds, fodder, health kits, water storage solutions, and advance credit.	Agriculture, Horticulture, JSV, AH	Agriculture, Horticulture, AH and General Public
e)	Mechanism for access of farmers to cold storage units.	Establishing a mechanism for farmers to access cold storage units is essential for preserving perishable produce, reducing post-harvest losses, and improving market access through:	Agriculture, Horticulture, Industries	Agriculture, Horticulture

		<p>Assess the specific cold storage needs of farmers, including types of produce, volume, and storage duration.</p> <p>Conduct a feasibility study to evaluate the costs, benefits, and logistical requirements of establishing cold storage units</p> <p>Engage with farmers, local government, agricultural organizations, and potential investors to gather input and build support.</p>		
f)	Setting up drought early warning system	<p>Determine the main goals of the DSS, such as early warning, impact assessment, resource allocation, and response planning.</p> <p>Gather requirements from stakeholders, including government agencies, farmers, water managers, and researchers</p> <p>Develop or incorporate predictive models to forecast drought conditions based on historical and real-time data</p>	Agriculture	Agriculture, Horticulture, JSV
g)	Decision support system for monitoring and managing drought.		Agriculture	Agriculture, Horticulture, JSV
h)	Community-level plans for drought mitigation.	Creating effective community-level plans for drought mitigation involves a series of strategic steps that address both immediate needs and long-term sustainability	Agriculture, Horticulture, RD&PR, JSV	Agriculture, Horticulture, JSV
i)	Afforestation and plantation	<p>Involve local communities, government agencies, environmental organizations, and other stakeholders</p> <p>Scientifically Identification of afforestation site.</p>	Forest Department	All Stakeholder Departments
j)	Setting up water users association.	To constitute water committees at the local level	JSV	Agriculture, Horticulture, JSV
ii) Education and Awareness				
a)	Conduct evaluation of local intervention and run sensitization programs on drought management.	<p>Organize workshops and training sessions for farmers on the benefits and cultivation practices of drought-tolerant crops.</p> <p>Provide resources and support for farmers transitioning to drought and climate resilient varieties.</p>	SAMETI/Agriculture University/ Agriculture and horticulture Department	Agriculture, Horticulture, JSV
b)	Developing good farming practices by introducing drought-tolerant varieties of crops, crop planning with rotation and terrace & contour	<p>Organize workshops and training sessions for farmers on the benefits and cultivation practices of drought-tolerant crops.</p> <p>Provide resources and support for farmers transitioning to drought and climate resilient varieties.</p>	SAMETI/ Agriculture University/ Forestry and Horticulture University, Agriculture and Horticulture Department	Agriculture, Horticulture

	farming to save runoff, etc.			
c)	Increase training and capacity building of communities in soft infrastructure like Women's Self-Help Groups (SHGs.) and farmer Joint Liability Groups etc.	involvement of Women's Self-Help Groups (SHGs) and Farmer Joint Liability Groups (JLGs) to enhance community resilience.	Agriculture, Horticulture	Agriculture, Horticulture
d)	Setting up community-level committees and association to ensure implementation of protocols, like Community-level Plans for Drought Mitigation.	To constitute water committees at the local level	RDD&PR/ Agriculture, Horticulture, JSV	Agriculture, Horticulture, JSV
iii) Government Policies and Framework				
a)	Establishing the mechanism for Construction of "Community/ Village Ponds"	Identification of sites for "Community/Village Ponds"	RDD&PR, Forest, Agriculture, Horticulture	Agriculture, Horticulture, JSV, RD&PR
b)	Setup research programs in educational institutions to study forecasting of drought at the district level, in the chronically drought-affected areas.	To initiate programs for caring research in the field of drought management Guidelines are to be formulated	Academic and Research Institutions through Agriculture & Horticulture Departments	Agriculture, Horticulture, JSV
c)	Economic infrastructure to be built in a robust manner that provides credit, price support and insurance to farmers.	Building robust economic infrastructure to provide credit, price support, and insurance to farmers which is essential for enhancing agricultural productivity, financial stability, and resilience to risks.	Agriculture marketing Board; Agriculture, Horticulture Departments	Agriculture, Horticulture
d)	Updating insurance products specific to agro-climatic zones providing coverage against drought.	<ul style="list-style-type: none"> Collect and analyze data on past events, vulnerabilities, and exposure to risks. Developing risk insurance and risk transfer strategies and promote flood insurance Development & Distribution of IEC materials for the motivation of the general 	Various Insurance Companies through Agriculture & Horticulture Departments	All concerned Stakeholder Departments

		<p>public towards the insurance benefits at the time of disaster</p> <ul style="list-style-type: none"> • Motivation of the users to go for insurance as it protect from variety of risk from different hazards and it will lessen their burden by way of shifting financial liability to the insurance sector. 		
e)	Hazard-zoning using 'Vulnerability Mapping' and ' Risk Assessment Analysis '.	To develop Decision Support System for drought management based on vulnerability mapping	Through expert agencies (To be coordinated by the HP SDMA)	Agriculture, Horticulture departments
f)	Inventory analysis mechanism to be set up for calculating locally available resources.	To development of inventory of all resources up to village level	RD&PR	Agriculture, Horticulture departments