DISASTER MANAGEMENT PLAN

DEPARTMENT OF LANGUAGE, ART AND CULTURE

GOVERNMENT OF HIMACHAL PRADESH

Shimla 171000

CONTENTS

1. ABOUT THE DEPARTMENT

The state of Himachal Pradesh is the bastion of rich cultural heritage with its historical monuments, archaeological sites, traditional arts, sculpture, dance, music and literature. The language and culture of Himachal Pradesh have its distinctive identity, in which all the best streams of Sanskrit language and National Sanatan culture are flowing. The language and culture of the region embrace a strong expression of all aspects of life. The diversified culture of Himachal Pradesh is deeply influenced by the culture of its neighbouring territory of Jammu and Kashmir, Punjab, Haryana, Uttarakhand and Tibet.

The rapid urbanization and industrialization are influencing the cultural legacy of the state. Thus, protection and encouragement of the basic stream of culture are utmost important. To conserve the cultural heritage of the state, the Department of Languages, Art and Culture (LAC), Himachal Pradesh has been established in the year 1973. Since then the department has been actively executing its obligations.

To facilitate various activities of the department, following divisions are constituted:

Language Division: Work related to the development of languages is the main responsibility of the Language Division and its area is wide. The division endeavours for upliftment and promotion of Hindi, Sanskrit, Hill and Urdu languages under different schemes in accordance with the rule of government. Author seminars, poet conventions, speech competitions, literary conferences and various types of competitions are implemented for the development of these languages.

Fine Arts Division: Art is the exponent of the racy and aesthetic spirit. Mural paintings can be seen in the antique monuments Himachal Pradesh's such as Ramgopal Mandir, Damtal, Bakhli Devi Temple, Kulu Dei Sahib Temple, Paonta Sahib, Radhakrishna Temple, Dadasiba, Thakurdwar, Auhar, Bilaspur, Hanuman Mandir, Khusha. Different Buddhist gompa of the state is also equipped mural paintings. In the rural areas of the state, folk painting is still in vogue in the form of tradition writing. Kangra Kalam, Chamba Kalam, Mandi Kalam, Basohali Kalam, Guler Kalam etc. have been flourishing under governmental patronage. Fine art division is continuously working to preserve fine art legacy of the state.

Performing Arts Division: The different regions of the state represent its own vivid culture. The division fortifies the fascinating multicoloured culture and beauty of the region.

Archaeological Division: The Archaeological division is constituted for the archaeological researches and protection of the archaeological heritage of the Himachal Pradesh. Maintenance of ancient monuments and archaeological sites and remains of the state is the prime concern of the State Archaeology.

Archives Division: The Government of Himachal Pradesh constituted eleven members Himachal Pradesh Record Management Committee in 1979 to work out the modalities for the establishment of State Archives. The role of Indian Historical Record Commission and the evaluation of State Administrative bodies to the vanished feudalism ceased monarchies, died down the colonial regime and events of freedom movement were the hallmark in venturing State Archives. Resultantly Archives was no longer a dream term for the scholars in Himachal Pradesh and the dawn of the 19th April 1986 led to the inauguration of Himachal State Archives to amuse the world of scholars throughout the State and outside.

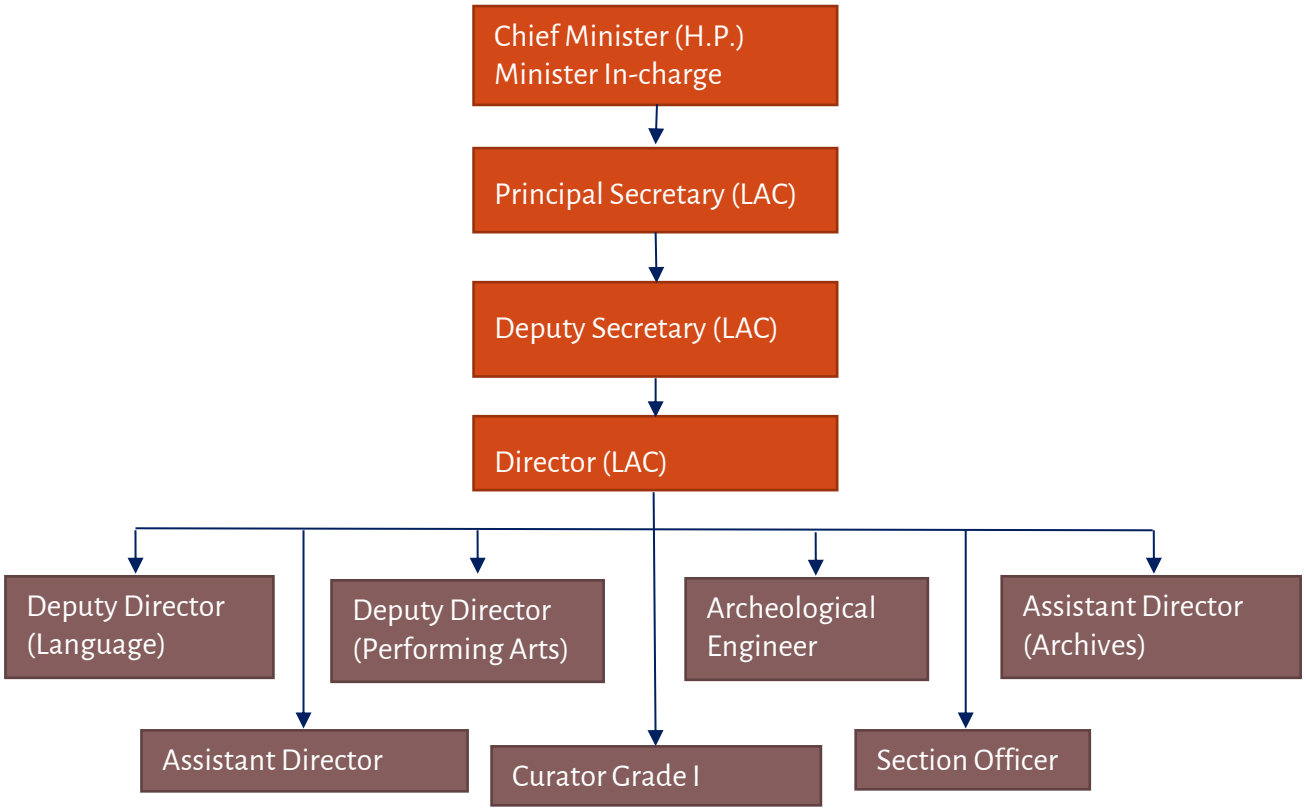
Museums Division: The State Museum Shimla was opened on January 26, 1974, to collect and preserve the ancient artistic, historical, archaeological and ethnological human works in order that the future generation may have access to the cultural treasure it has inherited from the past. Since then the institution

has played a significant role in collecting and preserving the scattered cultural heritage which otherwise was endangered and becoming extinct.

Temple Management Division: Himachal Pradesh is the abode of various famous temples. Jwala Devi Temple, Baba Balak-Nath Temple, Naina Devi, Chintpoorni temple are some of the renowned temples of the state. State Government took over control of the management of these temples under the Himachal Pradesh Public Religious Institutions and Charitable Endowments Act, 1984. 29 temples are included in Schedule-I of the act.

1.1 ORGANIZATIONAL STRUCTURE

Chief Minister of the state is minister in-charge of the department. The organizational set-up of the department is given in figure 1.



Infrastructure and Human Resources

Apart from the Directorate office at Shimla, the department includes 11 field offices at each district and three museums (Shimla, Dharamshala and Chamba) and Gaiety Cultural Complex in Shimla. There are two emergency exits in directorate office. Fire extinguishers are only installed in museums and Gaiety Complex.

Three officials are deputed in each district offices of the department. The number of staff deputed at Shimla, Dharamshala and Chamba museums are 30, 15 and 15 staff respectively. Ten personnel's look after the Gaiety complex.

1.2 PURPOSE OF PLAN

The basic purpose of the plan is to provide guidance to all the agencies within the department to manage the risks of disasters before, during and after disasters with a multi-hazard approach. These include assessing the sectoral and departmental risks of disasters, mitigating the existing risks, preventing the creation of new risks, presenting the status of its preparedness to perform its role and responsibilities as defined in the state DM policy and state DM Plan.

Thus, in case of any eventuality of a disaster, the department must be able to perform its functions without any hindrance and this can happen only when the department specific plan is ready. Some of the purposes of departmental plans are as follows:

- To identify hazards and vulnerability present in the department and its sector.
- To improve the state of preparedness of department to meet any contingency.
- To conserve cultural heritage of the state.
- To develop immediate and long-term support plans.
- Capacity building of the Officers and Staff of department to handle emergencies/disasters effectively.
- Improving risk communication between the local authorities, the private sector i.e. cultural activists and the exposed community (tourists, pilgrims and local population) on local disaster issues to allow better and effective response in a crisis situation.

1.3 SCOPE OF THE PLAN

In accordance with the Disaster Management Act 2005 and Himachal Pradesh Disaster Management Plan 2012, the scope of the plan is to handle certain hazard in the state, which affects the department and its sector as a whole. The DM plan will facilitate the department:

- To take measures for prevention and multi-hazards mitigation by the Departments at the state level as well as local level.
- To reduce response time in organizing the assistance.
- To identify major resources, manpower, materials and equipment needed to make the plan operational.
- Making optimum use of the combined resources to protect and safeguard the cultural heritage of the state under the department.

1.4 AUTHORITIES, CODES, POLICIES

Following are the specific acts and rules for the Department of Language, Art and Culture:

- The Indian Treasure-Trove Act, 1878
- The Antiquities and Art Treasures Act, 1972
- The Antiquities and Art Treasures Rules, 1973
- The Himachal Pradesh Official Language Act, 1975

- The Himachal Pradesh Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1976
- The Himachal Pradesh Ancient and Historical Monuments and Archaeological Sites and Remains Rules, 1985
- The Himachal Pradesh Hindu Public Religious Institutions and Charitable Endowments Act, 1984
- The Himachal Pradesh Hindu Public Religious Institutions and Charitable Endowments Rules, 1984
- The Himachal Pradesh Public Records Act, 2006
- The Himachal Pradesh Public Records Rules, 2008

For the functions related to Disaster management following guidelines are to be followed:

- Disaster Management Act, 2005
- National Disaster Management Plan, 2016
- Himachal Pradesh Disaster Management Plan, 2012
- National Action Plan on Climate Change
- National Guidelines issued by the NDMA
- Guidelines and provision for State Disaster Response Fund (SDRF)
- Guidelines for administration of the National Disaster Response Fund (NDRF)

1.5 INSTITUTIONAL ARRANGEMENTS FOR DISASTER MANAGEMENT

The State Government has adopted the Disaster Management Act 2005 as enacted by the Govt. of India for providing an effective mechanism for Disaster Management in the State of Himachal Pradesh.

1.5.1 STATE DISASTER MANAGEMENT AUTHORITY

As per clause b of sub-section (2) of Section 14 of the Disaster Management Act 2005, the Himachal Pradesh Disaster Management Authority under the chairperson of the Honourable Chief Minister was constituted on 1st June 2007 with the following persons as a member of the Himachal Pradesh Disaster Management Authority (HPSDMA):

Table 1: Members of State Disaster Management Authority

#	Member	Designation in HPSDMA
1	Hon'ble Chief Minister	Chairman
2	Hon'ble Revenue Minister	Co-Chairman
3	Chief Secretary	Member
4	Principal Secy. (Rev)	Member
5	Principal Secy. (Home)	Member
6	Principal Secy. (PWD)	Member
7	Principal Secy. (Health)	Member
8	Director General of Police	Member
9	Secretary/Additional Secretary (Revenue)	Member Secretary

1.5.2 STATE EXECUTIVE COMMITTEE (SEC)

As per sub-section (1) of section 20 of the Disaster Management Act 2005, the State Executive Committee under the chairmanship of Chief Secretary was constituted by the Government of Himachal Pradesh. SEC coordinates and monitors the implementation of the National Policy, the National Plan and the State Plan in addition to management of disasters in the state. It monitors the implementation of disaster management plans prepared by the departments of the Government of the State and District Authorities.

1.5.3 ADVISORY COMMITTEE OF SDMA

As per Sub Section (1) of section 17 of the Disaster Management Act 2005, the chairperson of Himachal Pradesh State Disaster Management Authority nominates members of the Advisory Committee to assist the Authority and to make recommendations of different aspects of Disaster Management.

1.5.4 DISTRICT DISASTER MANAGEMENT AUTHORITY

As per Section 25 of the DM Act 2005, District Disaster Management Authority has also been constituted in every district of Himachal Pradesh which is chaired by the Deputy Commissioner of the district.

1.5.5 DISASTER MANAGEMENT SETUP IN THE DEPARTMENT

Department of Language Art and Culture is a secondary nodal department for festival-related disasters in the setup of the state disaster management.

Er. Sudarshan Kumar Sharma of the department is the nodal officer for the disaster management. The department does not have any separate disaster management cell. The department's officials attend training programmes organized by state government time to time.

In case of an emergency, the department can be contacted on 0177-2626616/2628789.

1.6 PLAN MANAGEMENT (IMPLEMENTATION, MONITORING AND REVISION)

Implementation of the Plan:

Director (LAC) shall be responsible for implementation of the Plan. Appointed Nodal Officer shall coordinate with all stakeholders for implementing the Plan. Annual Progress on implementation of the Plan will be submitted to HPSDMA.

Revision of the Plan:

The Disaster Management Plan is a living document. It will be revised on annual basis as per provisions of the DM Act-2005. Any changes in guidelines under the NDRF and SDRF shall be incorporated in the plan as and when such changes are made. The introduction of new technology for hazard risk mitigation shall also be incorporated as when the same is tested and found feasible and acceptable in particular geographical area of the State.

System of Updation:

The document shall be updated at the Director level with the help of State Disaster Management Authority at least once in a year or as per the requirement. Consultations will be held with the stakeholders for making changes in the Plan. The Nodal Officer shall be responsible for holding consultations and updating the Plan.

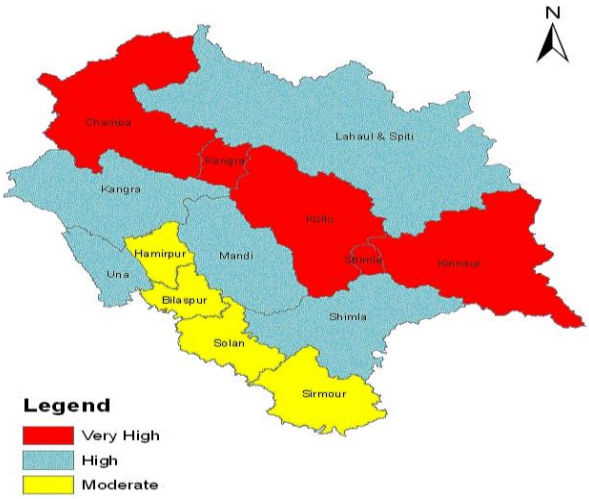
Dissemination of Plan:

After finalization of the Plan, a copy will be submitted to the HPSDMA for approval. After approval, it shall be disseminated to all agencies, field offices and other stakeholders. Further, whenever it revised/updated, it shall be submitted to HPSDMA for endorsement of changes. The revised Plan shall be shared with all concerned.

2. HAZARD, RISK AND VULNERABILITY ANALYSIS

2.1 RISK ASSESSMENT OF HIMACHAL PRADESH

Himachal Pradesh is a mountainous state situated in the western Himalayas with an elevation ranging from 350 meters to 6000 meters. Thus, there is a great variation in the geo-climatic conditions of the state due to the extreme variation in the elevation. The climate varies from hot and sub-humid tropical in the southern tracts to cold, alpine and glacial in the northern and eastern mountain ranges with increasing elevation. These conditions make the state prone to various hazards both natural and manmade. Main hazards consist of earthquakes, landslides, flash floods, snowstorms and avalanches, droughts, dam failures, fires – domestic and wild, accidents – road, rail, air, stampedes, boat capsizing, biological, industrial and hazardous chemicals etc.



The districts of Chamba, Kinnaur, Kullu and part of Kangra and Shimla fall in very high vulnerable risk (Figure 2). Similarly, districts of Kangra, Mandi, Una, Shimla and Lahaul and Spiti fall in high vulnerable risk status. The district Hamirpur, Bilaspur, Solan and Sirmour falls in moderately vulnerable risk status. The disaster management strategies and infrastructure required to be evolved by taking the factor of vulnerability into consideration.

2.2 ASSESSMENT OF SECTORAL AND DEPARTMENTAL RISKS

The sectoral risks of disasters consist of the risks for the entire sector that the department represents. For example, Department of Language Art and Culture may assess the potential risks to archaeological sites, ancient temples, museums, any dialect spoken by very small population due to certain hazard like earthquakes, landslides and floods in the specific region. The departmental risks of disasters consist of the risks arising out of the exposure of vulnerable departmental assets to the natural or manmade hazards.

The impact of disasters on cultural heritage over the past few years in our country has been particularly severe. To illustrate, Kashmir Floods in 2014, flash floods in the lower Himalayas in 2013, Sikkim Earthquake in 2011 and the Bhuj Earthquake in 2001 caused widespread damage to temples, palaces, historic gardens and museums.

Hazards that possess vulnerability to the state of Himachal Pradesh will also be threatening to the sector of LAC and its departmental risks. Some of the hazards, which can be hostile to the sector of the department, are discussed below:

2.2.1 EARTHQUAKES

Himachal Pradesh is seismic sensitive state as over the years a large number of the damaging earthquake has struck the state and its adjoining areas. Large earthquakes have occurred in all parts of Himachal Pradesh, the biggest being the Kangra earthquake of 1905. The Himalayan Frontal Thrust, the Main

Boundary Thrust, the Krol, the Giri, Jutogh and Nahan thrusts are some of the tectonic features that are responsible for shaping the present geophysical deposition of the state. Chamba, Kullu, Kangra, Una, Hamirpur, Mandi and Bilaspur Districts lie in Zone V i.e. very high damage risk zone and the area falling in this zone may expect earthquake intensity maximum of MSK IX or more. The remaining districts of Lahaul and Spiti, Kinnaur, Shimla, Solan and Sirmour lie in Zone IV i.e. the areas in this zone are in high damage risk with expected intensity of MSK VIII or more.

Earthquakes can be destructive to archaeological sites, ancient temples and museums. It can be a cause of extinction of any dialect if an earthquake strikes the population of a particular dialect.

2.2.2 LANDSLIDES

Landslides are one of the key hazards in the mountain regions particularly in the state of HP which cause damage to infrastructure i.e. roads, railways, bridges, dams, bio-engineering structures, and houses but also lead to loss of life, livelihood and environment. According to the analysis carried by TARU in 2015, 6824 villages of the state falls under high landslide risk zone whereas 11061 villages are in the medium risk zone. 824 villages are in the low-risk zone of landslides.

Demolition of archaeological sites, ancient temples and museums, which are established in landslide-prone areas.

2.2.3 FLOODS

In Himachal Pradesh, flash flood due to cloudburst is common phenomena. The state experiences riverine flooding of varied magnitude almost every year and Sutlej and Beas are most vulnerable rivers. All the villages and property inside the floodplain and near close vicinity are in the vulnerable zone. According to TARU report (2015), about 59 villages in Beas basin and 280 villages in Sutlej basin are potentially at risk due to inundation caused by river flooding.

Floods / flash floods are threatening to the population preserving the cultural legacy of their ancestors, archaeological sites, ancient temples and museums.

2.2.4 FIRE ACCIDENTS

Like natural calamities, fires are a big threat and cause loss to human life and property. Any devastating incident of fire in historical place can lead huge loss to the cultural heritage.

2.2.5 FOREST FIRES

Forest fires are an annual and widespread phenomenon in the state. Most fires are witnessed during summers when the forests become littered with dry senescent leaves and twinges thereby increasing the probability of starting and spreading of fire. According to TARU report (2015), 11720 sq. Km area of the state comes under very high vulnerability for forest fires. 9891 sq. Km of falls under the high-risk zone of a forest fire.

Any archaeological sites, ancient temples or any other monuments of historic importance can be vulnerable to forest fire if situated in high vulnerability areas.

2.2.6 CLIMATE CHANGE

Climate change refers to a statistically significant variation either in the mean state of the climate or in its variability, persisting for an extended period (typically many decades or longer). Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. The long-term trends in observed seasonal precipitation and temperature over Himachal Pradesh using IMD gridded rainfall and temperature at daily time scales has been performed to arrive at current baseline climatology for the state. IMD gridded data was used for Climate change hazard risk analysis.

- The PRECIS data on precipitation, maximum and minimum temperature have been analysed for Himachal Pradesh by TARU. Preliminary inferences on the variations of these entities show that the annual maximum temperature is projected to increase by 1.90°C and annual minimum temperature by 2.30°C towards mid-century. This change in temperature is going to harm the apple produce, crop production etc. in the region; which will further affect the livelihood of the rural population per se.
- It is also seen from the INRM analysis that cold spell duration indicator is projected to decrease and warm spell duration indicator is projected to increase for all the districts, implying warming up over Himachal Pradesh districts. The warming up of the entire state will further result in a change in cropping patterns too. Certain schemes of rural development department need to be modified to help the community during these times.
- The increase is projected for average annual rainfall by 15.0% and 28.0% respectively for mid and ends century scenarios. Mean monsoon rainfall increases by 182 mm by mid-century and by 384 mm by end century. This huge increase will have a severe impact on the entire sector. Because with an increase in rains there are chances for a hail storm, flash floods that can affect the infrastructure constructed by the department.
- It is also projected that heavy and very heavy precipitation day for all the districts in Mid Century and End Century compared to the Base Line are going to increase implying that count of heavy rainy days would increase in the future. Increase in the count of very heavy precipitation days is expected to be the maximum for Salon, Bilaspur and Kangra of Himachal Pradesh districts. These heavy rains again will have a devastating impact on the infrastructure related schemes and schemes which try to alleviate poverty from the region.

Changing climate has potential to exacerbate the index of vulnerability of hazards. Climate change can adversely influence the historic records and monuments.

2.2.7 STAMPEDE

The State is known as the land of Gods. Many famous temples are located in the State such as Sri Naina Devi, Baba Balak Nath, Sri Chintpurni, Maa Jawalaji, Maa Braheswari and Sri Chamunda Nandikeshwari Dham to name a few. A large number of devotee's throng these places every year. A human stampede at the temple of Naina Devi occurred on 3 August 2008. 162 people died when they were crushed, trampled, or forced over the side of a ravine by the movement of a large panicking crowd. The possibility of such instances is always there if there is any laxity on the part of the management.

The hazards, which increase the vulnerability of Department of Language, Art & Culture and hamper the functioning of the department, are discussed in table 2.

Table 2: Hazards Vulnerability of the Directorate

#	Hazard	Risk
1	Earthquake	**Very High Risk**: Limited awareness, preparedness and structural weaknesses of the buildings reveal very high vulnerability to the earthquake.
2	Flood	**High Risk**: Topography of Himalayan river valleys, glacial fed rivers, can cause destruction to departmental assets.
3	Cloudburst	**High Risk**: Impact of cloudburst is dual. It leads to landslides and flash floods.
4	Landslide	**High Risk**: Landslides pose risk to buildings and disruption in road and communication network. Landslides also choke rivulets and form temporarily lakes. When these lakes burst causes flash floods.
7	Fire	**Medium Risk**: Fire can destroy the historic records of the department.

2.3 ASSESSMENT OF CAPACITY GAPS AND NEEDS

The department should also make a critical assessment of their capacity for disaster risk management. The gaps identified in the existing capacity of LAC are:

- Officers and staff are lacking in the basic knowledge of disaster management and response.
- Department also needs to establish a monitoring mechanism at sites of historic importance to check the Disaster management plans.
- The human resource of the department needs training on certain mitigation measures.
- Adequate financial powers need to be vested with the different level of the department to manage the crisis and setting up of adequate safety measures in the premises, such as Disaster Preparedness Kit, Fire Extinguishers etc.

3. RISK PREVENTION AND MITIGATION

3.1 RISK PREVENTION

Risk prevention is preventing the creation of new risks of disasters. Such risks may be created unwillingly by the Departments directly through public investments or indirectly through the facilitation of private investments that are vulnerable to the risks of disasters. Therefore, every investment should go through HRVA to check if new programmes, activities or projects have the potential to create new risks of disasters. If such investments cannot be avoided these must be protected by safeguards through adequate structural and non-structural prevention measures so that the benefits of investments are fully protected from risks of disasters.

Some of the preventive measures that can be taken by the LAC department are:

- Installation of lightning arrester in the Monuments and Fire Extinguisher system, barrier-free for easy asses of physically challenged people.
- Adequate entry and exit path in the buildings of the Department.
- State Level sensitisation training-cum-awareness programme for the staff of LAC Department such as Monument attendants, Temple Administration, Temple Trust/Committee and all stakeholders for better supervision, monitoring, preventive and proactive measures with the help of HPSDMA.
- To organise sensitisation training programme for cultural activists and stakeholders. The different Cultural programmes\Schemes could be used for reduction of vulnerability of the resources of the Department.
- To organise Community Based Awareness Training Programme in the areas where cultural/archaeological property is located.
- Involve and train the NGOs to manage the situation effectively.
- New constructions, additions, modifications and retrofitting should be regulated as per standard by laws/building codes.
- Heritage impact assessment exercises should accompany new development, redevelopment, regeneration, infrastructure provisions, etc., in order to ensure that vulnerability of heritage sites are not increased due to changes in the surrounding settlement.
- All publicly administered heritage sites must strive for universal access to visitors. This means making the building and facilities accessible to differently abled visitors and at-risk groups including elderly and young children.

3.2 RISK MITIGATION

Risk mitigation is reducing the risks of disasters that are already there due to exposure of vulnerabilities to the hazards. Mitigation projects reduce the level of exposures or the depth of vulnerabilities or both through a combination of various structural and non-structural measures. Mitigation projects are always costly and therefore these have to be planned with proper Cost Benefit Analysis (CBA) to ensure that the benefits of the projects outweigh the costs. Structural mitigation refers to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Non-structural mitigation refers to policies, awareness, knowledge development, public commitment, information sharing which can reduce risk.

The primary objective of mitigation efforts would be:

- To identify, delineate and assess the existing and potential risks and to work towards reducing potential causalities and damage from disasters.
- To substantially increase public awareness of disaster risk to ensure a safer environment for communities to live and work.
- To reduce the risks of loss of life, infrastructure, economic costs, and destruction that result from disasters.

In view of the prevailing risk and the vulnerabilities perception, the mitigation measures proposed have been categorized under following five major groups:

- **Risk assessment:** Risk information should be provided to concern stakeholders on time and for that, the department should do a proper risk assessment.
- **Construction work:** All the newly constructed assets or any other retrofitting work should follow the building by-laws of the state.
- **Repair and maintenance:** Retrofitting and renovation of the lifeline buildings should be done by the department.
- **Research and technology transfer:** The department should identify and interact with research institutions to evolve mitigation strategies both structural and non-structural.
- **Training and capacity building:** Training programs about the awareness of disaster with respect to cultural heritage.
- **Communication arrangements:** A good communication system is a prerequisite in the disaster mitigation.

3.3 MATRIX OF HAZARD SPECIFIC MITIGATION MEASURES

HAZARD	MITIGATION MEASURES	
	STRUCTURAL	NON-STRUCTURAL
Earthquake	• Undertaking mandatory technical audits of structural designs of infrastructure (temples, museums, archaeological sites) under department by the competent authorities. • Retrofitting and reinforcement of old and weak structures. • Assessing the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical structures.	• Seismic hazard risk mapping pertaining to departmental assets. • Developing appropriate risk transfer instruments by collaborating with insurance companies and financial institutions.
Floods, Flash Floods and GLOF	• The department should demarcate the flood-prone area and no construction should be done there.	• Flood mapping pertaining to departmental assets. • Mitigation plan should be in place to safeguard the departmental

	• Open space for emergency construction of sheds etc. shall be left to the extent possible	infrastructure/ inhabitants from the flash flood.
Landslides / Avalanches	• Risk audit of the department infrastructure at all levels. • Selecting alignments for construction of structures in rural areas which are less prone to landslides. • Activities to mitigate the landslide such as plantation, afforestation, check dams, contour trenches, contour bunds and gabion structures should be taken up.	• Landslide hazard risk mapping. • Developing an inventory of the existing built environment in areas around existing landslides and in high hazard zones as per the LHZ maps and along strategic roads.
Fire	• Open space for emergency exit in the case of fire. • Fire extinguishers should be installed in all the office buildings. • Replacement of dilapidated Electrical wires.	• Fire safety mock drill.
Stampede	• Proper entry and exit routes.	• Capacity building of temple management staff.

3.4 STRATEGIES FOR RISK PREVENTION AND MITIGATION

3.4.1 EARLY WARNING SYSTEM FOR METEOROLOGICAL DISASTERS

Forecasting and early warning help in mitigating the effects of disasters. The loss of life and property can be considerably reduced with an accurate and timely warning. A climate-meteorological disaster such as flash floods/cloudburst/snow avalanches etc. can be predicted with a certain degree of accuracy.

- A network of rain/snow gauges would be strengthened in the information.
- The tie-up with weather reports, IMD would be strengthened so that EWS can be effectively communicated to the vulnerable areas.
- Modern media would be utilized to communicate the EWS.
- Tie-up for sharing of information would be done with the other institutions.
- ICT tools need to be used for data receptions, forecasting and timely dissemination.

3.4.2 COMMUNICATIONS AND INFORMATION TECHNOLOGY (IT) TOOLS:

Use of modern communication and information technology tools is crucial for effective and efficient disaster management. The communication and IT tools would be utilized for compiling of information, dissemination, and for the spread of forecasting and early warnings.

The digital mapping of resources would be done and the same would be hosted in web-based portals for easy access and retrieval. These tools can be used in the following areas:

- Creating decision support system for the policy makers, disaster managers and responsible officers at all levels.
- Real-time dissemination of early warning to the all the stakeholders etc.
- Information and broadcasting mediums such as television, radios, FM stations etc. can be used keeping in view their geographical reach and availability.
- Emergency communication system during disasters.
- Collecting information on damage and needs assessment.

3.4.3 ASSESS ALL RISKS AND THREATS TO THE TANGIBLE HERITAGE:

The aim of this step is to become familiar with any risks — both external and internal, posed to heritage and its collection, and to understand what effect they would have on your heritage building should those risks become real events. A clear understanding should follow regarding those risks that pose the greatest threat to the heritage building, and those with least likelihood of occurring.

Tasks:

1. Review history of disasters in heritage and community.
2. Identify all risks to your building and collection.
3. Rate all risks according to probability and impact on collection. Risk assessment, or analysis, is an area that has received much attention in recent years, particularly with regard to applying its principles to heritage management and disaster preparedness. In the case of disaster preparedness for a tangible heritage building, it is relatively straightforward. Once a comprehensive assessment of all possible risks to the heritage buildings is completed, the likelihood, or probability, of those risks occurring must be rated. The impact, or damage, on the collection of each of those risks, is then estimated and given a rating. The combination of these two ratings will provide an overall numerical rating of each risk — putting it in the category of a high, medium, or low risk. This, in turn, will guide to what risks you prepare for first, if at all. It will also allow prioritising the actions required to remove or reduce those risks, leading to a well-developed action plan for the heritage buildings. While this process may feel arbitrary (how can you really know whether a bomb threat is a high or low risk, or what impact an earthquake would have on your collection?) and an estimation, at best, remember it is meant to act as a useful tool to help you prioritise your planning and disaster preparedness actions.

4. MAINSTREAMING DISASTER RISK REDUCTION IN DEVELOPMENT

Mainstreaming disaster management into the development planning process essentially means looking critically at each activity that is being planned, not only from the perspective of reducing the disaster vulnerability of that activity but also from the perspective of minimizing that activity's potential contribution to the hazard.

Several policies and programs are going on under the LAC department. The department should include the Disaster risk reduction policies with development programs which are going on. For example, LAC department gives funding for the conservation of local folk music and activities related to that. People perform songs, folk dance etc. during cultural festivals. Department can include disaster risk reduction programs in these cultural festivals.

LAC department gives funds for the conservation of archaeological sites, this fund can also be utilized with the disaster management point of view to conserve those sites which are at high risk. For example, famous tower of Chehni Kothi in Banjar valley is in the pathetic situation and local people are taking care of that. This tower can be conserved under the departmental development program.

4.1 MAINSTREAMING DRR INTO DEVELOPMENT

The best way to ensure that DRR is mainstreamed into the development projects is to integrate this into the Project Cycle Management (PCM). PCM is the process of planning, organizing, coordinating, and controlling of a project effectively and efficiently throughout its phases, from planning through execution, completion and review to achieve the pre-defined objectives at the right time, cost and quality. There are six phases in PCM - programming, identification, appraisal, financing, implementation and evaluation. The first three phases are the initial planning phases of the project which provide key entry points for mainstreaming.

Mainstreaming DRR into development activities has three purposes:

- To make certain that all the development programmes and projects that originate from or funded by Government are designated with evident consideration for potential disaster risks to resist hazard impact.
- To make certain that all the development programmes and projects that originate from or are funded by Government do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment.
- To make certain that all the disaster relief and rehabilitation programmes and projects that originate or are funded by Government are designed to contribute to development aims and to reduce future disaster risk.

4.2 APPROACHES FOR MAINSTREAMING

There are three suggested approaches of mainstreaming disaster management into the development process and disaster management plans-

1. Structural Measures
2. Non- Structural Measures
3. Disaster Mitigation Projects

Based on the suggested approaches the specific action would involve:

- Adopting a Sectoral approach and identification of Key sectors for mainstreaming.
- Within each sector, key programmes/projects would have to be identified.
- This has to be followed by identifying the entry points within the programmes/projects for integration.
- It would also involve work at the policy and planning level be it national, state and district level.
- It would also need a close coordination with State Planning Commission and Finance Department for promoting DRR into all development programmes and involve working with different departments to mainstream DRR into the Departmental Plans and policies.
- Advocacy would have to be done for allocation of dedicated budget for DRR within the departmental plans.

5. DISASTER PREPAREDNESS

Disaster preparedness has been defined as "the state of readiness to deal with a threatening disaster situation or disaster and the effects thereof". Disaster preparedness includes a standard operating procedure to be adopted by the department in case of any hostile situation. The plan also states the roles and responsibilities of officials and staffs in emergency and available resources, training, and authority to undertake their duties and responsibilities.

5.1 PREPAREDNESS PLAN

Preparedness is the process, which lays the groundwork for the operation, setting the right response to an emergency; it is an ongoing, dynamic process and should include analysis of problems and resources needed to solve them. Planning needs to contain and regulate all specific plans for the different sectors, institutions and bodies involved and these need to coordinate amongst themselves to find joint initiatives and set targets.

The preparedness measures for the Department of Language, Art and Culture are as following:

- A safety audit of the departmental buildings, museums and temples.
- Initiate and make a plan for Structural and Non-structural retrofitting measures of the buildings.
- A comprehensive plan for emergency response including evacuation, immediate response protocols and procedures, etc., that take into account the specific challenges presented by the site (archaeological .museum, temple).
- Identification of various kinds of emergency supplies and equipment and their storage for ease of access.
- Monitoring is an integral part of overall conservation and maintenance of heritage and is a useful tool in disaster risk mitigation. Hence, monitoring of the physical condition of the departmental buildings, museums, temples and other historic sites is prerequisite.
- A first aid kit in the office and training programs of basic first aid.
- A disaster day or week can be celebrated to generate awareness.

5.2 STRATEGIES OF DISASTER PREPAREDNESS

Himachal Pradesh is very much seismicity active and most of the areas of the states lies in Seismic Zone IV and in Zone V. Build an environment in the state are not earthquake resistant which will lead to a large number of injuries, loss of life, and damage to infrastructure. In recent time, unplanned development in the state led to landslide incidents, which can cause loss to infrastructure and damage to the road networks. Hence, disaster preparedness becomes an important component in DM cycle.

Disaster Preparedness Strategies are given below:

5.2.1 CAPACITY BUILDING

To build sufficient capacities within the department staffs and other stakeholders to be able to better perform their roles and responsibilities for disaster risk reduction and emergency response and achieving desired objectives.

Actions required are:

- Maintain the database of all resources (Human, Programs, Finances and Materials) of the department that could be used for disaster risk reduction and emergency response activities.
- Coordinate with SDMA, DDMA and other agencies for the nomination of the department staff in the specialist training being organized from time to time by different agencies.
- Analyse past experiences of the Department to know what went well and what could have been done better for risk reduction and emergency response by the department. Document it as lessons learnt annually and after every disaster.
- Develop a minimum inventory list required for achieving desired performance standards and develop a plan to acquire it over next few years.
- Create a mechanism for regular inspection and maintenance of equipment and acquisition of new equipment as per your minimum inventory list for disaster risk reduction.

5.2.2 REGULAR MOCK DRILLS

Regular drills should be conducted in collaboration with the State Disaster Management Authority or DDMA at the district level.

Actions required are:

- Organize periodic mock drills of the Departmental Staff and key stakeholders for different contingency situations.
- Take part in block and district level mock drills and capacity building programs organized by District authorities from time to time.

5.2.3 INSTALLATION OF ADEQUATE FIREFIGHTING EQUIPMENT

And testing of the already installed equipment

It is quite essential that adequate firefighting equipment may be installed in the building as per the standards of the Fire Fighting Department and the already installed equipment & apparatus may be tested on regular basis.

5.2.4 INSTALLATION OF EVACUATION ROUTES & MAPS AND OTHER TOOLS

It is required to install signboards depicting exit routes in various parts of the building to help people navigate easily in exigencies. Such signboards are to be installed in corridors and pathways. Apart from above, ladders, ropes and first aid boxes are to be arranged.

5.2.5 PREPARATION OF CONTINGENCY PLAN FOR DEPARTMENT

There should be a contingency plan of department i.e. how department responds and recover from a disastrous event.

Actions required are:

- All offices under the department will prepare office disaster management plan.
- All new building to consider HRVA report of the state/district.
- Define Rules and regulations for the functioning of the department especially during disaster time.
- All department staff shall nominate his/her colleague to take on the additional activities of his/her buddy, in case of any eventuality and/or absence of the member.
- Define protocols for normal time activities in non-affected areas and emergency activities in disaster-affected areas, sharing of the workload for above arrangement, special measures like additional budgets, and human resources during an emergency event.
- Identify safe building/location for operational work and meetings of the key department staff, if the department offices and working premises become inaccessible due to disaster.
- Secure important files and information of the department. Create backups, wherever possible.
- Develop a mechanism for quick sharing of information among department staff. If working on mobile networks, develop alternative mechanism/s for the exchange of information especially during emergencies like Ham radio, community networks etc.

5.2.6 AWARENESS PROGRAM

Awareness Program for cultural heritage safety and safe practices should be conducted time to time.

5.2.7 EMERGENCY PREPAREDNESS

To identify potential emergency situations and be prepared for the response.

Actions required are:

- Identification of potential emergency situations.
- Refer to contingency specific action plans for the same.
- Identifying the buildings, those are vulnerable to flood, earthquake, water logging and developing the plan to avoid any damage to the building.
- Identification of the safe building (Govt.) at Panchayat and block levels which can be used as emergency shelter during the disastrous situation.

6. DISASTER RESPONSE AND RELIEF

6.1 RESPONSE PLAN

The response plan of the Department includes the design of actions based on Standard Operating Procedures and tested through mock drills and exercises that would be initiated on a trigger mechanism based upon the impending or actual occurrence of an event of a disaster. Many Departments and agencies of the State Governments will be required to perform important functions relating to relief and rehabilitation. The response plan of the Department should provide detail with the logistic, financial and administrative support necessary for discharging these functions and the manner in which these functions shall be discharged.

The following aspects should be taken into consideration while developing response plan:

- Creating an emergency team that includes the management, administrators and staff of the department as well as representatives from local stakeholders where applicable. This emergency team should have a clear chain of command and be in direct contact with the various departments dealing with different kinds of emergencies. The emergency team should be trained in basic first aid and emergency response and their names, designations, responsibilities etc., should be clearly communicated to the general public.
- Identification of evacuation routes, spaces that may act as temporary refuge areas, and display these routes and spaces in a clear manner as signage, maps, printed literature, etc., for wide distribution.
- Identification of routes and locations for emergency services including local police stations, hospitals, fire stations, DDMA and other emergency services. The emergency plan and evacuation plan for museums, temples and archaeological sites should be linked with the neighbourhood level and district level plans (if they exist).
- Identification of various kinds of emergency supplies and equipment and their storage for ease of access should be undertaken.

6.2 EMERGENCY SUPPORT FUNCTION

A disaster response team should be constituted within the department. They should be given specified duties and meet regularly to review the situation in the institution. A brief summary of individual duties and responsibilities in the Emergency Preparedness and Response Program is given below:

Director	• Sets emergency program policy • Appoints Emergency preparedness manager (EPM), Emergency preparedness committee (EPC) and Emergency response coordinator (ERC) • Appoints communications coordinator, if necessary • With EPC, does initial vulnerability assessment • Establishes budget for program • Continues to act as liaison between EPM and HPSDMA • Oversees development of list of resources (agencies, organizations, local police / fire departments, other cultural institutions)

	• Oversees and guides involvement of community and media in the planning process
Emergency preparedness manager (EPM)	• Works with director to appoint EPC, ERC, and communications coordinator • Heads EPC • Works with EPC to appoint departmental teams and team leaders • Organizes and conducts staff drills • Keeps director up to date on progress • After disaster occurs, holds post-mortem review meetings
Emergency preparedness committee (EPC)	• Oversees departmental teams and team leaders • Works with EPM, ERC, and team leaders to select response teams • Develops list of resources (agencies, organizations, local police / fire departments, other cultural institutions); establishes relations with such resources • Involves and establishes contacts with community and media • Uses initial vulnerability assessment to identify potential hazards • Distributes hazard data to departmental teams for development of detailed vulnerability and asset assessment report • Keeps EPM up to date on teams' progress • Implements preventive / preparedness measures as recommended by departmental teams • Develops response plan and recovery plan based on information from departmental teams • Writes and distributes the emergency plan
Emergency response coordinator (ERC)	• Works with EPM, EPC, and team leaders to select response teams • Implements preventive / preparedness measures as recommended by departmental teams • During a disaster, sets up and runs emergency command centre
Departmental preparedness teams	• Four teams: safety / security, collections, buildings / maintenance, administration / records • Each consists of 2 teams: preparedness team and response team • Each preparedness team submits 2 reports to EPC: (1) vulnerability / asset assessment and (2) outline of response procedures • Response teams contribute to the departmental preventive-preparedness measures, response plan, and recovery plan • All information and data are submitted to EPC for inclusion in the emergency plan

6.3 RELIEF AND REHABILITATION

Relief measures will vary with the nature and degree of natural calamity. Information of the amount of damage done will help in deciding the extent of relief, reconstruction or rehabilitation. The detailed loss of

life and property will be assessed immediately after the completion of relief and rescue operations. The following measures may require being taken in the event of a calamity:

- Standardised procedures and methodologies for carrying out post-disaster documentation and assessment
- The losses to the buildings, museums & temples will be reported on the prescribed formats as per guidelines.
- Standard reporting format for damage reporting during monsoon or any other occasion.
- Damage assessment and compiling the total losses due to disaster should be communicated to local stakeholders, management and possible funding or donor agencies in a clear and effective manner so that planning for recovery can be undertaken in an efficient and transparent manner.

Rehabilitation Plan:

Following measures will be taken as part of rehabilitation in the post-disaster phase:

- A team of professionals will be deployed to rescue all the artefacts or valuable items from the cultural heritage sites.
- Take the items in safe custody.
- Take pictures of artefacts and damaged valuable cultural heritage buildings.
- Pack all valuable items with the tracking id and photo.
- Create tracking forms to fill by a person who moving the items to avoid duplicity and theft.
- Move items to a safer location.

7. DISASTER RECOVERY AND RECONSTRUCTION

7.1 DISASTER RECOVERY

The process of recovery from small-scale disasters is usually simple. Recovery operations get completed almost simultaneously with the response, relief and rehabilitation. However, in medium and large disasters involving widespread damages to infrastructure, the process of recovery may take considerable time. Therefore, some of the Emergency Support Functions of recovery of the sector may continue for months.

7.2 DISASTER RECONSTRUCTION

Post-disaster construction provides an opportunity for 'Building Back Better' so that the reconstructed assets are able to withstand similar or worse disasters in future. It is difficult to anticipate such reconstructions as these would depend on the types and location of the disasters and the nature reconstructions to be made, which would be known only after the disasters.

Reconstruction is time and funds absorbing phase of disaster management. The construction department will be persuaded to include disaster resilient features in new constructions. Reconstruction programmes will be within the confines and the specification as laid down by the by the government known as National Building Codes.

Following steps will be undertaken in the post-disaster reconstruction phase:

- Analyse the damage assessment and recovery package announced by the government.
- Implement recovery plans.
- An approach of minimal intervention should be undertaken for sites of historic and archaeological importance and any intervention should be based on sound documentation and research.
- As far as possible, traditional skills and technologies where they still exist should be employed in the repair and restoration of damaged structures. This helps ensure continuity of building and crafts traditions.
- Ensure the departmental resources like equipment construction material, building resource material, finances etc. used for the emergency purpose are accounted and recouped as soon as possible.
- Support recovery and rehabilitation efforts to help communities recover from the disaster impact and in build back better.
- Incorporate lessons learnt into future planning and preparedness actions.
- Mainstream DRR into New Development Programs and refer to DRR actions to minimize future risks.

8. FINANCIAL ARRANGEMENTS

Section 40(2) of the Disaster Management Act stipulates that every department of the State Department while preparing the DM Plan, shall make provisions for financing the activities proposed therein.

Normally the funds required for risk assessment and disaster preparedness must be provided in the budgets of every concerned department. Such funds are not very sizeable and departments should be able to allocate such funds within their normal budgetary allocations. **Here the idea is to come up with a separate disaster management budget head within the budget allocation of the department.** This budget can be used to work upon the already suggested mitigation and preparedness measures, as response and relief are already being taken care of by the SDRF and NDRF.

NOTES