DISASTER MANAGEMENT PLAN

DEPARTMENT OF ANIMAL HUSBANDRY

GOVERNMENT OF HIMACHAL PRADESH

CONTENTS

1. INTRODUCTION

1.1 OVERVIEW OF THE DEPARTMENT

Animal husbandry and Dairying activities continue to be an integral part of human life. As a sequel to the age-old practices and dependence of population on livestock, Himachal Pradesh has been endowed with a large livestock population. A brief look at the 19th Livestock Census 2012 demonstrates the richness through the numbers, the total population of livestock in the state is 48,44,431. Out of which 21,49,259 are cow cattle, 7,16,016 are buffaloes, 8,04,871 are sheep, 11,19,491 are goats and 15,081 are horses' population. Also, poultry population of the state is 11,04,476.

When Himachal Pradesh came into existence, it had only 9 Veterinary hospitals and only indigenous animals were being reared. In 1948, separate Animal Husbandry Department was established and programs for increased milk production and breed improvement were taken in hand in a big way to meet the day to day requirement of increasing human population and to boost the rural economy. In 1951 up-grading program of cows was started under the All India Key Village Scheme and two key village centres at Kotgarh and Solan were started, where Red Sindhi bulls were located for the crossbreeding program. The impact of this program was quite encouraging but the coverage was very limited. Subsequently, artificial insemination was started in 1954-55 by transporting Jersey semen from Bangalore to Himachal Pradesh.

During this period, new cattle breeding farm was also started at Kothipura in Bilaspur district and Jersey animals received from Denmark were maintained at this farm where their performance was quite encouraging. The real breakthrough in the cattle breeding programme was achieved with the implementation of the Indo-New Zealand Livestock Improvement Project under which 175 pure Jersey animals were brought from New Zealand in 1974, which formed the nucleus foundation stock of jersey herd at Palampur on the University campus. Apart from this, the Frozen Semen Laboratory was also established in collaboration with the New Zealand Government and another with the assistance of the West Germany Government at Bhangrotu, District Mandi during 1974. Both these Laboratories acted as a pacesetter for intensifying the A.I. programme in the State.

Mandate of the Department

- To provide necessary assistance in ensuring the protection of animal stock of the state.
- To develop strategy and plan for animal-related issues vis-à-vis disasters.
- To control & check any outbreak of epidemics.
- To make an inventory of all veterinary centres and assess their capacity to handle a disaster situation.
- To develop a protocol for disposal of bodies of dead animals.
- To bring improvement in production of livestock products by crossbreeding and conservation of indigenous livestock under cattle and buffalo development, Sheep development, Angora Rabbit development, Poultry development.
- To improve the nutritional status of animals.
- To manage fodder assessments, supply and management during disasters.
- To train and demonstrate in scientific livestock rearing.

Achievements

From just 9 veterinary hospitals in Himachal Pradesh in the initial period of its formation, now the total number of veterinary hospitals has gone up to 284. Also, there has been an increase in the number of animal dispensaries and veterinary polyclinics whose number has reached 7 by March 2015.

Apart from these achievements, there have been many programs to develop the state of animal life in the state. For example, sheep and wool development programs, seed and fodder development programs, and others like horse breeding programs, yak breeding programs etc. Further, to encourage cross-breeding program in the state 2 high-level sperm stations have been set up along with 7 sperm banks. Thus with the availability of this service 2399 animals have been artificially impregnated all over the state.

The total number of sheep in the state has gone up to 8.05 lakh which is a third highest number in the cattle population. In addition to this 9 new centres for expansion of sheep population and development of wool have also come up in the state.

Furthermore, to promote animal husbandry and well-being of animals in the state various government schemes have been implemented like, Milch Animals Insurance Policy, 'Kendriya Bhed Palak Yojana', 'Dudh Ganga Yojana', 'Ekikrut Dudh Vikas Yojana' etc

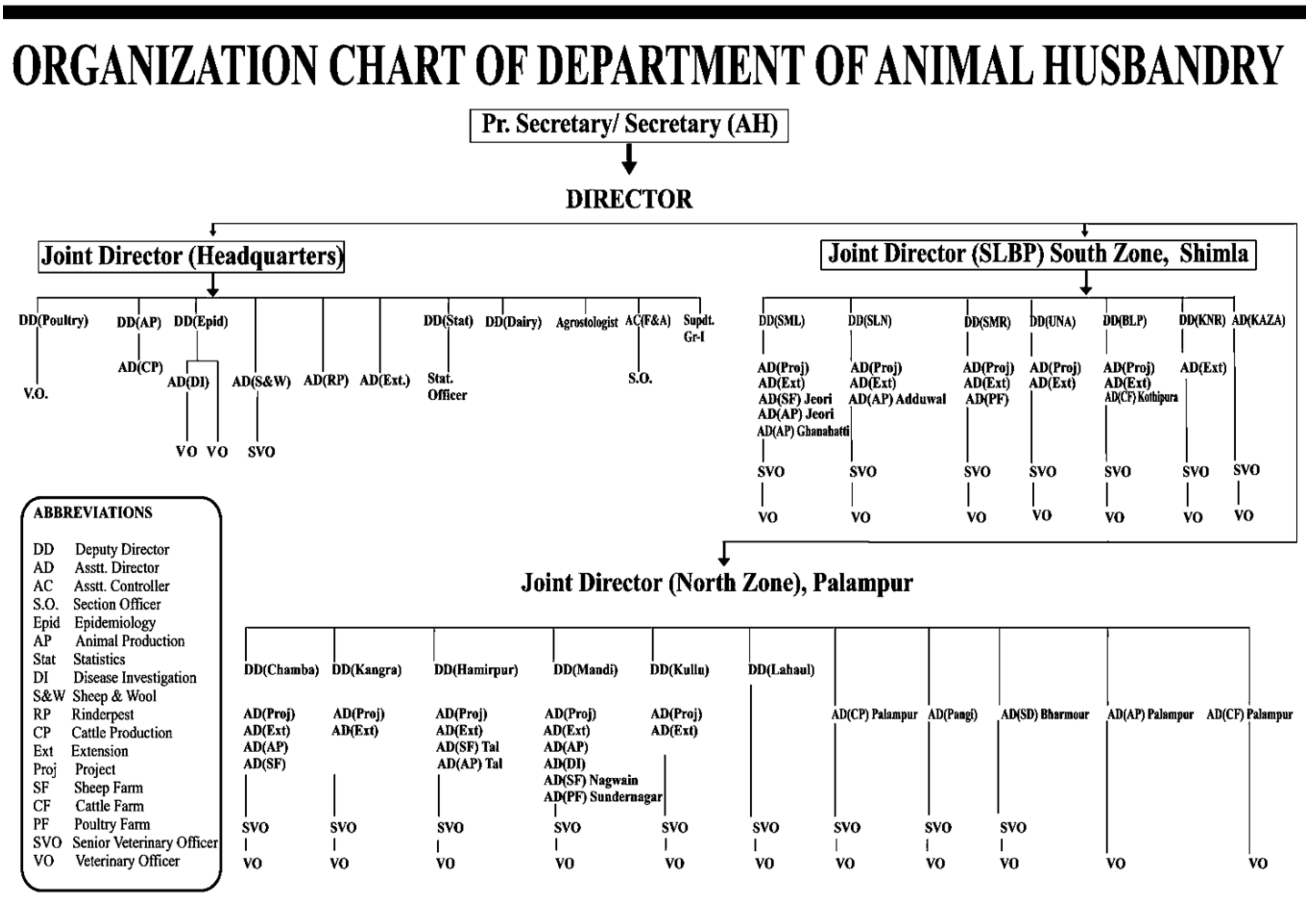
Organizational Structure

The department is under the overall charge of the Minister for Animal Husbandry. And the overall administrative charge of the department is the Secretary. The secretary is assisted in his duties by the Director, Animal Husbandry and other joint directors of headquarters, north zone and south zone. Further, the hierarchy of the department includes various officers like the deputy director, assistant director, assistant controller and the section officers to name a few.

The department is responsible for matters relating to livestock production, preservation, protection and improvement of the stocks. The department plays a crucial role in the formulation of policies and programs in the field of animal husbandry. The main focus of the activities is on -

- Development of requisite infrastructure in the state for improving animal productivity;
- Promoting infrastructure for handling, processing and marketing of milk and milk products;
- Preservation and protection of livestock through the provision of healthcare.

The organisational chart of the department is as follows



1.2 PURPOSE OF THE PLAN

Every department of the State Governments is legally mandated under Section 40 of Disaster Management Act 2005 to prepare its disaster management plan in accordance with the guidelines laid down by the State Disaster Management Authority. The Act stipulates that while preparing the plan, every Department shall make provisions for financing the activities specified therein. The plan shall be reviewed and updated annually and a report on the status of implementation of the plan has to be furnished to the State Executive Committee.

The main purpose of the plan is to provide guidance to all the agencies within the department of animal husbandry 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 the 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. The department is the primary agency to deal with animal-related epidemics, which include prevention, mitigation and response measures to be undertaken as needed. Also, it is responsible for fodder assessments, supply and management during disasters and disposal of dead animals.

The objectives of the disaster management plan are as under: -

- To identify hazard risks for the department.
- To bring together the information related to the equipment, machinery, skilled manpower and critical supplies.
- To know the standard operating procedures of the department at the time of disaster.
- To define the role and responsibility of each and every officer for disaster preparedness.
- To assess its own capacity in terms of available resources and get ready to mitigate any unexpected disaster effectively and to prevent the loss of human lives and property through preparedness, prevention and mitigation of disasters.
- To assist the line departments, block administration, communities in developing skills for disaster preparedness and management.
- To disseminate factual information in a timely, accurate and tactful manner so that the losses can be prevented.

1.3 SCOPE OF THE PLAN

Department of Animal Husbandry has the primary responsibility to look after the welfare of animals, in post-disaster situation treatment of animals, provision of vaccination and disposal of dead animals. However, the sector of animal husbandry is also affected by earthquake, floods, heavy snowfall, cloudburst and landslide. Hence, in accordance with the Disaster Management Act 2005 and Himachal Pradesh Disaster Management Plan 2012, the scope of this plan is to plan and prepare for all hazards having bearing on animal husbandry. The department of animal husbandry has to not only protect the animal life during the disaster but also prevent spreading of epidemics.

There are certain geographical areas that are more vulnerable to certain hazards like earthquake, landslides, storms etc. Those need to be identified and required measures need to be undertaken beforehand so that losses can be averted. For example, Chamba, Kangra, Kullu, Una, Bilaspur and Mandi districts lie in the Zone V of Seismic hazard map. During the earthquake of 1905 in Kangra, Himachal Pradesh close to 53,000 domestic animals had perished. Thus the animal husbandry department needs to prepare a functional plan that will help mitigate the effects of disasters.

Some of the key functions the animal husbandry is expected to discharge to strengthen the resilience of the sector in the state are as under:

- Identify hazards and analyse risks to the sector.
- Undertake measures for prevention and mitigation of disasters impacting animal husbandry in the state.
- Integrate disaster mitigation measures in all the central and state-sponsored schemes and programmes being implemented by the Department of Animal Husbandry.
- Assign roles and responsibilities of each agency in relation to pre-during-post disaster phases.

1.4 AUTHORITIES, CODES AND POLICIES

Functioning of Disaster Management in Himachal Pradesh is governed as per the Disaster Management Act 2005 and Himachal Pradesh Disaster Management Plan 2012. Apart from that, various policies and schemes funded by state and centre, both also contain disaster risk mitigation measures. As per Section 23 of the DM Act 2005, there shall be a DM plan for every state and within the state, there have to be

departmental plans for the concerned agencies to deal with disastrous situation smoothly. It provides for the departments of the state governments to draw up their own plans in accordance with the state plan. It also provides for annual review and updating of the departmental plan every year and enjoins upon the state governments to make provisions for financing the activities to be carried out under the departmental plans.

Apart from that, there are guidelines and provision for State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF) which can be claimed by the departments at any stage of the disaster management.

Department of Animal Husbandry will be guided by the following:

- Disaster Management Act 2005
- Himachal Pradesh Disaster Management Plan 2012
- Himachal Pradesh Disaster Management policy
- National Guidelines issued by the NDMA
- National Disaster Management Plan 2016
- 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

As per the clause b of subsection (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

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 on 1st June 2007 which comprise Secretary (Animal Husbandry) as one of the members.

Advisory Committee where Animal Husbandry Department is represented.

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

Nodal Officer for DM in the Department.

The department of animal husbandry is the primary agency for performing the emergency support functions such as treatment of animals, provision of vaccination and disposal of dead animals to avoid an outbreak of epidemics.

1.6 PLAN MANAGEMENT (MONITORING, REVIEW AND REVISION)

Implementation of the Plan

Directorate of Animal Husbandry shall be responsible for implementation of the Plan. The 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. As per 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 Plan shall be updated by the Directorate of Animal Husbandry with the help of State Disaster Management Authority at least once in a year or as and when felt necessary. 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

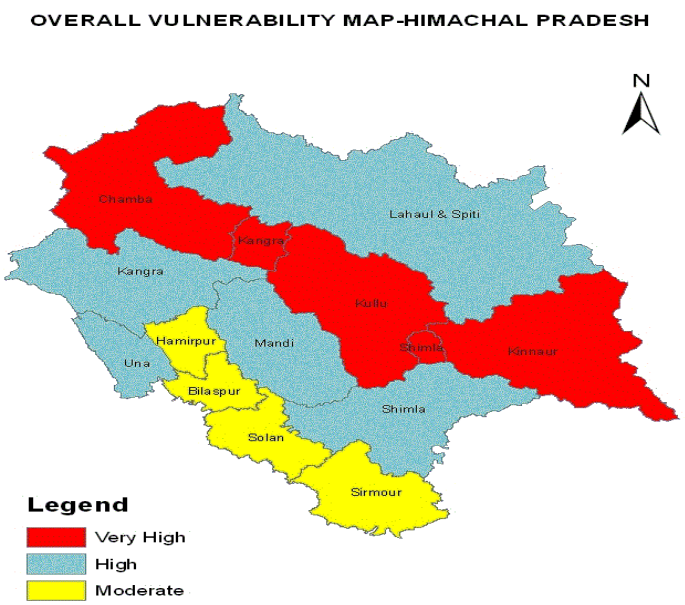
After finalisation of the Plan, a copy will be submitted to the HPSDMA for approval. After approval, it shall be disseminated to all agencies, field offices and other stakeholders. Further, whenever it revised/updated, it shall be submitted to HPSDMA for endorsement of changes. The revised Plan shall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

2. HAZARD, RISK AND VULNERABILITY ANALYSIS

2.1 RISK ASSESSMENT OF HIMACHAL PRADESH

2.1.1 HAZARD PROFILE OF THE STATE:

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.

#	Nature of Disaster	Frequency	Intensity
1	Flood / Flash Flood	Regular Frame	High
2	Drought	Every 3-5 Years	Moderate
3	Cloud Bursts	Regular Feature	High
4	Earthquake	Regular Feature	Moderate to Very High
5	Landslides	Regular Feature	High
6	Avalanches	Regular Feature	Low
7	Lightening	Rare	Low
8	Disease Epidemics	Rare	Low
9	Fire	Regular Feature	High
10	Hailstorm	Regular	High
11	Pest attack	Regular	Moderate
12	Forest Fire	Regular	High

The overall vulnerability of the state as depicted in the figure below, clearly suggests that the district Chamba, Kinnaur Kullu and part of Kangra and Shimla fall in very high vulnerable risk. Similarly, district Kangra, Mandi, Una, Shimla and Lahaul and Spiti falls 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 above factors into consideration.

As far as the Animal Husbandry department is considered Drought, flash flood, earthquake and landslide are the major hazards that would affect the department as well as the entire sector per se. Along with the above-mentioned hazards, the assets of the department can also be severely affected by earthquake and landslides. Therefore, the department should assess the risk of its own assets to various hazards.

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, the Animal Husbandry may assess the potential risks to animal population of the State due to hazards like flash floods or avalanche in any 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 sectoral risk to the department of animal husbandry are as follows:

2.2.1 CLIMATE CHANGE RISK

- 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 1.90C and annual minimum temperature by 2.30C towards mid-century. The wetter scenarios are likely to be harmful to grazing animals because greater rainfall implies a shift from grasslands to forests.
- It is also seen from the INRM (Integrated Natural Resource Management) 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 the rise of certain diseases which can be harmful to the livestock.

2.2.2 DROUGHT

- Himachal has accounted for 1.1% of country's livestock population as compared to the human population of 0.6% of India's population. The stall-fed livestock, as well as animals owned by farmers, depend significantly on the grazing land.
- The results of TARU report show that the once in 10-year rainfall can be significantly lower than the median rainfall. Nearly half the state gets less than 1200 mm of annual median rainfall. Given the high slopes and skeletal soils, the moisture retention is likely to be low and regular and frequent rainfall is required for water demanding crops, which might further result in a decrease in production of fodder for the animals.
- The report also indicates that almost all parts of the state except region around Shimla face medium to high drought risks in monsoon rainfall. Shiwalik region of Hamirpur faces summer water shortages due to lack of any perennial sources. Since the soils in Hamirpur and Sandy and shallow, the meteorological droughts can translate into agricultural droughts. In the high-risk

zone, the once in 10-year drought may be nearly two-third of the median monsoon rainfall, which can cause severe distress to the livestock in the region.

2.2.3 GLACIAL LAKE OUTBURST FLOOD

- The possibility for a GLOF to occur sometime in the future cannot be dismissed, particularly in view of continued atmospheric warming and the associated increase in the volume of glacial lakes. Furthermore, expansion of infrastructure in the vulnerable sectors downstream means that the actual risk associated with an individual event is increasing.
- It has been observed that glacial lake outburst floods have cascading effect on life, livelihood and infrastructure. Sudden floods can result in a loss of livestock in large numbers.

2.2.4 RIVERINE FLOODING

- The amount of flooding is a function of the amount of precipitation in an area, the amount of time it takes for rainfall to accumulate, previous saturation of local soils, and the terrain around the river system. The TARU study about the riverine flood shows that about 59 villages in Beas basin and 280 villages in Sutlej basin are potentially at risk due to inundation caused by river flooding. This will have serious implications on the livestock in the region.

2.2.5 DEPARTMENTAL RISKS

Risk to the assets / infrastructure of animal husbandry department. The infrastructure available with the department at various levels is as under:

Assets / Infrastructure	Hazard	Likely Impact	Details of assets
Vet Polyclinic	Earthquake, Landslide, Flood	Partial or complete damage to the building, equipment's and loss of important documents	9
Vet Hospitals	Earthquake, Landslide, Flood	Partial or complete damage to the building, equipment's	308
Vet Dispensary	Earthquake, Landslide, Flood	Partial or complete damage to the building, equipment's and loss of important documents	1030
Sperm Station	Earthquake, Landslide, Flood	Partial or complete damage to the building.	2
Semen Bank	Earthquake, Landslide, Flood	Partial or complete damage to the building, equipment's and loss of important documents	7
CBFs	Earthquake, Landslide, Flood	Partial or complete damage to the building.	3
SBFs	Earthquake, Landslide, Flood	Partial or complete damage to the building.	5
Departmental Residential Buildings	Earthquake, Landslide, Flood	Partial or complete damage to the building.	450

Departmental Office Buildings	Earthquake, Landslide, Flood	Partial or complete damage to the building.	16
Total			**1830**

Many of these facilities/ buildings lie in different hazard-prone areas of earthquake and are also prone to fire. Any kind of safety audit / risk audit or retrofitting per se has never been done. But occasionally, unexpected visits are made by the senior officials to assess the maintenance level of the assets.

The fund which is allotted every year for maintenance is not enough to maintain the large number of assets that the department possesses, making these assets even more vulnerable. Therefore, the department should try to assess the risk of these assets by itself, and should also put in efforts to develop mitigation strategies for the same. Further, Department like that of Animal Husbandry should also keep in mind the potential risks of disasters due to emerging issues like climate change.

2.3 ASSESSMENT OF CAPACITY GAPS AND NEEDS

The Department of Animal Husbandry has a setup of various institutions at state, district and sub-division level which caters to the need of providing services for prevention, control and treatment of various animal and poultry diseases along-with extension and awareness services up to village level. During animal / poultry diseases outbreaks the department through its state diagnostics and regional disease investigation labs identifies the cause of various outbreaks and suggest/ implement immediate necessary treatment & control measures.

Gaps identified in the existing capacity:

- Lack of pre-planning to deal with any disaster at local level
- Non-availability of fodder in many areas. The department suggested that there should be a fodder bank in every district which will help in providing the affected people with the fodder for their livestock easily
- Shortage of medicines and vaccinations
- No efforts have been taken to transfer the risk by way of insurance etc.
- Non-availability of insurance in many of the livestock areas
- Mobility is a big issue for the department. Carrying a carcass in a post-disaster situation will be very difficult
- No involvement of local people.
- Lack of specialised equipment's and big machinery
- Lack of trained people at village and town level who can help
- Lack of clarity in roles of the departments and its stakeholders
- Lack of holistic approach for planning in pre-disaster period
- Lack of earthquake resistance buildings
- Communication – land and mobile-based communication only
- Lack of funds at district and sub-divisional level

2.4 ASSESSMENT OF PROBABLE DAMAGE AND LOSS

The department damage may provide details of loss suffered by the sector per se. A large number of livestock is lost in Himachal Pradesh due to disasters. Some of the data is shown below:

Number of livestock perished due to various disasters

#	District	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
1	BILASPUR	1787	77	127	150	107	110	116	368
2	CHAMBA	515	1242	3028	2251	186	716	202	366
3	HAMIRPUR	177	234	259	136	108	264	426	544
4	KANGRA	1005	1055	722	850	637	2018	574	759
5	KINNAUR	455	491	833	782	215	389	9091	672
6	KULLU	408	467	673	909	870	874	36	496
7	L&S	322	1133	711	3778	544	198	176	188
8	MANDI	879	783	436	508	503	763	938	988
9	SHIMLA	424	416	514	325	828	1013	327	360
10	SIRMOUR	530	591	679	273	567	345	223	688
11	SOLAN	124	125	78	96	59	693	134	192
12	UNA	6	206	47	23	47	79	3	48
HP		**6632**	**6820**	**8107**	**10081**	**4671**	**7462**	**12246**	**5669**

Loss due to Flood during 2001-2011

				Damage to Crops		Damage to Houses		Nos		Rs. crores	
#	Year	Area affected in (m. ha.)	Population affected in (million)	Area (m. ha.)	Value (Rs. Crore)	Nos.	Value (Rs. Crore)	Cattle Lost	Human lives lost	Damage to public utilities	Total Damage crops, houses & public utilities
1	2000	0.420	0.876	0.031	46.828	3863	13.087	1411	35	1466.028	1525.941
2	2001	0.0008	0.405	0.006	20.050	2683	4.223	915	45	113.981	138.254
3	2002	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
4	2003	0.033	0.303	0.016	17.790	2924	60.068	452	89	87.964	165.822
5	2004	Neg.	0.022	Neg.	0.673	525	0.864	103	8	29.236	30.772
6	2005	0.530	0.873	0.048	328.590	2024	9.147	3049	8	222.063	569.800
7	2006			0.094	245.490	4379	23.665	846	48	351.568	620.723
8	2007			0.180	239.159	1082	96.440	3087	98	933.349	1268.948
9	2008			0.093	325.470	11686	138.010	2780	145	440.162	911.642
10	2009	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
11	2010	0.001	0.608	0.204	286.340	6666	7.978	5839	62	1750.710	2044.02
12	2011	0.030	0.608	0.157	417.390	8467	0.480	2372	51	618.600	1036.470

Loss due to Forest Fire, during 2008-2012

Year/District	No. of Fire	No. of Fire Calls	No of human lives		No of cattle lives		Value of property (Rs. In Lakhs)	
			Saved	Lost	Saved	Lost	Saved	Lost
2004	2	1049	8	3	5	2	18618	1449
2005	22	1226	12	33	-	4	20018	2357
2006	22	867	8	6	3	47	20739	10035
2007	20	1202	306	102	13	38	27091	2984
2008	22	1233	-	113	-	-	38012	10302
2009	22	1684	30	20	-	32	76521	11317
2010	22	1447	14	7	7	82	71858	68013
1. Bilaspur	1	40	-	-	-	-	286	63
2. Chamba	1	24	-	-	-	-	570	274
3. Hamirpur	1	151	-	-	-	-	349	99
4. Kangra	3	217	1	-	-	6	3078	1264
5. Kinnaur	1	7	-	-	-	-	13	17
6. Kullu	2	75	1	3	-	37	1715	381
7. L&S	-	-	-	-	-	-	-	-
8. Mandi	1	50	4	-	-	-	656	51
9. Shimla	5	265	-	2	-	27	11364	1064
10. Sirmour	2	143	-	1	7	4	16611	450
11. Solan	4	361	5	-	-	-	35999	2932
12. Una	1	114	3	1	-	8	1216	204

Number of death of animals in Rainy season

Animal Husbandry (Replacement of animals)
Information relates to Rainy Season-2016

Sr. No.	Name of the District	No. of Cattle lost				No. of animals qualifying for relief grant (i.e. subject to ceillling of 3 large milch animal or 30 small milch animals or 3 large draught animals or 6 small draught animal per household)				Assistance sought (Milch @ Rs. 30,000/-/Rs. 3000/- per animal and draught Animals @ Rs 25,000 and Rs. 16,000/- per animal				Total
		Milch Animal		Draught Animals		Milch Animal		Draught Animals		Milch Animal		Draught Animals		
		Buffalo/ Cow/ Camel	Sheep/ Goat	Camel/ Horse/ Bullock	Calf Donkey & Pony	Buffalo/ Cow/ Camel	Sheep/ Goat	Camel/ Horse/ Bullock	Calf Donkey & Pony	Buffalo/ Cow/ Camel	Sheep/ Goat	Camel/ Horse/ Bullock	Calf Donkey & Pony	
1.	Bilaspur	16	0	0	0	16	0	0	0	4,80,000	0	0	0	4,80,000
2.	Chamba	14	0	0	0	14	0	0	0	4,20,000	0	0	0	4,20,000
3.	Hamirpur	0	0	0	0	0	0	0	0	0	0	0	0	
4.	Kangra	8	0	0	0	8	0	0	0	2,40,000	0	0	0	2,40,000
5.	Kullu	20	0	0	0	20	0	0	0	6,00,000	0	0	0	6,00,000
6.	Kinnaur	0	66	0	0	0	66	0	0	0	1,98,000	0	0	1,98,000
7.	Lahaul-Spiti	0	0	0	0	0	0	0	0	0	0	0	0	0
8.	Mandi	5	0	0	0	5	0	0	0	1,50,000	0	0	0	1,50,000
9.	Shimla	0	0	0	0	0	0	0	0	0	0	0	0	
10.	Solan	1	0	0	0	1	0	0	0	30,000	0	0	0	30,000
11.	Sirmour	6	0	0	0	6	0	0	0	1,80,000	0	0	0	1,80,000
12.	Una	0	0	0	0	0	0	0	0	0	0	0	0	

Losses to departmental buildings due to natural calamity

District wise detail of losses to the Departmental building due to Nuatural Calamity w.e.f.15.11.2014 to 31.03.2015

Sr. No.	Name of District	Damage in physical terms	Estimated cost of loss occurred during Nov. 2014 to Jan. 2015 (In Rs. In lakh)	Estimated cost of loss occurred during Feb. 2015 to March, 2015 (Rs. In lakh)	Grand Total (Rs. In lakh)
1	Chamba	-do-	NIL	3.62	3.62
2.	Kullu	-do-	NIL	38.00	38.00
3.	Kangra	-do-	0.50	NIL	0.50
		Total	**0.50**	**41.62**	**42.12**

The above data shows that a large number of livestock (around 62000 in number) has been perished due to various disaster in a period of 2007-2015. It can also be analysed from the given data, related to a specific hazard, that the number of livestock loss has always been a lot greater in number than that of humans, which shows the lack of proper systems to protect the livestock during disasters.

A few districts have always been more vulnerable to livestock as the number of death in Kullu, Kangra and Bilaspur have always been greater in number than the other district. So, sector special attention can be put for the districts which are more prone to disasters.

Further, the loss of the department assets also counted to a whopping number of rupees forty-two lac due to the losses in the departmental building. This loss could have been minimised if various mitigation method would have been adopted to fight against a disaster.

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. For example, assets of the Department like the offices, veterinary clinics and laboratories along with animal breeding farms should be located at places that are safe from destruction or losses caused by the disaster.

The following shall be followed for risk prevention: -

- All developmental activities, plans, schemes shall take into account hazard risks in planning as well as implementation phase.
- Proper implementation of the government schemes and programs to reduce the risks. Health and hygiene of the animals shall be maintained through various schemes of the department like those relating to disposal of the carcas, timely vaccination and health camps etc. Thus, reducing the risk of an outbreak of the epidemic, post-occurrence of a disaster event.
- Telephone numbers of Fire, Police shall be displayed at all locations of the building.
- The Disaster Risk Management committee shall be formed. This committee should include a veterinary officer of that area, para-vet staff, Gram Pradhan, youth members, members of Mahila Mandal groups and NGOs on animal welfare if any, working in the area.
- Training and orientation of Government officials on disaster management shall be organised at regular interval.
- Also, train the local volunteer on various aspect of animal protection and care.
- The department shall consider disaster impact assessment.
- The impact of climate change on animal population shall be kept in mind at the time of implementation of a new project.
- Insurance policy for sheep and goat will be simplified as getting the claims for the same may be difficult. It's more of a "No tag no game" policy, which means that if the particular sheep/ goat is not tagged, getting insurance for the same will be very difficult.

3.2 RISK MITIGATION

Risk mitigation is defined as lessening the impact of disasters. Mitigation projects reduce the level of exposures or the depth of vulnerabilities or both through a combination of structural and non-structural measures. Mitigation projects should be planned with proper Cost Benefit Analysis (CBA) to ensure that the benefits of the projects outweigh the costs. On the basis of its developmental responsibility, the department can liaise with other line departments and agencies for a coordinated mitigation approach.

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 categorised under following five major groups:

- **Risk assessment:** The department should try to improve the understanding of the location, potential impacts and linkages between hazards, vulnerability and measures needed to protect the effects on the production after a disaster. A rapid risk assessment of the sector, as well as the department, will be a solution for it.
- **Construction work:** All the newly constructed assets should follow the building by-laws of the state / BIS codes.
- **Repair and maintenance:** Lifeline building will be identified and risk audit shall be carried out. If necessary, retrofitting of such buildings will be conducted.
- **Training and capacity building:** Training programs on disaster management with respect to animal husbandry can be planned at the village level.
- **Communication arrangements:** A free helpline can be made by the department which can guide the community on how to use various mitigation measures for animals to fight against a disaster situation.

Certain mitigation measures which the department can adopt are:

- All major buildings should be equipped with fire extinguishers.
- Rodent control measures should be taken.
- All these buildings shall be inspected regularly for safety check-up of all installations by Departmental officers, Fire Dept. & Electrical Dept.
- Providing permanent identification marks to all the livestock population in the area.
- Awareness creation among villagers & farmers to minimise the effect of various disasters
- Awareness creation to reduce the occurrence of various man-made disasters like forest fires etc.
- Awareness creation among farmers to vaccinate their animals to minimise the disease outbreak occurrence.
- Pasture development in the area to work as Fodder Bank.
- Awareness creation regarding adoption of good biosecurity practices.

3.3 MATRIX OF HAZARD-SPECIFIC MITIGATION MEASURES

For the assets of the department as well as the sector

HAZARD	MITIGATION MEASURES (STRUCTURAL AND NON-STRUCTURAL)
Earthquake	• Revision and adoption of model building bye-laws for the construction of departmental assets both in the urban and rural area. • Undertaking mandatory technical audits of structural designs of major projects by the competent authorities. • Assessing the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical structures. • Undertaking seismic strengthening and retrofitting of critical structures, initially as pilot projects and then extending the exercise to the other structures. • Shelter, Vet Aid, Cattle Feed & Fodder supply Request for sending expert team from other states. • Developing appropriate risk transfer instruments by collaborating with insurance companies and financial institutions.
Drought	• Cattle Feed & Fodder supply should be assessed beforehand and proper stock of the same should be maintained by the department. • Installation of tube well and water facility for the livestock.
Highly Pathogenic Avian Influenza (Bird Flu) Anthrax Brucellosis	• Early warning mechanism for detection should be in place. • Protocol for the laboratory testing should be in place. • Treatment protocols/ arrangements for the outbreak. • Border sealing to arrest movement of poultry and poultry products from affected place to other areas. • Multi-departmental coordination • Supply PPE Kit, N5 Masks. • Sending an expert team from another state/ central team. • Establishing testing laboratory with the requisite facility.
Flash floods / Cloud burst	• Along with DDMA, the department should demarcate the flood-prone area and no construction related to the department should be done there. • Construct shelters to protect the animals from extreme rains. • Cattle Feed procurement and supply to district office, Vaccine procurement, timely supply and proper carcas disposal • Mitigation plan should be in place to safeguard the animals from the flash flood.
Landslide	• Plan to move the animals to a safer location which is less prone to landslide. • Quick rescue and veterinary aid, proper carcas disposal
Climate Change	• Storing food grains for use during the dry season and droughts. • Relocation of livestock to areas where better pastures are available. • Storing crop stalks and conserved the fodder through Hay and silage making. • Selection of suitable fodder crops and cultivar for cultivation.

4. MAINSTREAMING DISASTER RISK REDUCTION IN DEVELOPMENT

Disaster Management Act has stipulated that DM Plans of the Departments of State Government shall integrate strategies for prevention and mitigation of the risks of disasters with the development plans and programmes of the department. 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 minimising that activity's potential contribution to the hazard.

Every development plan in the state would require incorporating elements of disaster impact assessment, risk reduction, and adoption the 'do no harm' approach. The linkage of DRR in Development has the following purposes to achieve: -

- To ensure hazard-resistant construction of all assets in future.
- To integrate DRR/CCA in ongoing schemes.

Although there are several schemes advocating disaster management measures, out of which some of them are as follows:

#	Name of Scheme	Key Component of the scheme	Key activities for mainstreaming
1	Integrated Sample Survey Scheme for Estimation of Major Livestock Products	• This is a scheme through which the centre provides grants in aid to the states on a 50:50 basis, whose main objective is to estimate the production of milk, egg, wool and meat in the State.	• How to protect livestock products during disaster
2	Assistance for Modernization of Slaughter houses and Carcas Utilisation Plants	• The objective of the scheme is to fully utilise animal by-products of fallen animals and waste from slaughter houses. And, to reduce environmental pollution.	• Disaster risk audit of the slaughter houses. • Structural and non-structural measures of the slaughter houses.
3	National livestock mission	• The Mission is designed to cover all the activities required to ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders. • This Mission is formulated with the objective of sustainable development of livestock sector, focusing on improving the availability of quality feed and fodder.	• Capacity development of all stakeholders in DRR.
4	Livestock Health & Disease Control	• It is an ongoing centrally sponsored scheme being implemented since 10th Five Year Plan Period with following components:	• Training and capacity

		• Assistance to States for Control of Animal Diseases (ASCAD) • Foot and Mouth Disease Control Programme (FMD-CP) • Professional Efficiency Development (PED) and • National Project on Rinderpest Eradication (NPRE).	development of all stakeholders.

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". The Department may review their "state of readiness" and prepare a strategic action plan to deal with possible disaster situations.

Department of Animal Husbandry can take the following measure to make the department disaster ready:

5.1 DEPARTMENT RELATED PREPAREDNESS MEASURES

- Designate one Liaison Officer in the department and the district for all activities of Disaster Management.
- Develop a state disaster management plan for the department.
- Geo-tagging of all the assets can be done to assess the post-disaster losses if any.
- Formation of EOC and incident response team should be done beforehand.
- All valuable equipment's and instruments should be packed in protective coverings and stored in the most damage-proof room.
- Secondary database management plan for important documents.
- Fire hydrants to be installed near the most important assets identified by the department.
- Evacuation plan for the building to be made.
- Awareness about the preparedness of the disaster should be given to all the employees of the department not only the nodal officer.
- Carrying out the mock drill at least twice a year.
- 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.
- Maintain an inventory of all related guidelines, procedures, action plans, district maps and contact numbers.
- Emergency numbers can be displayed on the notice board.
- Develop emergency admission procedures (with adequate record keeping).

5.2 SECTOR-RELATED PREPAREDNESS MEASURES

- Prepare and publicise the list of common disaster specific ailments and possible precautions for the community to observe.
- Procure / Prepare HRV Analysis of Animal Husbandry sector in the state of HP & District wise.
- Constitute teams/ task forces at State and District levels.
- Do the fodder assessments and establish a mechanism for supply in a post-disaster situation.
- Develop strategy and plan for animal-related issues vis-à-vis disasters.
- Providing medication for cattle in disaster-prone villages.
- Prepare a plan for setting up cattle camps and cattle feeding centres.
- To provide mobile OT, during a post-disaster situation.
- Identify livestock population at risk, the requirement of medicine, vaccines, equipment, disinfectants and other materials required in any disaster-prone area.
- Make an inventory of all veterinary centres and assess their capacity to handle a disaster situation.
- Capacity building of all veterinary hospitals staff in dealing with likely damages and effects in the aftermath of the disaster.

- Prepare kits for veterinary diseases, which could be provided to veterinary doctors at the block level and extension officers at the village level. The kits may also be provided to village level veterinary volunteers. Moreover, these kits should be species specific.
- The provision of medical services should be coordinated by the District Animal cattle camps.
- Prepare a list of water-borne diseases that are preventable by vaccination. Publicise the information about common diseases afflicting livestock and the precautions that need to be taken.
- Identify sites for cattle camps by ensuring the following:
    - Cattle sheds constructed should not exceed 20 sq. feet per animal.
    - There is an adequate supply of drinking water.
    - There is sufficient shade for cattle to rest during the afternoon.
    - They are accessible.
    - They are conveniently located to be as close as possible to the affected villages.
- An injury and disease monitoring system should be developed, to ensure that a full picture of risk is maintained.
- Prepare a plan for disposal of dead animals, non-disaster times.
- Capacity building of all veterinary hospitals staff in dealing with likely damages and effects in the aftermath of the disaster.
- Based on HRV analysis, prepare state wise & district wise plan for feed procurement
- Prepare a plan for feed storage centres.
- Awareness activities to be planned.

5.3 PREPAREDNESS CHECKLIST

#	Preparedness Measures	Action Taken Yes / No	Remarks
1	Prepare and publicise the list of common disaster specific ailments and possible precautions for the farmers to observe.		
2	Constitute teams/ task forces at State and District levels.		
3	Prepare a plan for setting up cattle camps and cattle feeding centres.		
4	Prepare kits which could be given to Veterinary doctors and Animal Husbandry workers/volunteers.		
5	Prepare a plan for disposal of dead animals		
6	Prepare a plan for feed storage centres.		
7	Do the fodder assessments and establish a mechanism for supply in a post-disaster situation.		

6. DISASTER RESPONSE, RECOVERY AND REHABILITATION

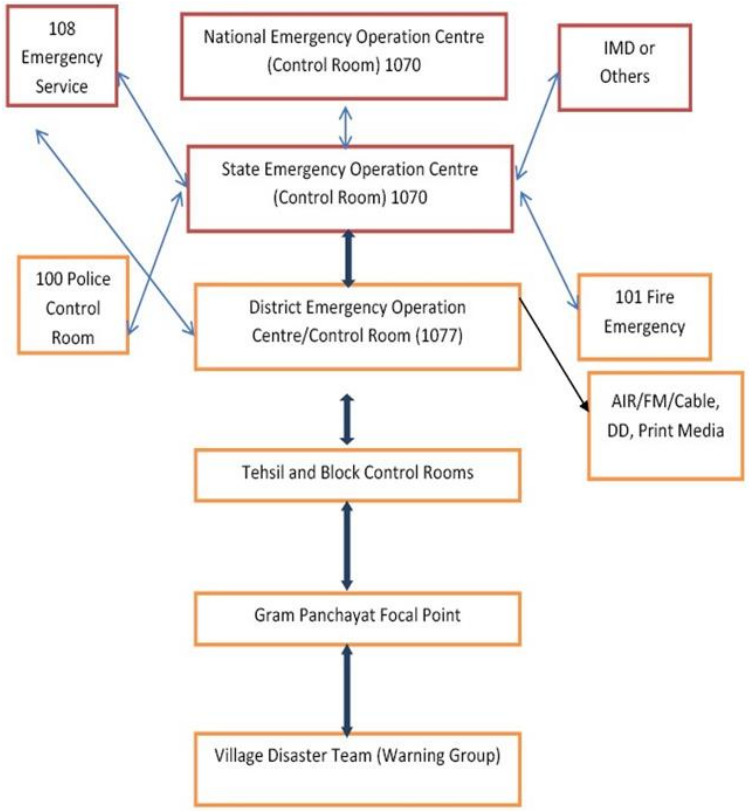
6.1 RESPONSE PLAN

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 by 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 way these functions shall be discharged. As per the SDMP following are the roles and responsibilities of the Animal husbandry department:

Warning Phase:

- Check available stocks of equipment's and materials which are likely to be most needed after the disaster.
- Stock Veterinary equipment's which may be required after a disaster.
- Determine what damage, pests or diseases may be expected, and what drugs and other insecticide items will be required, in addition to requirements of setting up extension teams for animal protection, and accordingly ensure that extra supplies and materials, be obtained quickly.
- All valuable equipment's and instruments should be packed in protective coverings and stored in the most damage-proof room.
- Check the emergency electrical generator, to ensure that it is operational and that a buffer stock of fuel exists.
- Fill department vehicles with fuel and park them in a protected area.
- Fill hospital water storage tanks and encourage water savings.
- Prepare an area of the hospital for receiving a large number of livestock.
- Develop emergency admission procedures (with adequate record keeping).
- The sterilized surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measures.
- All valuable equipment's and instruments should be packed in protective coverings and stored in the room which is the most damage proof.
- All electrical equipment should be unplugged when disaster warning is received especially in flood-prone areas.

Flowchart of Early Warning System



During Disaster:

- Depute one coordinator to the SEOC to facilitate quick coordination between SEOC and parent department.
- Rush Rapid Assessment Team to Incident site to assess the quantum of damage and immediate requirement for relief and rescue.
- The response team along with the needed medicines, equipment and other materials should rush quickly for relief and rescue operation at the disaster site to minimise further loss and damage.
- Arrange for quick and proper disposal of carcases with disinfection of the premises with the help of local people and another line departments in coordination with SOEC to check the spread of the epidemic.
- To take immediate preventive measures like quarantine, immunization and culling etc. as per requirement of the situation.
- Develop a strategy for rehabilitation of affected animals.
- Establish radio communication with
    - SEOC
    - Deputy Commissioner
    - District Control Room
    - Veterinary aid centres and hospital (including private practitioners) within the division.
- Organise transfer of seriously injured livestock from villages to veterinary aid centres wherever possible.
- Establish cattle camps and additional veterinary aid centres at affected sites and designated an Officer In-charge for the camp.

- Coordinate with revenue Department to ensure relief distribution as per the direction of the State Govt. / already laid down norms by the Govt.
- Put in place a mechanism to control & check any outbreak of epidemics.
- Arrange for emergency supplies of anaesthetic drugs.
- Provide information to the local police and rescue groups about the resources available with veterinary aid centres and hospital.
- The minimum number of cattle in the camp should be about 50 and the maximum 300.
- Make provision for 6kg per cattle head per day of fodder, and 1 to 1.5kg per cattle head per day or any other concentrate
- Cattle camps and hospitals administrators should
    - Establish work schedules to ensure that adequate staff are available.
    - Set up teams of veterinary doctors and assistants for visiting disaster affected sites.
- Organise transfer of seriously injured livestock from villages to veterinary aid centres wherever possible.
- Establish cattle camps and additional veterinary aid centres at affected sites and designated an officer-in-charge for the camp.
- Estimate the requirement of water, fodder and animal feed, for cattle camps and organise the same.
- Sensitization of stakeholders to minimise damage & evacuation of livestock and public in the event of disaster
- Ensure that adequate sanitary conditional through.

Emergency Support Functions and Roles to be performed as per SDMP

ESF No.	ESF	Primary Agency	Secondary Agency	Responsibilities of Primary Agency	Activities for Response	Role of Secondary Agency
1	Animal Care	Department of Animal Husbandry	Department of Panchayati Raj	Treatment of animals; Provision of vaccination; Disposal of dead animals.	To arrange for timely care and treatment of animals in distress; Removal of dead animals to avoid outbreak of epidemics	To assist the primary agency in performing its role.

Guidelines for Disposal of Animal Carcasses:

- Prepare a record of details of the animal carcasses retrieved.
- Establishment of predisposal identification of the retrieved carcasses.
- Associate-owners of the livestock, or their relatives and community members for the identification of the animal carcasses.
- Hand over the identified animal carcasses to the owners for disposal at the selected site.
- Disposal of carcasses to be made under the supervision of qualified persons only.
- All unidentified animal carcasses will be photographed preferably before transportation for disposal.
- Unidentified or unclaimed animal carcasses shall be transported to the designated site for disposal by local/District authorities as per the Disaster Plan.

6.2 DISASTER RELIEF AND REHABILITATION

This phase will include all necessary measures to provide immediate relief and succour to the affected animals & livestock owners in terms of their essential needs of food, drinking water, health and hygiene, shelter, etc. Following activities would be carried out in this phase:

- To facilitate the victims to receive timely claims as per relief manual by coordinating with revenue department.
- Creation of temporary shelters for remaining livestock.
- Making arrangements for feed, fodder & portable water for the livestock.
- Proofing of all common resources available.
- Cordoning off the damaged areas.
- Conducting cleaning operations at the end to ensure sanitary conditions to avoid any health hazard.
- Restoring rescued animals to the valid owners.
- Incentivize/ providing subsidies to the affected livestock owners to continue in the livestock based livelihood programme.

As per SDRF and NDRF norms, the assistance will be provided to the livestock owners to compensate the loss due to disaster. The revised norms are given below:

Assistance to small and marginal farmers / agricultural labourers: -

1. Replacement of draught animals, milch animals or animals used for haulage
    a. Milch Animal
        i. Buffalos/cow/camel / yak / Mithun etc @ Rs. 30,000/-
        ii. Sheep / Goat / Pig @ Rs. 3,000/-
    b. Draught Animals
        i. Camel / horse / bullock etc. @ Rs.25,000/-
        ii. Calf / Donkey / Pony / Mule @ Rs. 16,000/-

    The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 3 large milch animals or 30 small milch animals or 3 large draught animals or 6 small draught animals per household irrespective of whether a household has lost a larger number of animals. (The loss is to be certified by the competent authority designated by the State Government).

    c. Poultry
        i. Poultry @ Rs.50/- per bird subject to a ceiling of the assistance of Rs.5,000/- per beneficiary household. The death of the poultry birds should be on account of a natural calamity.

    Note: Relief under these norms is not eligible if the assistance is available from any other Government Scheme, e.g. loss of birds due to Avian Influenza or any other diseases for which the Department of Animal Husbandry has a separate scheme for compensating the poultry owners.

2. Provision of fodder / feed concentrate including water supply and medicines in the cattle camps:
    a. Large animals – Rs. 70/- per day
    b. Small animals – Rs.35/- per day

7. DISASTER RECOVERY AND RECONSTRUCTION

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 lives, livelihoods, houses and infrastructure, the process of recovery may take considerable time as the relief camps continue till houses are reconstructed. Often intermediary shelters have to be arranged before the permanent settlements are developed. Therefore, some of the Emergency Support Functions of recovery of the sector may continue for months. Departmental DM Plans should anticipate eventualities of longer duration recovery operations. The strategy adopted for this as per the emergency functions assigned to the department at the district level and nodal departments will be as below: -

- **Short-Term Reconstruction Activities:** This should further include immediate restoration activities like the restoration of the basic infrastructure of the department assets, providing compensation to the farmers under various schemes available within the department mandate.
- **Long-Term Reconstruction Planning:** Once the minimum basic reconstruction is being done the department should take immediate action for long-term recovery of its own sector.

This phase will also include all necessary measures to stabilise the situation and restore the utilities. In this phase Disaster Risk Management Committee will play a vital role Activities to be performed in this phase includes:

- Identification and cordoning of hazard-prone areas.
- Awareness creation among farmers to vaccinate the animals to prevent biological disasters like disease outbreaks.
- Awareness creation among farmers for adopting safe livestock management practices like storing hay, feed & fodder away from animal sheds and their own house to avoid fire emergencies.
- Training of local farmers and sensitization of stakeholders to minimise damage in the event of natural disasters by organising special awareness camps periodically or through routine extension activities at village level.
- Developing better communication & coordinating activities with other allied departments like revenue, PWD, IPH, etc.
- Ensuring sustainable livelihood in the affected areas by promoting sustainable livestock development.
- Establishment of livestock units like Sheep, goat, cattle etc. under RKVY to supplement the income of rural, SC / ST communities and women.
- Establishment of more Vet Polyclinics, disease diagnostic labs, animal feed processing units & milk procurement centres to be promoted under RIDF (Rural Infrastructure Development Funds).
- Promotion of Self Help Groups (SHGs) for livestock-based entrepreneur development.

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.

Efforts shall be made by the Department of animal husbandry to create a separate disaster management budget head within the budget allocation of the department. This budget can be used to work on the already suggested mitigation and preparedness measures, as response and relief are already being taken care of by the SDRF and NDRF.

This budget head can work with a very basic amount of Rs 5-10 lakh initially as the marginal costs involved in mainstreaming DRR in existing programme is not very sizable. Also, the funds required for risk assessments and disaster preparedness are also not very large. This budget will help in institutionalising the entire process.

NOTES