GOVERNMENT OF HIMACHAL PRADESH

REVENUE DEPARTMENT

(DISASTER MANAGEMENT CELL)

MEMORANDUM

OF

DAMAGES DUE TO,

DROUGHT LIKE SITUATION – 2021

INDEX

MEMORANDUM REGARDING DAMAGES DUE TO DROUGHT LIKE SITUATION, 2021

State Profile

Physical Location:

Himachal Pradesh is predominantly a mountainous State located in North – West India. It shares an international border with China. The State has highly dissected mountain ranges interspersed with deep gorges and valleys. It is also characterized with diverse climate that varies from semi tropical in lower hills, to semi arctic in the cold deserts areas of Spiti and Kinnaur. Altitude ranges from 350 meters to 6975 meters above mean sea level. It is located **between Latitude 30º 22'.40" N to 33º 12'.20" N and Longitude 75º 45'.55" E to 79º 04'.20" E.**

Demography:

Population of Himachal Pradesh is 68.56 lakh persons as per the Census report for the year 2011. 89.01% of the total population inhabits 20,604 villages in the rural areas of the State. These villages are sparsely distributed across the State having population density as low as 1-2 persons per square kilometer in the remote and tribal area of Lahaul & Spiti, Hamirpur district has largest population density of 369 persons per square kilometer as against 123 persons per square kilometer for the whole State. Himachal Pradesh is one of the few states of the country where gender equality is an integral part of the social ethos as well as the overall development strategy. Female literacy is well above the national level and women employment is much higher than in most states of the country.

Table 1.1 Demographic Features Since 1901

Year	Population	Decennial growth rate	Female per 1000 males	Density per Sq. Km. (Persons)	Scheduled Castes (Percentage)	Scheduled Tribes (Percentage)
1901	1920294	-	884	34	-	-
1911	1896944	-1.22	889	34	-	-
1921	1928206	1.65	890	35	-	-
1931	2029113	5.23	897	36	-	-

1941	2263245	11.54	890	41	-	-
1951	2385981	5.42	912	43	22.69	0.26
1961	2812463	17.87	938	51	22.88	4.35
1971	2460434	23.04	958	61	22.24	4.09
1981	4280818	23.71	973	77	24.62	4.61
1991	5170877	20.79	976	93	25.34	4.22
2001	6077900	27.54	968	109	24.72	4.02
2011(P)	6864602	12.95	972	123	-	

Source: Census of India.

Table 1.2 Areas, Density and Decennial Growth Population in Different Districts

District	Area in Sq. Kms.	Total Population		Decennial growth (2001-2011)(P)	Density per Sq. Km. (2011(P) Census)
		2001 Census	2011 (P) Census		
1. Bilaspur	1167	340885	381956	12.08	327
2. Chamba	6528	460887	519080	12.58	80
3. Hamirpur	1118	412700	454768	10.08	406
4. Kangra	5739	1339030	1510075	12.56	263
5. Kinnaur	6401	78334	84121	7.61	13
6. Kullu	5503	381571	437903	14.65	79
7. L&S	13835	33224	31564	-5.10	2
8. Mandi	3950	901344	999777	10.89	253
9. Shimla	5131	722502	814010	12.58	159
10.Sirmour	2825	45893	529855	15.61	188
11.Solan	1936	500557	580320	15.21	298
12.Una	1540	448273	521173	16.24	338
Himachal Pradesh	**55673**	**6077900**	**6864602**	**12.95%**	**123**

Source: Census of India.

Administrative Units:

In order to make the functioning smooth, the State is divided into twelve districts which are grouped in three Revenue Divisions i.e. Shimla, Mandi and Kangra. There are 73 Sub Divisions, 109 Tehsil, 63 Sub-Tehsil, 79 Development Blocks and 3226 Panchayats. The State has very effective structure of PRI's comprising 12 Zila Parishads and 78 Panchayat Samitis. There are also 30 Municipal

Councils and 23 Nagar Panchayats, besides 7 Cantonment Boards and 2 Municipal Corporation in the State.

Topography:

Topographically, the state can be divided into three zones:

1. **The Shiwaliks or Outer Himalayas:** It covers the lower hills of Kangra, Hamirpur, Una and Bilaspur, lower parts of Mandi, Solan and Sirmour districts. Within this zone, altitude varies from 350 m to 1500 m.

2. **Inner Himalayas or mid-mountains:** Altitude varies from 1500 m to 4500 m above mean sea level and includes areas such as the upper parts of Pachhad and Renuka in Sirmaur district, Chachiot and Karsog tehsils of Mandi district and upper parts of Churah tehsil of Chamba district.

3. **Alpine zone or the greater Himalayas:** Has altitude above 4500 m above mean sea level and comprises areas of Kinnaur district, Pangi tehsil of Chamba district and area of Lahaul & Spiti district.

Geology & Geomorphology:

Himachal Pradesh with its complex geological structures presents a complicated topography with intricate mosaic of mountainous ranges, hills and valleys. Composed of recent Alluvium, Shiwalik hills are made up of rocks such as sandstone, shale and clay that came into existence during the Eocene, Miocene and Pliocene period.

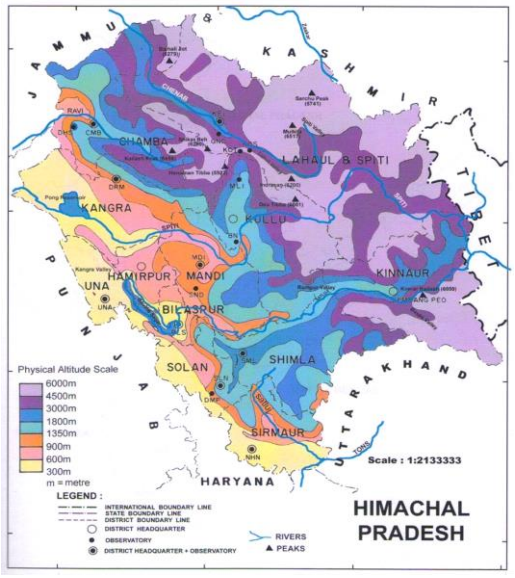

Figure 1.2 Geography of Himachal Pradesh

The central part that extends from Chamba district in the north to Shimla district in the south is mainly represented by Jatog group of rocks which originated in middle Proterozoic period. In the north eastern portion unclassified Granites borders the central part in between Kullu, eastern Shimla, Lahaul Spiti and parts of Kinnaur district. The eastern greater Himalaya presents the Triassic formation which is found in Kaza tehsil of Lahaul Spiti district. The oldest rocks are Granites found atJeori-Wangtu and Bandel near Largi in Kullu district. These granites date back to a stage of the crust at a time when India was located 8000 Km southwest of its present position.

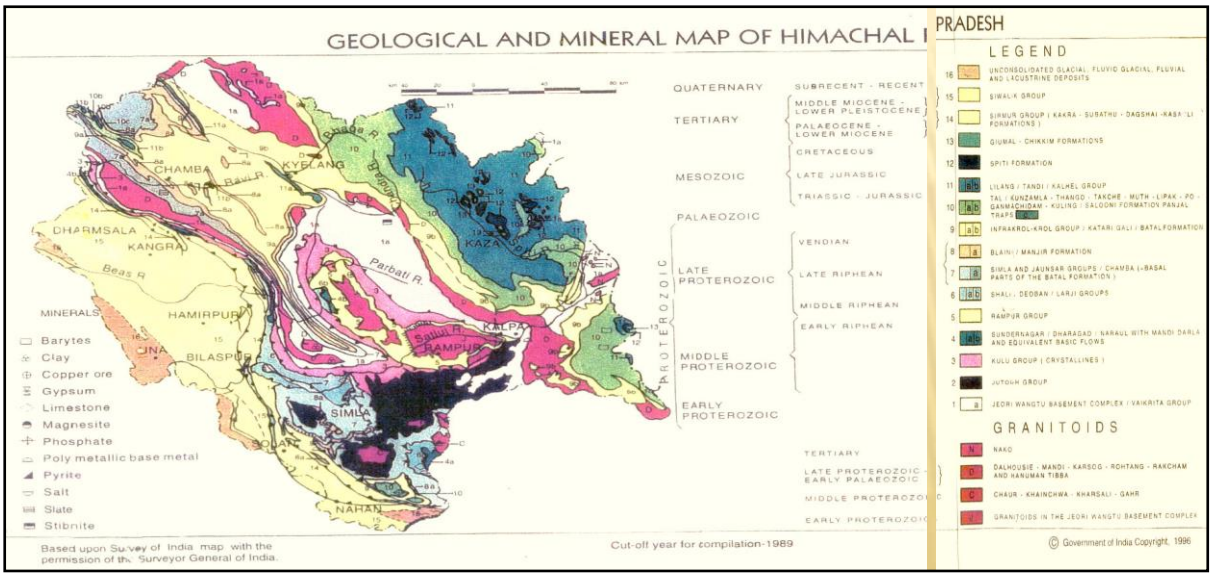

Figure 1.3 Geological and Mineral Map of Himachal Pradesh

Climate:

The climate varies across the state with the altitude. In the southern low tracks between an altitude of 400-900 it is hot sub humid type, between 900-1800m altitude warm & temperate, between 900-2400 m cool & temperate, cold alpine & glacial above 2400-4800 m altitude. Bilaspur, Kangra, Mandi, Sirmour, and Una districts experience sub tropical monsoon, mild and dry winter and hot summer. Shimla district has tropical upland type climate with mild and dry winter and short warm summer. Chamba district experiences, humid subtropical type climate having mild winter, long hot summer and moist all season. Kullu district experience mainly humid subtropical type of climate with mild winter moist all season, long hot summer and marine. During the period from January to February heavy snowfall in higher reaches create conditions for low temperature throughout the state making it unpleasant and series of western disturbances also affect the state.

Table 1.3 Climate Pattern of Himachal Pradesh

Climate Pattern	Districts
Sub-tropical Monsoon (Cwa type) Mild and dry winter, hot summer	Bilaspur, Kangra, Mandi, Sirmour, Una, Hamirpur, Solan, Chamba
Sub-tropical Monsoon (Cwb type) Mild and dry winter, moderate hot summer	Shimla, Parts of Chamba
Sub-tropical monsoon (Cfa type) Without dry winter with hot summer	Chamba, Major parts of Kullu, Mandi

Sub-tropical monsoon (Cfb type) Without dry winter with moderate hot summer	Minor parts of Kullu
Humid continental (Dwb type) Severe and dry winter, warm summer	Kinnaur
Humid continental (Dfb type) Severe winter moist all seasons, short warm summer	Lahaul & Spiti

Land use:

As per Land use statistics, Ministry of Agriculture (GoI), 2005, about 12.21 percent of the total reporting area of 4547000 ha of the state (out of 5567000 ha. of geographical area) is under cultivation. 24.06 percent under forest. Permanent pastures and other grasslands account for about 33.63 percent, 1.25 percent land under miscellaneous tree crops and groves, 2.73 percent is under the cultivable wasteland, fallow land other than current fallow 0.29 percent, current fallow 1.19 percent and net sown area is 12.21 percent.

Rivers and Catchments:

Five perennial rivers Satluj, Beas, Ravi, Chenab and Yamuna flow through the state. The utility of these rivers though restricted considerably by the rugged and undulating terrain of the State, nevertheless, these rivers possess immense potential for the generation of hydro-electricity. The following river catchment areas fall in the State. Figure 1.5 land use in Himachal Pradesh

Table 1.4 River Catchment Areas in Himachal Pradesh

Name of River System	Area of Catchment	Area in percentage
Sutlej	20,398	30.69%
Beas	13,663	24.50%
Chenab	7,850	14.20%
Yamuna	5,872	10.60%
Ravi	5,528	09.90%
Indus	1,450	02.60%
Markanda	360	00.60%
Ganga	290	00.50%
Ghaggar	262	00.50%
TOTAL	**55,673**	**100%**

Lakes/Reservoirs:

The state has both manmade and natural water bodies located in different parts of the state for specific purposes viz. irrigation, hydro-electricity, and flood control. Some of the important reservoirs of the state are Govind Sagar, which spreads into the Bilaspur and Una districts, Pong Dam in Kangra, and Pandoh in Mandi District. Chandertal, Renuka and Manimahesh are some the important natural lakes of the state.

Health:

The State has an extensive network of health care institutions. There are 86 hospitals, 2084 Sub- centres, 91 CHC's/RH, 576 PHC's, with available bed capacity of 12527. Similarly, there are 33 Ayurvedic hospitals, 1175 dispensaries/health centres with a bed capacity of 941 available in the state. Besides, there are 3 Ayurvedic Pharmacies and 1 Research Institute. Birth and death rate in the state is 22.1 per 1000 and 7.2 per 1000 respectively (statistical Year Book of H.P.-2017-18).

Roads and Bridges:

As per 207-18 data, the state has total road length of 37131 Kms in which motor able double lane is 2453 km, single lane is 32940 Km, Jeep able 369 Km and less than Jeep able 1396 Km and there are 1365 bridges. About 18156 villages are connected with roads.

Table 1.5 Population and distribution data

S. No	Name of the district	NO. of the villages	Population			Distribution of population		Sex Ratio	Population density	Literacy rate	Number of Households
			Male	Female	Total(4+5)	Urban population	Rural population				
1.	**Bilaspur**	1061	1,92,764	1,89,192	3,81,956	25,129	3,56,827	981	327	84.6	80,485
2.	**Chamba**	1591	261320	257767	5,19,080	36,108	4,82,972	986	80	72.2	1,02,460
3.	**Hamirpur**	1725	2,170,70	2,37,698	4,54,768	31,430	4,23,338	1095	407	88.2	1,05,519
4.	**Kangra**	3869	750591	759484	15,10075	86,281	14,23,794	1,012	263	85.7	3,38,887
5.	**Kinnaur**	660	46,249	37,872	84,121	-	84,121	819	13	80.0	19,976
6.	**Kullu**	326	225452	212451	4,37,903	41,391	3,96,512	942	80	79.4	94,807
7.	**L &S**	521	16588	14976	31,564	-	31,564	903	2	76.8	6,674
8.	**Mandi**	3338	498065	501712	9,99,777	62,637	9,37,140	1,007	253	81.5	2,19,145

9.	**Shimla**	3231	425039	388,971	8,14,010	2,01,351	6,12,659	915	159	83.6	1,84,362
10.	**Sirmaur**	976	276289	2,53,566	5,29,855	57,165	4,72,690	918	188	78.8	98,208
11.	**Solan**	2544	308754	271,566	5,80,320	1,02147	4,78,173	880	300	83.7	1,22,425
12.	**Una**	848	263692	257481	5,21,173	44,913	4,76,260	976	338	86.5	1,10,332
Total	**HP**	**20690**	**3481873**	**3382729**	**6864602**	**688552**	**6176050**	**972**	**123**	**82.8**	**1483280**

Source: Deptt. of Economics and Stats.

Table 1.6 Profile of the state in respect of Agriculture, Road, Irrigation, Primary Health Centers, Primary School, Panchayat Ghar

S. No	Name of the district	Agriculture Sector				Road (in Kms)	No. of PHC	No. of PS	No. of Panchayat
		Cultivated Area (in ha)	Total No. of farmers	No of SMF**	No. of landless agriculture labourers				
1.	Bilaspur	31459	56097	50325	2923	1701	35	1379	151
2.	Chamba	43389	70012	65232	1655	3257	42	2824	283
3.	Hamirpur	40939	72926	63708	3291	1893	26	1200	229
4.	Kangra	127204	230416	206944	39534	5951	80	4133	748
5.	Kinnaur	9687	10507	8463	1101	1060	21	453	65
6.	Kullu	40028	67753	64452	5590	1907	17	1896	204
7.	Lahaul-Spiti	3461	4152	3015	339	1256	16	383	41
8.	Mandi	96073	149654	135546	6518	5667	63	3916	469
9.	Shimla	80581	109868	92694	9814	5405	86	3400	363
10.	Sirmaur	44646	49046	33993	5767	3062	36	2353	228
11.	Solan	40894	50145	35988	6309	2961	33	1913	211
12.	Una	40395	62807	51910	11330	1929	19	1389	234
Total	**Himachal Pradesh**	**598756**	**933383**	**812270**	**94,171**	**36049**	**474**	**25239**	**3226**

Source: Deptt. Of Economics and Statistic

Small and Marginal Farmers

Current Disaster

LOSS CAUSED DUE TO DROUGHT LIKE SITUATION.

Weather summery for the month of January 2021 (i.e. 01st January to 31st January)

- Rainfall occurred in Himachal Pradesh in the month of January-2021 was deficit. During this month, 37.6 mm precipitation was recorded in Himachal, which is (-58%) below than normal rainfall.
- All the twelve districts in HP received deficit rainfall in the month of January 2021
- There were 2 rainfall/snowfall spells in Himachal Pradesh. Rest of the days was dry during this month.

Weather summery for the month of February 2021 (i.e. 01st February to 28th February)

- Rainfall occurred in Himachal Pradesh in the month of Febraury-2021 was deficit. During this month, 20.8 mm precipitation was recorded in Himachal, which is (-80%) below than normal rainfall.
- All the twelve districts in HP received deficit rainfall in the month of February 2021
- There were 1 rainfall/snowfall spells in Himachal Pradesh. Rest of the days was dry during this month.

Weather summery for the month of March 2021 (i.e. 01st March to 31st March)

- Rainfall occurred in Himachal Pradesh in the month of March-2021 was deficit. During this month, 20.8 mm precipitation was recorded in Himachal, which is (-62%) below than normal rainfall.
- All the twelve districts in HP received deficit rainfall in the month of February 2021

• There were 5 rainfall/snowfall spells in Himachal Pradesh. Rest of the days was dry during this month.

Seasonal Precipitation

- **During the Pre Monsoon Season (i.e. from 1st Mar to 31st May 2021) 105.5 mm** precipitation occurred in Himachal Pradesh which is 11% less than from the normal precipitation. This precipitation comes in the normal range of precipitation i.e. between the range of -19% to +19%.
- Out of total 12 districts of the state of HP, 5 districts viz. Mandi (48%), Solan (41%), Shimla 35%), Sirmaur (35%) and Kullu (30%), have received excess rainfall, 4 districts viz. Kangra (7%), Una (2%), Kinnaur (-9%) and Chamba (-12%) have received normal rainfall. And rest of the 3 districts viz. Lahul & Spiti (-28%), Bilaspur (-24%) and Hamirpur (-22%) have deficient rainfall during Pre-Monsoon.
- Out of these 17 spells during the whole season, 11 spells gave fairly widespread (many places-51% to 75% stations) to widespread (most places (>75% stations) precipitation.

Monthly precipitation during the Summer-season:

In the month of March-2021:

- *In the month of March-2021, 41.7 mm precipitation recorded in Himachal, which is 62% (large deficient precipitation) less than normal precipitation occurred in Himachal Pradesh. All the twelve districts in HP received either deficient (-20% to -59%) or large deficient (< - 59%) precipitation during this month. There were 04 spells of precipitation during March- 2021.*
- **On 08th Mar 2021:** Precipitation occurred at most places over the state. Significant r**ainfall was at**: Rampur: 32.5mm, Saharan: 31.0mm, Jhanjheli: 28.0mm, Bijahi: 26.0mm, Gohar: 26.0mm, Kumarsain: 21.6mm, Shillaro: 21.1mm. **Snowfall** occurred **at:** Hansa: 5.0cm, Sumdo: 4.0cm. Kalpa: 2.0cm.
- **On 22nd Mar 2021:** Light to moderate precipitation occurred at most places over the state. Significant **Rainfall was at:** Manali: 30mm Tissa: 27.0mm and Gohar :23.0mm. And s**nowfall was at**: Udaipur25.8cm, , Gondala:15cm , Keylong: 9.0cm Hansa: 5.0cm,
- **On 23rd March** -Precipitation occurred at most places

over the state.
Rainfall: Dalhousie(Chamba):42.0mm,Rampur(Shimla):25.5mm,Manali(Kullu):20.0mm, Shimla(Shimla):19.7mm. **Snowfall**-Gondala20.5cm,Hansa:7.6cm,Kalpa:5cm

- **On 24th March** Precipitation occurred at most places over the state. **Rainfall:** Gohar(Mandi):25.0mm,Dalhousie,AWS (Chamba):17.0mm ,Saharan(Shimla):15.0mm.**Snowfall-** Keylong:10.0cm,Kalpa:6.4cm

In the month of Apr-2021

- During this month, 111.5 mm precipitation recorded in Himachal, which is 62% greater than normal precipitation. Among the twelve districts, two districts Chamba and Kullu in HP received Excessive rainfall and other ten districts received large excessive rainfall. There were 05 spells of precipitation during May month.
- **On 07th April**-Light to moderate rainfall with isolated heavy occurred at most places over the state. **Snowfall:** Gondla: 30.0 cm, Hansa: 25.4 cm,Pooh:17.7 cm,Kalpa:15.0 cm.
- **On 17th April**- Moderate Rainfall occurred over most places over the state.
- **Snowfall**-Keylong: 3.0cm and Hansa: 2.1cm (both in Lahul and Spiti),
- **Rainfall**: Bharmaur(Chamba):16.4mm, Dalhousie (Chamba):14.0mm, Keylong (LahulSpiti):10.0mm and Manali (Kullu):9.0mm,
- **On 18th April** -Moderate Precipitation occurred over most places over the state. **Snowfall-** Gondla:(Lahul and Spiti):15.4cm, **Rainfal**:Manali(Kullu):49.0mm,Seobagh(Kullu)45.8mm ,Dalhousie (Chamba):36.0mm, Jogindernagar(Mandi):30.0mm. Light Hail Occurred in Sangrarh (Sirmaur district).
- Precipitation occurred at most places over the state. **Snowfall**: Keylong: 12.0 cm, Kalpa: 11.4.

In the month of May-2021

- In the month of May-2021. During this May month 63.8mm precipitation was recorded in Himachal, which is 04% less than normal precipitation. There were 08 spells of precipitation during May month.
- On 5th may Light to moderate rainfall occurred at many places over the state withWidespread thunder activity. **Rainfall:** Solan: 43.4 mm, Kothi: 35.4 mm, Dharamshala: 35.6 mm, Dalhousie

  AWS: 24.0 mm, Manali: 22.0 mm, Baldwara: 22.0 mm, AMS Shimla: 20.9 mm, Jogindernagar:
  20.0 mm, Kandaghat: 17.6 mm.
- **On 7th May** Light to Moderate rainfall occurred at many places over the state withWidespread Thunder Activity. **Rainfall:** Sarahan: 30.0 mm, Jogindernagar: 21.0 mm,Jatton Barrage: 18.8 mm, Paonta Sahib: 14.2 mm, Sujanpura Tira: 14.0 mm, Solan: 11.6 mm.
- **On 8th may** Light to moderate rainfall occurred at many places over the state with Widespread Thunder Activity. **Rainfall:** Kandaghat: 58.2 mm, Shillaro: 40.0 mm, Dharampur: 40.1 mm, Solan: 33.2 mm, Kasauli: 33.0 mm, Chamba AWS: 33.0 mm
- **On 13th May**-Light to Moderate rainfall occurred at most places over the state. Widespraed Thunder Activity. Hailstorm at isolated places in Shimla and Chamba district. **Rainfall:** Dharamshala: 65.4 mm, Malan ARG: 57.0 mm, Mandi: 31.2 mm, Kumarsain: 26.8 mm, Rohru: 26.5 mm, Palampur: 24.2 mm, Kangra Aero: 20.7 mm, Narkanda AWS: 21.5 mm.
- **On 15th May** Light to Moderate rainfall occurred at many places over the state.**Rainfall:** Shillaro: 36.0 mm, Solan: 29.3 mm, Tinder: 26.07 mm, Bijahi: 25.0 mm, Gohar: 24.0 mm, Banjar: 23.0 mm, Ghamroor: 22.4 mm, Sundernagar: 19.2 mm.
- **On 20th May** Light to moderate Percipitation occurred at scattered places over the state.**Snowfall**:Hansa(Lahual and Spiti):10cm **Rainfall:** Kalpa(Kinnour):44.8mm, Rekong- Peo(kinnour):43.0, Pooh(Kinnour):26.0mm, and Rohru(Shimla):24.5mm
- **On 21th May** Light to moderate Rainfall occurred at scattered places over the state. **Rainfall:** Tissa(Chamba):40.8mm, Chamba: 21.0mm, Kalpa(Kinnaur):18.6mm, Rekong- Peo(Kinnaur):18.5mm, and Dalhousie(Chamba):17.0mm

Temperature

Maximum Temperature: observed in the district of **Una :42.7^{0}C** on 27th May 2021

Minimum Temperature: observed in Keylong **-6.1^{0}C** 24th April 2021

Table 1. Precipitation of Summer Season (March to May) for the years from 2004 to 2021

YEAR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Actual R/F	90	136	144	220	101	131	157	168	134	130	249	313	230	207	143	134	273	217.1
%dep. of R/F	-63	-42	-42	-11	-59	-47	-31	-26	-41	-42	10	39	2	-15	-41	-45	21	-11

LEGEND: L. EXCESS (+60% OR MORE) EXCESS (+20% TO +59%) NORMAL (+19% TO -19%)
DEFICIENT (-20% TO -59%) L. DEFICIENT (-60% TO -99%) NO RAIN (-100%) NO DATA

Rainfall of Summer Season (Mar-Apr) -2021			
Districts	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure fromthe normal r/f
BILASPUR	105.5	138.2	-24
CHAMBA	280.1	316.6	-12
HAMIRPUR	108.6	140.1	-22
KANGRA	187.1	174.7	7
KINNAUR	236.1	258.5	-9
KULLU	348.7	268.6	30
LAHAUL & SPITI	238	329.5	-28
MANDI	269.3	181.4	48
SHIMLA	274.5	205.1	34
SIRMAUR	143.3	105.8	35
SOLAN	189.1	133.9	41
UNA	95.8	93.7	2
Himachal Pradesh	217	243.4	-11

LEGEND: L. EXCESS (+60% OR MORE) EXCESS (+20% TO +59%) NORMAL (+19% TO -19%)
DEFICIENT (-20% TO -59%) L. DEFICIENT (-60% TO -99%) NO RAIN (-100%) NO DATA

Rainfall for the m/o May-2021			
Districts	Actual Rainfall(mm)	Normal Rainfall (mm)	% Departure fromthe normal r/f
BILASPUR	17.8	48.4	-63
CHAMBA	109.2	93.5	17
HAMIRPUR	34.6	49.7	-30
KANGRA	77.4	53.1	46
KINNAUR	59.1	62.3	-5
KULLU	73.8	69.1	7
LAHAUL & SPITI	33.5	74.9	-55
MANDI	107.5	65.3	65
SHIMLA	115.1	71.7	60
SIRMAUR	91.3	36.8	148
SOLAN	107	49.6	116
UNA	28.1	31.5	-11
Himachal Pradesh	63.8	66.8	-4

LEGEND: L. EXCESS (+60% OR MORE) EXCESS (+20% TO +59%) NORMAL (+19% TO -19%)
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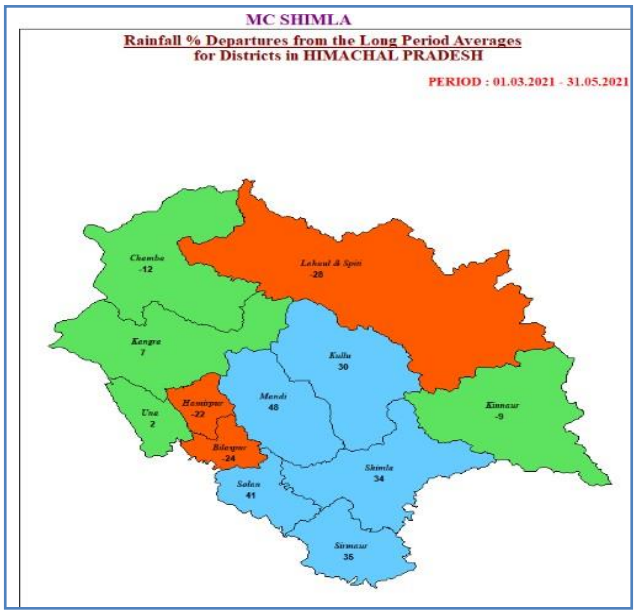

In Summer Season, State of Himachal Pradesh has faced drought like situation hazard:

Drought like situation:

The drought-like conditions prevailing in Himachal Pradesh have hit water supply, Agriculture and Horticulture crops.

This is not the first time that the state has seen such a dry spell. In 2013 and 2018, too, the state had received less rain and snow during winter, leading to similar conditions. As per IMD reports, this year the state has received 70% less rainfall in January and February, but pre-monsoon showers in mid-June are likely to bring some respite.

Extent of damages:

The damages are detailed here under:

1. **Damage to Horticulture Crops:**

   Horticulture is an important sector of economic development in the state, which is contributing around ₹ 6518.18 crore towards state economy. It has a capacity to generate more income and employment per unit area. Fruit crops occupy about 2.33 lakh Ha area in the state (2019-20). Apple, Peach, Plum, Mango and citrus are the major fruit crops grown in the state and constitute about 83% of total fruit production. Apple is the dominating fruit crop of the state occupying about 48.93% of the total area under fruits & about 84.60% of the total production and the state earned its name as **"Apple State of India"** is marching forward as **"Fruit bowl of India"**. About 6 lac families are directly or indirectly involved in the Horticulture primarily fruit production & its allied activities viz. Bee Keeping, Mushroom production, Floriculture and Fruit processing.

   During the past couple of years the state is witnessing natural fury/ calamities at intermittent intervals particularly losses being inflicted during

the April and May resulting thereby the fluctuating production and productivity of fruit crops. Major losses generally inflicted during this period are losses in the form of mortality of young nursery plants due to drought. Major losses to fruit crops are experienced during April and May as the fruit crops are at developmental stage, hailing followed by unseasonal snowfall reduce the quantity as well as quality of the fruits, break the branches of trees

During the month of Feb to March, Drought like situation to damaged the fruit crops in districts Hamirpur, Mandi, Shimla, Sirmour and Una. Period were to the tune of ₹ 147.34 crore. (Details at Annexure-A)

(Rs. 147.34 Crore)

2. Damage to Agriculture Crops:

Himachal Pradesh is a relatively small state in area and population and is geographically different from most Indian states in the plains. The State lies between 30˚22'40" and 33˚12' 20" north latitude and 75˚45' 55" and 79˚04'20" east longitude. Himachal Pradesh has relatively abundant water resources from major five river systems, mostly originating from glaciers. The five major river basins cover around 90% of the geographical area. The surface water resources of these river systems are perennial, originating from glaciers, and the flow is further augmented by run-off from the downstream catchments. Most glaciers are small in size with length of 2-25 km and accumulation zone of 2-4 sq km. Due to the adverse effect of global warming phenomenon, constant recession phenomenon is recently hastening in these glaciers.

Climate and Agro-ecological Zones

Climatically, Himachal Pradesh is different from most plain states in India. In the State, three seasons viz. Winter season (October to February), Summer season (March to June) and Monsoon season (July to September) are there. However, due to wide range in altitude, the climate of the State varies from sub-humid tropical (Elevation 350-1000 m) in the southern low tracts, warm and temperate (Elevation 1001-1,500 m), cool and temperate (Elevation 1,501-2,500 m),

and cold alpine and glacial (Elevation 2,501- 6,975 m) in the northern and eastern mountain ranges.

Damage caused to Agricultural crops of Rabi, 2020-21 season due to Drought.

In the State of H.P., the sowing of Rabi crops normally starts in October and goes up to first fortnight of December. The percent departure of rainfall in the months of October, November and December, 2020 was to the extent of- 99%, 112% and -22%, respectively as per reports of IMD due to which the crops could not be sown on time. Subsequently during Jan, Feb, Mar, 2021 the peak period, the departure of rainfall was to the extent of -57%-81%-62% which was deficient resulting into drought like situation in the state and an area of about 148908 Hectares was damaged. The total loss to the tune of **Rs. 145.42 Crore** was assessed by the Department. (Details at Annexure-B)

(Rs. 145.42 Crore)

3. Jal Shakti Vibhag:

Jal Shakti department has around 979 Water supply schemes, of which 40% have been affected. Dept. has spent of funds to mitigate the prevailing drought situation in the State.

- Interlinking of drought effected schemes with nearby water supply & Irrigation schemes where sufficient water is available – Rs. 70.99 Cr.
- Repair of Handpumps, Energization of Handpumps, and Installation of new Handpumps/Borewells in drought prone Red Zone Areas- Rs. 37.07 Crore.
- Other Remedial Measures.-Rs. 35.00 Cr.

(Details at Annexure- C)

(Rs. 143.06 Crore)

Cumulative Losses – Rs. 435.82 Crore

Sr. No.	Sectors	Losses(Rs In Crore)
1.	Horticulture	147.34
2.	Agriculture	145.42
3.	Jal Shakti	143.06
Total		435.82

In view of large scale damages and losses, the allocation of Fund under SDRF for the year 2021-22 is insufficient to meet restoration of damages and losses. For current financial year, allocation of Rs. 454.00 crores has been made to State under SDRF, out of which 50% funds need for Covid-19 pandemic. Besides, 20% and 10% funds are also earmarked for Mitigation Fund and Capacity Building respectively. Actual funds available for relief and restoration works remains 20% which are highly insufficient keeping in view the extent of damages and losses sustained during Summer Season-2021.

In view of the above, additional funds are needed out of NDRF to carryout necessary relief and restoration work of the damaged infrastructure in the hilly State.

Preparatory measures taken to prevent/reduce losses from disasters during this period:

- Hon'ble Chief Minister, Chief Secretary, Additional Chief Secretary (Rev-DM) and Special Secretary (Rev-DM) monitored the drought like situation & Hailstorm situation on daily basis.
- The State government was well prepared for Drought like situation, and a videoconference with all the DCs was held on 17th of April, 2021 under the chairmanship of Additional Chief Secretary (Revenue).
- The State has released the SDRF funds to mitigate the disasters.
- The DEOCs were monitoring and reporting incidents/losses and damages regularly and the State EOC generated cumulative loss reports on daily basis.
- Control Rooms at SEOC/DEOCs are functioning round the clock.
- Weather forecast & early warning was regularly disseminated to all stakeholders by different means.
- Do's and Don'ts were broadcasted through AIR, TV, Print and Other electronic media about winter preparedness measures.

Summary of the total requirement of funds under NDRF:

Sr. No.	Items/Sectors	Amount required (Rs. In Crore)	As per MHA GoI Norms (Rs. In Crore)
Drought like Situation			
1	Agriculture + Horticulture		
(a)	Horticulture crop loss	147.34	115.17
(b)	Agriculture crop loss	145.42	76.06
(c)	Loss of Horticulture land	21793.00 Hec.	6398.60 Hec.
(d)	Loss of Agriculture land	153809.34 Hec.	93446.50 Hec.
2.	Jal Shakti	143.06	143.06
	Grand Total	**435.82**	**334.29**

Annexure - A

No. 29-30/2021-Udyan-IV
Directorate of Horticulture
Himachal Pradesh, Shimla-2

From

Director of Horticulture,
Himachal Pradesh

To

The Special Secretary (Rev-DM) to the
Government of Himachal Pradesh.

28 SEP 2021

Dated Shimla-171002, the September, 2021

Subject:- **Regarding development of Memorandum of losses due to different hazard happened in Monsson 2021.**

Sir,

This is in continutation to letter of even No. dated 25.09.2021 on the subject cited above.

In this context, the requisite information pertaining to Horticulture Department is being enclosed for further necessary action please.

Encls: As above

Yours faithfully,

Director of Horticulture,
Himachal Pradesh.
Ph.No. 0177-2842390
Email-horticul-hp@nic.in

Assessment of Horticulture Cropped Area Affected due to Drought like Situation **Annexure-A**

Name of calamity : **Drought**
Period of Occurrence: **April, 2021**

Name of District	Name of Horticulture crop affected	Category wise number of farmers affected				Category wise area affected (in hect.)				Loss to Nursery plants			Loss to fruit Trees			Expected loss to fruit crop				Total Value (in lakh) (13+16+ 18+20)	Total area affected where crop loss is <33%	Total area affected where crop loss is >33%
		No. of marginal farmers affected	No of small farmers affected	No. of other farmers affected	Total nos of farmers affected	Marginal farmers	Small farmers	Other farmers	Total area affected	No. of plants completely destroyed	No. of plants partially damaged	Value (in Lakh Rs.)	No. of trees completely destroyed	No. of trees partially damaged	Value (in Lakh Rs.)	Quantitative loss (MT)	Value (in Lakh)	Qualitative loss (MT)	Value (in lakh)			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Bilaspur	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamba	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamirpur	Fruit crops	609.00	290.00	124.00	1,023.00	89.35	37.32	13.03	139.70	-	-	-	37,092.00	-	61.47	760.00	92.00	-	-	153.47	139.70	-
Kangra	Fruit crops																					
Kinnaur	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kullu	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lahaul Spiti	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mandi	Fruit crops	9,390.00	334.00	3,193.00	12,917.00	3,163.00	287.00	2,302.00	5,752.00	-	-	-	-	573.00	114.60	-	-	114.60	-	114.60	5,752.00	-
Shimla	Fruit crops	17,913.00	6,351.00	586.00	24,850.00	8,828.20	4,801.10	634.00	14,263.30	3,000.00	27,000.00	3,002.70	4,000.00	27,043.00	4,208.54	11,033.00	3,686.00	16,625.00	3,343.10	14,240.34	8,713.30	5,550.00
Sirmour	Fruit crops	950.00	870.00	65.00	1,885.00	430.00	525.00	60.00	1,015.00	-	-	-	-	-	-	1,664.00	166.40	-	-	166.40	166.40	848.60
Solan	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Una	Fruit crops	1,970.00	3,498.00	962.00	6,430.00	199.00	335.00	89.00	623.00	-	-	-	-	-	-	742.00	53.77	100.00	1.05	59.04	623.00	-
	G.Total	**30832.00**	**11343.00**	**4930.00**	**47105.00**	**12709.55**	**5985.42**	**3098.03**	**21793.00**	**3000.00**	**27000.00**	**3002.70**	**41092.00**	**27616.00**	**4384.61**	**14199.00**	**3998.17**	**16839.60**	**3344.15**	**14733.85**	**15394.40**	**6398.60**

Rs. 147.34 Crore

Assessment of Horticulture Cropped Area Affected due to Drought like Situation

Name of calamity : Drought

Period of Occurrence: April, 2021

Name of District	Name of Block	Name of Horticulture crop affected	Category wise number of farmers affected				Category wise area affected (in hect.)				Loss to Nursery plants			Loss to fruit Trees			Expected loss to fruit crop				Total Value (in lakh) (13+16+ 18+20)	Total area affected where crop loss is <33%	Total area affected where crop loss is >33%
			No. of marginal farmers affected	No of small farmers affected	No. of other farmers affected	Total nos of farmers affected	Marginal farmers	Small farmers	Other farmers	Total area affected	No. of plants completely destroyed	No. of plants partially damaged	Value (in Lakh Rs.)	No. of trees completely destroyed	No. of trees partially damaged	Value (in Lakh Rs.)	Quantitative loss (MT)	Value (in Lakh)	Qualitative loss (MT)	Value (in lakh)			
1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**
Hamirpur	Sujanpur	Fruit crops	68.00	29.00	9.00	106.00	9.91	5.94	0.97	16.82		-	0	3,829.00	-	6.47	54.00	5.80	-	-	12.27	16.82	-
	Bhijiri	Fruit crops	60.00	20.00	41.00	121.00	18.08	3.83	2.45	24.36	-	-	-	7,593.00	-	12.83	184.00	22.80	-	-	35.63	24.36	-
	Nadaun	Fruit crops	159.00	107.00	50.00	316.00	21.74	14.10	5.76	41.60	-	-	-	11,400.00	-	18.67	167.00	18.40	-	-	37.07	41.60	-
	Bhoranj	Fruit crops	293.00	107.00	24.00	424.00	30.45	8.71	3.85	43.01	-	-	-	11,189.00	-	18.18	163.00	19.60	-	-	37.78	43.01	-
	Hamirpur	Fruit crops	18.00	12.00	-	30.00	8.30	3.60	-	11.90	-	-	-	2,653.00	-	4.53	101.00	12.20	-	-	16.73	11.90	-
	Bamsan	Fruit crops	11.00	15.00	-	26.00	0.87	1.14	-	2.01	-	-	-	428.00	-	0.79	91.00	13.20	-	-	13.99	2.01	-
G.Total			**609.00**	**290.00**	**124.00**	**1023.00**	**89.35**	**37.32**	**13.03**	**139.70**	**0.00**	**0.00**	**0.00**	**37092.00**	**0.00**	**61.47**	**760.00**	**92.00**	**0.00**	**0.00**	**153.47**	**139.70**	**0.00**

Assessment of Horticulture Cropped Area Affected due to drought

Period of Occurrence: April, 2021

Name of District	Name of Block	Name of Horticulture crop affected	Category wise number of farmers affected				Category wise area affected (in hect.)				Loss to Nursery plants			Loss to fruit Trees			Expected loss to fruit crop				Total Value (in lakh) (13+16+ 18+20)	Total area affected where crop loss is <33%	Total area affected where crop loss is >33%
			No. of marginal farmers affected	No of small farmers affected	No. of other farmers affected	Total nos of farmers affected	Marginal farmers	Small farmers	Other farmers	Total area affected	No. of plants completely destroyed	No. of plants partially damaged	Value (in Lakh Rs.)	No. of trees completely destroyed	No. of trees partially damaged	Value (in Lakh Rs.)	Quantitative loss (MT)	Value (in Lakh)	Qualitative loss (MT)	Value (in lakh)			
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Mandi	Chauntra.	Fruit crops	750.00	27.00	278.00	1,055.00	251.00	23.00	210.00	484.00	-	-	-	-	48.00	9.60	-	-	9.60	-	9.60	484.00	-
	Balh.	Fruit crops	760.00	25.00	285.00	1,070.00	255.00	22.00	215.00	492.00	-	-	-	-	49.00	9.80	-	-	9.80	-	9.80	492.00	-
	Karsog.	Fruit crops	1,550.00	48.00	450.00	2,048.00	450.00	42.00	275.00	767.00	-	-	-	-	71.00	14.20	-	-	14.20	-	14.20	767.00	-
	Dharampur	Fruit crops	850.00	34.00	320.00	1,204.00	265.00	29.00	210.00	504.00	-	-	-	-	50.00	10.00	-	-	10.00	-	10.00	504.00	-
	Drang.	Fruit crops	770.00	28.00	310.00	1,108.00	257.00	24.00	222.00	503.00	-	-	-	-	50.00	10.00	-	-	10.00	-	10.00	503.00	-
	Gopalpur.	Fruit crops	745.00	23.00	290.00	1,058.00	250.00	20.00	230.00	500.00	-	-	-	-	50.00	10.00	-	-	10.00	-	10.00	500.00	-
	Sundernagar	Fruit crops	905.00	33.00	350.00	1,288.00	350.00	27.00	240.00	617.00	-	-	-	-	61.00	12.20	-	-	12.20	-	12.20	617.00	-
	Mandi Sadar	Fruit crops	950.00	38.00	385.00	1,373.00	345.00	33.00	245.00	623.00	-	-	-	-	62.00	12.40	-	-	12.40	-	12.40	623.00	-
	Gohar.	Fruit crops	950.00	36.00	250.00	1,236.00	350.00	30.00	220.00	600.00	-	-	-	-	66.00	13.20	-	-	13.20	-	13.20	600.00	-
	Seraj.	Fruit crops	1,160.00	42.00	275.00	1,477.00	390.00	37.00	235.00	662.00	-	-	-	-	66.00	13.20	-	-	13.20	-	13.20	662.00	-
	Bali Chowki	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		G.Total	**9,390.00**	**334.00**	**3,193.00**	**12,917.00**	**3,163.00**	**287.00**	**2,302.00**	**5,752.00**	**-**	**-**	**-**	**-**	**573.00**	**114.60**	**-**	**-**	**114.60**	**-**	**114.60**	**5,752.00**	**-**

Assessment of Horticulture Cropped Area Affected due to drought

Period of Occurrence:			**April, 2021**																				
Name of District	**Name of Block**	**Name of Horticulture crop affected**	**Category wise number of farmers**				**Category wise area affected (in hect.)**				**Loss to Nursery plants**			**Loss to fruit Trees**			**Expected loss to fruit crop**				**Total Value (in lakh) (13+16+18+20)**	**Total area affected where crop loss is <33%**	**Total area affected where crop loss is >33%**
			No. of marginal farmers affected	**No of small farmers affected**	**No. of other farmers affected**	**Total nos of farmers affected**	**Marginal farmers**	**Small farmers**	**Other farmers**	**Total area affected**	**No. of plants completely destroyed**	**No. of plants partially damaged**	**Value (in Lakh Rs.)**	**No. of trees completely destroyed**	**No. of trees partially damaged**	**Value (in Lakh Rs.)**	**Quantitative loss (MT)**	**Value (in Lakh)**	**Qualitative loss (MT)**	**Value (in lakh)**			
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sirmour	Rajgarh	Fruit Crops	230	190	10	430	100	305	45	450	0	0	0	0	0	0	600	60	0	0	60	60	0
	Pachhad	Fruit Crops	150	200	20	370	70	40	0	110	0	0	0	0	0	0	100	10	0	0	10	10	0
	Sangrah	Fruit Crops	190	210	15	415	75	30	9	114	0	0	0	0	0	0	150	15	0	0	15	15	0
	Shillai	Fruit Crops	160	100	5	265	35	37	3	75	0	0	0	0	0	0	100	10	0	0	10	10	0
	Nahan	Fruit Crops	120	90	5	215	100	32	3	135	0	0	0	0	0	0	150	15	0	0	15	15	0
	Paonta Sahib	Fruit Crops	100	80	10	190	50	81	0	131	0	0	0	0	0	0	564	56.4	0	0	56.4	56.4	0
		G.Total	950	870	65	1,885	430.00	525.00	60.00	1,015.00	-	-	-	-	-	-	1,664	166.40	-	-	166.40	166.40	-

Rs in Crore **144.62**

Assessment of Horticulture Cropped Area Affected due Drought like Situation

Period of Occurrence: **April, 2021**

Name of District	Name of Block	Name of Horticulture crop affected	Category wise number of farmers affected				Category wise area affected (in hect.)				Loss to Nursery plants			Loss to fruit Trees			Expected loss to fruit crop				Total Value (in lakh) (13+16+18+20)	Total area affected where crop loss is <33%	Total area affected where crop loss is >33%
			No. of marginal farmers affected	No of small farmers affected	No. of other farmers affected	Total nos of farmers affected	Marginal farmers	Small farmers	Other farmers	Total area affected	No. of plants completely destroyed	No. of plants partially damaged	Value (in Lakh Rs.)	No. of trees completely destroyed	No. of trees partially damaged	Value (in Lakh Rs.)	Quantitative loss (MT)	Value (in Lakh)	Qualitative loss (MT)	Value (in lakh)			
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Shimla	Mashobra	Fruit crops	50.00	77.00	73.00	200.00	6.20	11.10	-	17.30	-	-	-	-	43.00	5.50	-	-	120.00	41.10	46.60	17.30	-
	Basantpur	Fruit crops	425.00	120.00	-	545.00	52.00	14.00	-	66.00	-	-	-	-	-	-	23.00	9.50	5.00	2.00	11.50	66.00	
	Chopal	Fruit crops	3000	1000	25	4,025.00	1500	1000	100	2,600.00	0	0	0	0	0	0	1300	325	0	0	325.00	2600	0
	Chhohara.	Fruit crops	5700	2350	200	8,250.00	2280	1645	200	4,125.00	1000	10000	1001	2000	10000	2075.2	3000	1050	5000	1000	5,126.20	2325	1800
	Rohru(Tikker & Sheelghat)	Fruit crops	6600	2350	254	9,204.00	3300	1645	254	5,199.00	2000	17000	2001.7	2000	17000	2127.84	6000	2100	11500	2300	8,529.54	1449	3750
	Jubal Kotkhai	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Theog	Fruit crops	1,050.00	400.00	10.00	1,460.00	600.00	420.00	20.00	1,040.00	-	-	-	-	-	-	468.00	140.40	-	-	140.40	1,040.00	
	Rampur	Fruit crops	715.00	44.00	16.00	775.00	770.00	51.00	38.00	859.00	-	-	-	-	-	-	162.00	41.10	-	-	41.10	859.00	-
	Nankhari	Fruit crops	373.00	10.00	8.00	391.00	320.00	15.00	22.00	357.00							80.00	20.00			20.00	357.00	
	Narkanda	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Kupvi	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Tutu	Fruit crops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		G.Total	**17,913.00**	**6,351.00**	**586.00**	**24,850.00**	**8,828.20**	**4,801.10**	**634.00**	**14,263.30**	**3,000.00**	**27,000.00**	**3,002.70**	**4,000.00**	**27,043.00**	**4,208.54**	**11,033.00**	**3,686.00**	**16,625.00**	**3,343.10**	**14,240.34**	**8,713.30**	**5,550.00**

Assessment of Horticulture Cropped Area Affected due to Drought like Situation

Period of Occurrence: April, 2021

Name of District	Name of Block	Name of Horticulture crop affected	Category wise number of farmers affected				Category wise area affected (in hect.)				Loss to Nursery plants			Loss to fruit Trees			Expected loss to fruit crop				Total Value (in lakh) (13+16+ 18+20)	Total area affected where crop loss is <33%	Total area affected where crop loss is >33%
			No. of marginal farmers affected	No of small farmers affected	No. of other farmers affected	Total nos of farmers affected	Marginal farmers	Small farmers	Other farmers	Total area affected	No. of plants completely destroyed	No. of plants partially damaged	Value (in Lakh Rs.)	No. of trees completely destroyed	No. of trees partially damaged	Value (in Lakh Rs.)	Quantitative loss (MT)	Value (in Lakh)	Qualitative loss (MT)	Value (in lakh)			
1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**
UNA	Una	Fruit crops	382.00	702.00	186.00	1,270.00	42.00	61.00	17.50	120.50	-	-	-		-	-	151.76	11.10	20.00	1.054	12.15	120.50	-
	Amb	Fruit crops	398.00	700.00	197.00	1,295.00	34.00	70.00	17.50	121.50	-	-	-		-	-	140.70	10.12	20.00	1.054	11.17	121.50	-
	Bangana	Fruit crops	408.00	707.00	197.00	1,312.00	41.00	72.00	18.50	131.50	-	-	-		-	-	151.96	11.01	20.00	1.054	12.06	131.50	-
	Haroli	Fruit crops	385.00	695.00	181.00	1,261.00	41.00	61.00	18.00	120.00	-	-	-		-	-	146.87	10.63	20.00	1.054	11.68	120.00	-
	Gagret	Fruit crops	397.00	694.00	201.00	1,292.00	41.00	71.00	17.50	129.50	-	-	-		-	-	150.71	10.91	20.00	1.054	11.96	129.50	-
		G.Total	**1,970.00**	**3,498.00**	**962.00**	**6,430.00**	**199.00**	**335.00**	**89.00**	**623.00**	**-**	**-**	**-**	**-**	**-**	**-**	**742.00**	**53.77**	**100.00**	1.054	**59.04**	**623.00**	**-**

Annexure - B

No. Agr. H (8-P) F (13)-(1A)-4/2021
Directorate of Agriculture,
Himachal Pradesh.

From:

Director of Agriculture,
Himachal Pradesh.

To

The Principal Secretary (Rev-DM) to the
Govt. of H.P. Shimla-2.

Dated Shimla-5, the 28 Sept 2021.

Subject: **Submission of Memorandum by the State Government of Himachal Pradesh of damage due to Drought like situation and Hailstorm during summer 2021.**

Sir,

In continuation to this office letter of even No. dated 24th Sept, 2021 on the subject cited above, please find enclosed herewith the Revised/updated Block-wise report of damage to Rabi Crops of 2020-21 season due to Drought as well as Hailstorm/unseasonal rainfall/snowfall, for favour of information and necessary action please.

Encls: As above

Yours faithfully

Pruthi 28/09/21
Dr. Raj Krishan Pruthi (IAS)
Director of Agriculture,
Himachal Pradesh.

Department of Agriculture
Himachal Pradesh

Block-wise Loss report of Rabi 2020-21 season due to Drought like situation

Sr. No	Name of the Block affected	Total Agricultural area affected (in Hac.)	Area where crop loss is eqaul or more than 33%	Total Loss as Assessed Rs. in Lakhs	Rainfed (in Hac.)	Irrigated (in Hac.)	Perennial (in Hac.)	Assistance sought for different categories of crops (Rs. In Lacs)			Total Assistance sought (Rs. In lacs)
								Rainfed (Rs.6800(x col.6)	Irrigated (Rs 13500.x col.7)	Perennial (Rs. (18000 x col.8)	
1	2	3	4	5	6	7	8	9	10	11	12
	Bilaspur										
1	Sadar	4085.00	3076.00	653.68	2460.80	615.20	0.00	167.33	83.05	0.00	250.39
2	Ghumarwin	7075.00	5562.00	1162.41	4449.60	1112.40	0.00	302.57	150.17	0.00	452.75
3	Jhandutta	6075.00	4557.00	977.38	3645.60	911.40	0.00	247.90	123.04	0.00	370.94
4	Swarghat	3045.00	2035.00	465.90	1628.00	407.00	0.00	110.70	54.95	0.00	165.65
5	Naina Devi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**20280.00**	**15230.00**	**3259.37**	**12184.00**	**3046.00**	**0.00**	**828.51**	**411.21**	**0.00**	**1239.72**
	Chamba										
1	Chamba	1110.00	394.86	102.62	315.89	78.97	0.00	21.48	10.66	0.00	32.14
2	Mehla	775.00	0.00	52.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Bhatiyat	925.00	349.84	90.03	279.87	69.97	0.00	19.03	9.45	0.00	28.48
4	Salooni	233.00	121.43	42.95	97.14	24.29	0.00	6.61	3.28	0.00	9.88
5	Tissa	226.00	119.12	42.47	95.30	23.82	0.00	6.48	3.22	0.00	9.70
6	Bharmour	156.00	96.02	37.71	76.82	19.20	0.00	5.22	2.59	0.00	7.82
7	Pangi	146.00	92.73	37.01	74.18	18.55	0.00	5.04	2.50	0.00	7.55
	Total	**3571.00**	**1174.00**	**405.51**	**939.20**	**234.80**	**0.00**	**63.87**	**31.70**	**0.00**	**95.56**
	Hamirpur										
1	Hamirpur	3630.00	1506.00	97.00	1204.80	301.20	0.00	81.93	40.66	0.00	122.59
2	Bamsan	4231.00	1757.00	114.00	1405.60	351.40	0.00	95.58	47.44	0.00	143.02
3	Sujanpur Tihra	3928.00	1632.00	106.00	1305.60	326.40	0.00	88.78	44.06	0.00	132.84
4	Bhoranj	5439.00	2260.00	146.00	1808.00	452.00	0.00	122.94	61.02	0.00	183.96
5	Bijhri	6346.00	2640.00	171.00	2112.00	528.00	0.00	143.62	71.28	0.00	214.90
6	Nadaun	6648.00	2762.00	181.58	2209.60	552.40	0.00	150.25	74.57	0.00	224.83
	Total	**30222.00**	**12557.00**	**815.58**	**10045.60**	**2511.40**	**0.00**	**683.10**	**339.04**	**0.00**	**1022.14**

Department of Agriculture
Himachal Pradesh

Block-wise Loss report of Rabi 2020-21 season due to Drought like situation

Sr. No	Name of the Block affected	Total Agricultural area affected (in Hac.)	Area where crop loss is eqaul or more than 33%	Total Loss as Assessed Rs. in Lakhs	Rainfed (in Hac.)	Irrigated (in Hac.)	Perennial (in Hac.)	Assistance sought for different categories of crops (Rs. In Lacs)			Total Assistance sought (Rs. In lacs)
								Rainfed (Rs.6800(x col.6)	Irrigated (Rs 13500.x col.7)	Perennial (Rs. (18000 x col.8)	
1	2	3	4	5	6	7	8	9	10	11	12
	Kangra										
1	Baijnath	1672.00	1522.00	60.22	1217.60	304.40	0.00	82.80	41.09	0.00	123.89
2	Panchrukhi	1832.00	1297.00	51.11	1037.60	259.40	0.00	70.56	35.02	0.00	105.58
3	Bhawarna	922.00	822.00	31.23	657.60	164.40	0.00	44.72	22.19	0.00	66.91
4	Bhedu Mahadev	2191.00	2011.00	79.23	1608.80	402.20	0.00	109.40	54.30	0.00	163.70
5	Lamba Gaon	2598.00	2588.00	102.00	2070.40	517.60	0.00	140.79	69.88	0.00	210.66
6	Nagrota Bagwan	820.00	712.00	28.34	569.60	142.40	0.00	38.73	19.22	0.00	57.96
7	Kangra	922.00	719.00	28.76	575.20	143.80	0.00	39.11	19.41	0.00	58.53
8	Dehra	3876.00	3769.00	149.00	3015.20	753.80	0.00	205.03	101.76	0.00	306.80
9	Pragpur	3271.00	3199.00	126.37	2559.20	639.80	0.00	174.03	86.37	0.00	260.40
10	Nagrota Surian	3244.00	3244.00	129.61	2595.20	648.80	0.00	176.47	87.59	0.00	264.06
11	Dharamshala	701.00	619.00	23.11	495.20	123.80	0.00	33.67	16.71	0.00	50.39
12	Rait	1232.00	1042.00	40.12	833.60	208.40	0.00	56.68	28.13	0.00	84.82
13	Nurpur	3578.00	3578.00	141.20	2862.40	715.60	0.00	194.64	96.61	0.00	291.25
14	Fatehpur	3219.00	3176.00	126.30	2540.80	635.20	0.00	172.77	85.75	0.00	258.53
15	Indora	3442.00	3222.00	128.40	2577.60	644.40	0.00	175.28	86.99	0.00	262.27
	Total	**33520.00**	**31520.00**	**1245.00**	**25216.00**	**6304.00**	**0.00**	**1714.69**	**851.04**	**0.00**	**2565.73**
	Kinnaur										
1	Kalpa.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Pooh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Nichar.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Kullu										
1	Kullu	143.00	0.00	8.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Department of Agriculture
Himachal Pradesh

Block-wise Loss report of Rabi 2020-21 season due to Drought like situation

Sr. No	Name of the Block affected	Total Agricultural area affected (in Hac.)	Area where crop loss is eqaul or more than 33%	Total Loss as Assessed Rs. in Lakhs	Rainfed (in Hac.)	Irrigated (in Hac.)	Perennial (in Hac.)	Assistance sought for different categories of crops (Rs. In Lacs)			Total Assistance sought (Rs. In lacs)
								Rainfed (Rs.6800(x col.6)	Irrigated (Rs 13500.x col.7)	Perennial (Rs. (18000 x col.8)	
1	2	3	4	5	6	7	8	9	10	11	12
2	Naggar	120.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Banjar.	109.00	0.00	6.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Ani.	91.00	0.00	5.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Nirmand.	87.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**550.00**	**0.00**	**32.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	L/Spiti										
1	Lahaul.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	Mandi										
1	Mandi Sadar	4875.00	2745.00	143.56	2196.00	549.00	0.00	149.33	74.12	0.00	223.44
2	Balh.	5690.00	1485.00	50.10	1188.00	297.00	0.00	80.78	40.10	0.00	120.88
3	Sundernagar	3141.60	864.80	79.55	691.84	172.96	0.00	47.05	23.35	0.00	70.39
4	Gohar.	2697.04	436.00	90.55	348.80	87.20	0.00	23.72	11.77	0.00	35.49
5	Seraj.	110.00	0.00	115.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Karsog.	4592.00	1331.00	86.85	1064.80	266.20	0.00	72.41	35.94	0.00	108.34
7	Chauntra.	3929.20	3929.20	73.80	3143.36	785.84	0.00	213.75	106.09	0.00	319.84
8	Drang	5235.00	5235.00	159.20	4188.00	1047.00	0.00	284.78	141.35	0.00	426.13
9	Gopalpur.	2823.60	650.00	62.75	520.00	130.00	0.00	35.36	17.55	0.00	52.91
10	Dharampur.	2907.00	1376.00	142.50	1100.80	275.20	0.00	74.85	37.15	0.00	112.01
11	Bali Chowki	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**36000.44**	**18052.00**	**1004.36**	**14441.60**	**3610.40**	**0.00**	**982.03**	**487.40**	**0.00**	**1469.43**
	Shimla										
1	Basantpur.	905.00	532.50	437.78	426.00	106.50	0.00	28.97	14.38	0.00	43.35
2	Mashobra.	2030.00	0.00	421.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Department of Agriculture
Himachal Pradesh

Block-wise Loss report of Rabi 2020-21 season due to Drought like situation

Sr. No	Name of the Block affected	Total Agricultural area affected (in Hac.)	Area where crop loss is eqaul or more than 33%	Total Loss as Assessed Rs. in Lakhs	Rainfed (in Hac.)	Irrigated (in Hac.)	Perennial (in Hac.)	Assistance sought for different categories of crops (Rs. In Lacs)			Total Assistance sought (Rs. In lacs)
								Rainfed (Rs.6800(x col.6)	Irrigated (Rs 13500.x col.7)	Perennial (Rs. (18000 x col.8)	
1	2	3	4	5	6	7	8	9	10	11	12
3	Chopal.	246.00	246.00	170.00	196.80	49.20	0.00	13.38	6.64	0.00	20.02
4	Rohru.	349.00	0.00	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Jubal	370.00	0.00	92.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Chhohara.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Theog.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Rampur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Nankhari	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Narkanda	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Kupvi	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Tutu	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**3900.00**	**778.50**	**1191.00**	**622.80**	**155.70**	**0.00**	**42.35**	**21.02**	**0.00**	**63.37**
	Sirmour										
1	Nahan	1021.50	48.00	43.16	38.40	9.60	0.00	2.61	1.30	0.00	3.91
2	Paonta.	3785.00	67.00	1020.02	53.60	13.40	0.00	3.64	1.81	0.00	5.45
3	Pachhad.	2105.00	1287.00	70.81	1029.60	257.40	0.00	70.01	34.75	0.00	104.76
4	Rajgarh	1030.00	33.00	292.60	26.40	6.60	0.00	1.80	0.89	0.00	2.69
5	Sangrah.	2480.00	1376.00	663.45	1100.80	275.20	0.00	74.85	37.15	0.00	112.01
6	Shillai.	398.00	99.00	6.12	79.20	19.80	0.00	5.39	2.67	0.00	8.06
	Total	**10819.50**	**2910.00**	**2096.16**	**2328.00**	**582.00**	**0.00**	**158.30**	**78.57**	**0.00**	**236.87**
	Solan										
1	Kunihar	5200.00	4684.00	1299.38	3747.20	936.80	0.00	254.81	126.47	0.00	381.28
2	Solan.	270.00	140.00	389.81	112.00	28.00	0.00	7.62	3.78	0.00	11.40
3	Dharampur.	2674.00	2140.00	974.53	1712.00	428.00	0.00	116.42	57.78	0.00	174.20
4	Kandaghat.	210.00	70.00	259.89	56.00	14.00	0.00	3.81	1.89	0.00	5.70

Department of Agriculture
Himachal Pradesh

Block-wise Loss report of Rabi 2020-21 season due to Drought like situation

Sr. No	Name of the Block affected	Total Agricultural area affected (in Hac.)	Area where crop loss is eqaul or more than 33%	Total Loss as Assessed Rs. in Lakhs	Rainfed (in Hac.)	Irrigated (in Hac.)	Perennial (in Hac.)	Assistance sought for different categories of crops (Rs. In Lacs)			Total Assistance sought (Rs. In lacs)
								Rainfed (Rs.6800(x col.6)	Irrigated (Rs 13500.x col.7)	Perennial (Rs. (18000 x col.8)	
1	2	3	4	5	6	7	8	9	10	11	12
5	Nalagarh	2626.00	1200.00	324.84	960.00	240.00	0.00	65.28	32.40	0.00	97.68
	Total	**10980.00**	**8234.00**	**3248.44**	**6587.20**	**1646.80**	**0.00**	**447.93**	**222.32**	**0.00**	**670.25**
	Una										
1	Amb.	541.00	401.00	20.46	320.80	80.20	0.00	21.81	10.83	0.00	32.64
2	Bangana.	2000.00	2000.00	790.00	1600.00	400.00	0.00	108.80	54.00	0.00	162.80
3	Gagret.	350.00	240.00	128.17	192.00	48.00	0.00	13.06	6.48	0.00	19.54
4	Haroli.	600.00	350.00	202.44	280.00	70.00	0.00	19.04	9.45	0.00	28.49
5	Una	475.40	0.00	103.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**3966.40**	**2991.00**	**1244.35**	**2392.80**	**598.20**	**0.00**	**162.71**	**80.76**	**0.00**	**243.47**
	Grand Total	**153809.34**	**93446.50**	**14541.77**	**74757.20**	**18689.30**	**0.00**	**5083.49**	**2523.06**	**0.00**	**7606.55**

Annexure -C

No.IPH-PH-WA-II-Drought/2021- 3183-84
Himachal Pradesh
Jal Shakti Department

H.P. Secretariat
Control Receipt Section
Date 29/09/21
Computer Diary No. 55447642

To

The Principal Secretary (Rev.) to the
Govt. of Himachal Pradesh,
Shimla-171002.

SS(Rev-DMC)
29/9/21

Dated: - Shimla-171005, the 28th **September, 2021**

Subject: **Submission of Memorandum by the State Government of Himachal Pradesh of damage due to Drought like situation and hailstorm during summer 2021.**

Sir,

Kindly refer to your office letter No. Rev.(DMC) (F) 17/10/2020 dated 16th September, 2021 on the subject cited above.

In this context, it is stated that 979 Drinking Water Supply Schemes of Jal Shakti Department were partially affected due to drought like situation during this year across the State.

The memorandum of losses drought like situation is enclosed herewith for taking further necessary action please.

Yours faithfully,

Engineer-in-Chief,
Jal Shakti Department,
Shimla-171005, H.P.

Copy forwarded to the Secretary (JSV) to the Government of Himachal Pradesh for information please.

Engineer-in-Chief,
Jal Shakti Department,
Shimla-171005, H.P.
E-mail:hpirrg@rediffmail.com

MEMORANDUM ON NATURAL CALAMITIES DUE TO DROUGHT SITUATION IN THE STATE

Every year the state experiences the spells of drought like situation and certain areas are affected more severely than others due to spatial variations in rainfall and availability of sustainable water sources. Further, the areas covered from gravity based water supply schemes are affected the most as such schemes are dependent on small spring/ nallah sources which are mostly in higher reaches with catchment area varying from 1.5 to 10 square kilometers and the variance in water availability on these spring/ nallah sources is quite large owing to small catchment area. Even a short dry spell of about one month adversely affects the yield of these sources. In addition, due to large seasonal variations in rainfall such drought like situations are not limited to summer months only.

979 Drinking Water Supply Schemes of Jal Shakti Vibhag were partially affected due to drought like situation this year across the state and Circle-wise detail of schemes effected due to drought is as under:

Sr. No.	Name of Circle	No. of affected Schemes
1	Dharamshala	27
2	Nurpur	3
3	Chamba	43
4	Hamirpur	96
5	Bilaspur	29
6	Una	5
7	Sundernagar	107
8	Kullu	55
9	Rohroo	4
10	Solan	246
11	Shimla	114
12	Nahan	236
13	Reckong-Peo	14
	Total:-	**979**

Jal Shakti Vibhag takes all the necessary steps to tackle the drought situation and provide immediate relief to the affected population. As a result, the financial resources of the department are diverted for mitigation of the drought like situation. The remedial measures taken by the department this year to make these schemes functional are as under:

i) **Interlinking of drought affected schemes to nearby Schemes and tapping new sources:**

The department deployed its field staff to identify such scheme which have been affected due to draught but can be made functional either by interlinking with nearby schemes having sufficient water availability or by tapping new source in the vicinity. Accordingly, the 374 schemes were identified and interlinked, in order to clear the liabilities on these activities, funds to the tune of ₹ 70.99 crore are required, the detail of funds required is an under:

Sr. No.	Description of the activities/ items	Funds required to clear liabilities (₹ in Crore)
1.	Interlinking of schemes through GI pipes	35.08
2.	Interlinking of schemes through HDPE pipes	10.90
3.	Creation of additional storage through HDPE/ RCC tanks	7.09
4.	Installation of additional pumping machinery	7.97
5.	Provisioning for Supply of Power	9.95
Total		**70.99**

ii) **Installation of New Hand Pumps & Energization of Hand Pumps:**

There are some schemes, where there were no schemes for interlinking or water sources available for tapping to augment the water supply. In such cases, existing 230 Hand Pumps were energized and 272 Hand Pumps were repaired. In addition, the 224

new Hand Pumps are to be installed, where the drought mitigation was very challenging so that such situation can be handled efficiently till alternate arrangements of regular water supply are not available. In order to clear the liabilities on these activities, funds to the tune of ₹ 37.07 crore are required as detailed below:

Sr. No.	Description of the activities/ items	Funds required to clear liabilities (₹ in Crore)
1.	Repair of Hand Pumps	5.57
2.	Energization of Hand Pumps	11.11
3.	Installation of new Hand Pumps/ Bore wells	20.39
Total		**37.07**

iii) **Other Remedial Measures:**

In addition to above, steps have also been taken for sustainability of sources, repair and replacement of damaged old pumping machinery, repair of storage tanks, intakes structures, plugging leakages, construction of percolation wells & infiltration galleries and deployment of water tankers to mitigate the drought like situation in the State. In this regard funds to the tune of ₹ 35.00 crore are required:

Sr. No.	Description of the activities/ items	Funds required to clear liabilities (₹ in Crore)
1.	Repair and replacement of damaged old pumping machinery, repair of storage tanks, intakes structures, plugging leakages.	3.50
2.	Cleaning of water sources and tanks	1.75
3.	Construction of percolation wells & infiltration galleries, SSF & RSF	17.75
4.	Deployment of water tankers	10.50
5.	Chlorination of water sources	1.50
Total		**35.00**

The Jal Shakti Vibhag has acted in the timely manner to tackle the drought like situation by incurring an expenditure of ₹ 143.06 Crore, which has constrained the financial resources of the department adversely and immediate recuperation of the funds to the department for smooth functioning of the schemes is very critical. However, the past experience has shown that the relief provided by the Government is only Rs. 1.50 Lakh per scheme, which is very meagre (about of 1/10th) in comparison to the expenditure incurred by the department.

Keeping in view the geographical challenges leading to high pumping lifts, higher pipe thicknesses and overhead carriage of construction materials, scattered habitations resulting in long conveyance system, the relief/ admissible cost per scheme needs to be enhanced to extent possible to abridge the gap between the expenditure and relief provided by the Government.