संघ राज्य प्रशासन, लद्दाख
आपदा प्रबंधन, राहत, पुनर्वास और
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सत्यमेव जयते

THE ADMINISTRATION OF
UNION TERRITORY OF LADAKH
Disaster Management Relief,
Rehabilitation & Reconstruction
Department.
दूरभाष /tele: : 01982-255567
लेह/Leh

B.P. Bimal
Director (DM)
Ministry of Agriculture &Farmer Welfare
Department of Agriculture and Farmer Welfare
(Drought Monitoring Cell)
New Delhi

Subject: Submission of UT Ladakh Crises Management Plan for Drought 2024.

Sir,

In response to your letter No 01/01/2024-DM-1 dated 13th May, 2024 regarding the submission of the **UT Ladakh Crises Management Plan for Drought 2024.** I am directed to submit the Crises Management Plan for Drought 2024 UT Ladakh. The (CMP) is enclosed herewith for your kind information.

Encl- 24(Leaves)

Yours Faithfully
13/09/2024

Abdul Majid Tantray (JKAS)
Deputy Secretary, DMRRR Department

No. Secy//UTL/24/749-51 Dated: 13- 09 - 2024.

Copy to the: -

1. OSD with Advisor to the Hon'ble Lieutenant Governor for your kind information of the Advisor.
2. DC Leh & DC Kargil for information.
3. Concerned Member(s) for information.

THE ADMINISTRATION OF UNION TERRITORY OF LADAKH

DROUGHT CRISIS MANAGEMENT PLAN OF UT LADAKH

I N D E X

Map of UT Ladakh

1.Approach for CMP:

The crisis management plan will promote an approach that moves drought management practices from reactive to more proactive management. It aims to provide state wide coordination for efforts towards integration of science, policies and implementation by strengthening drought monitoring, drought risk assessment/prediction; drought early warning services and sharing best practices at the village, district and the state level. The CMP advocates and facilitates integration of resources of various agencies such as water resources, revenue, agriculture, disaster management and relief, medical and health, animal husbandry and energy etc.

Drought

Ladakh, located in the northernmost part of India, is a unique region with its breath-taking landscapes, extreme weather conditions, and strategic geopolitical importance. However, the region faces various potential crises, ranging from natural disasters like earthquakes, floods, and avalanches to human-made emergencies such as road accidents, border tensions, and disruptions in essential services. Due to its remoteness and harsh terrain, crisis management in Ladakh requires a well-thought-out, robust plan that addresses both preparedness and response measures. Below is a strategic approach to developing a crisis management plan for the region.

Objectives

1. To establish a systematic and proactive approach for drought risk management.
2. To integrate early warning systems and monitoring mechanisms.
3. To promote sustainable and climate-resilient agricultural practices.
4. To strengthen water resource management to cope with drought conditions.
5. To ensure effective relief, response, and rehabilitation of affected communities.

6. To encourage institutional coordination across central, state, and local levels.
7. To promote community participation and awareness for drought mitigation.

1. Risk Assessment and Identification

A comprehensive risk assessment must be the first step in creating a crisis management plan. Ladakh is prone to specific risks due to its geographic and climatic characteristics. This includes:

- **Natural Disasters**: Earthquakes, flash floods (due to glacial lake outbursts), and avalanches are common.
- **Environmental Crises**: Extreme cold, water shortages, and limited arable land can lead to crises related to food security and essential supplies.
- **Human-Made Risks**: Road accidents due to treacherous terrain, cross-border tensions with neighbouring countries, and disruptions in essential services like power and communication.

Identifying these risks enables authorities to prioritize resources and focus on mitigating the most significant threats.

2. Infrastructure Preparedness

In a region like Ladakh, where accessibility is challenging, having the right infrastructure is essential for crisis management. This includes:

- **Emergency Shelters**: Establishing earthquake and flood-resistant shelters in key locations to accommodate displaced populations.
- **Communication Networks**: Strengthening satellite communication and ensuring that key emergency personnel have access to reliable means of communication, particularly during power outages or network failures.
- **Transport Networks**: Enhancing road connectivity and maintaining critical airfields for emergency evacuations or supply drops. Ensuring roads remain open, especially during winter, is essential for relief operations.

3. Resource Allocation

Effective resource management is critical in crisis situations. Authorities must ensure adequate stockpiling of essential supplies such as food, water, fuel, and medical resources in Leh and nearby towns. In remote areas, establishing small community warehouses with basic resources can help avoid delays in relief efforts.

Moreover, partnerships with local communities, businesses, and non-governmental organizations can enhance resource mobilization.

4. Training and Capacity Building

Capacity building is crucial for the local population and emergency responders. Crisis management teams, including government officials, military personnel, healthcare workers, and local volunteers, should undergo regular training in disaster response, medical aid, and evacuation procedures. Simulation drills and mock exercises should be conducted to prepare for potential scenarios. Training programs should also focus on educating local communities on emergency preparedness, safety measures, and self-rescue techniques.

5. Coordination and Collaboration

The success of any crisis management plan hinges on seamless coordination between various stakeholders. In Ladakh, multiple agencies—including the Indian Army, local government authorities, the National Disaster Response Force (NDRF), and healthcare services—need to work together to ensure timely and efficient responses. A centralized crisis management centre should be established to coordinate between these agencies and ensure real-time communication and decision-making. Collaboration with local communities, who are often the first responders in times of crisis, is equally important.

6. Technology Integration

Leveraging technology can significantly enhance crisis management in Ladakh. Early warning systems for earthquakes and floods, satellite imagery for real-time monitoring of disaster zones, and drones for delivering medical supplies or assessing damage are vital tools. Additionally, Geographic Information Systems (GIS) can map vulnerable areas and optimize resource deployment.

7. Post-Crisis Recovery and Resilience Building

The crisis management plan should also include long-term strategies for recovery and resilience building. This involves rebuilding damaged infrastructure, rehabilitating affected populations, and restoring essential services. More importantly, lessons learned from past crises should be documented to improve future preparedness and response strategies.

2Drought a Crisis

Ladakh, renowned for its stark beauty and extreme climatic conditions, faces the growing threat of drought, which poses a significant crisis for the region. Situated in a cold desert, Ladakh receives minimal rainfall, with annual precipitation averaging less than 100 mm. Traditionally, the region has relied on glacial meltwater for its water needs. However, climate change has accelerated glacial retreat, leading to water shortages and drought-like conditions.

Causes of Drought in Ladakh

Several factors contribute to the growing threat of drought in the region:

- **Climate Change**: Rising temperatures are causing glaciers to melt more rapidly, depleting a critical source of water for Ladakh. Moreover, unpredictable weather patterns are reducing snowfall and rainfall, exacerbating water scarcity.
- **Water Management Issues**: Traditional water conservation methods, such as storing glacial meltwater in ponds (zings), are under strain due to population growth and development. The limited capacity of these systems, combined with a lack of modern water infrastructure, has left communities vulnerable to drought

Impact of Drought

Drought in Ladakh has far-reaching consequences:

- **Agriculture**: Ladakh's agriculture, already constrained by a short growing season, is heavily dependent on water from glaciers. Reduced water availability threatens crop yields, leading to food insecurity.
- **Livelihoods**: Many rural inhabitants depend on farming and livestock for their livelihoods. Water shortages not only reduce crop production but also affect grazing lands, leading to economic hardships.
- **Water Scarcity**: Limited access to clean drinking water puts immense pressure on communities, forcing them to rely on distant or dwindling water sources.
- A **meteorological drought** in Ladakh refers to an extended period with significantly below-average precipitation, which is particularly concerning in this cold desert region. With an annual average rainfall of less than 100 mm, the region already faces arid conditions, and even slight deviations

from the normal precipitation can lead to drought. In Ladakh, where agriculture and daily life heavily rely on the timely melting of glaciers and scant rainfall, a meteorological drought exacerbates water scarcity.

- An **agricultural drought** in Ladakh occurs when water availability becomes insufficient to meet the needs of crops and livestock, leading to reduced agricultural productivity. Given the region's extreme climate and reliance on glacial meltwater for irrigation, even small shifts in water availability can have devastating effects. With minimal rainfall and receding glaciers due to climate change, farmers in Ladakh face increasing challenges in maintaining crop yields.
- A **famine drought** in Ladakh represents the most severe stage of drought, where prolonged water scarcity leads to widespread crop failures, food shortages, and extreme hardship for the local population. In this cold desert region, agriculture is already fragile due to its dependence on glacial meltwater and limited rainfall.
- A **socio-economic drought** in Ladakh arises when water scarcity disrupts not only agriculture but also the broader economy and social well-being of the region. In this cold desert, where livelihoods depend heavily on farming, livestock, and tourism, prolonged drought conditions lead to reduced agricultural productivity, affecting food supplies and incomes.

Types of Droughts

Droughts may be grouped by type

Type	Characteristics
Meteorological Drought	A situation where there is a reduction in rainfall for a specific period (days, months, season or year) below a specific amount (long term average for a specific time). Hydrological Drought involves a reduction in water resources (stream flow, lake level, ground water, underground aquifers) below a specified level for a given period of time.
Agricultural Drought	Agriculture drought is the impact of meteorological/hydrological drought on crop yield. Agricultural drought is the common phenomenon in Leh district. It is particularly very well noticed in Changthang region. In Changthang, drought situation is also caused by Locust Menace moving across the border from China. It eats away all the green parts of a plant resulting in death and stunting of plant and multiple branching from the base in case of tree plantation.

Socio-economic drought

The concept of socio-economic drought recognizes the relationship between drought and human activities. For example, poor land use practices exacerbate the impacts and vulnerability to future droughts. While any of the above types may result in an acute drought, the hydrological and agricultural varieties are frequently endemic in certain areas in a chronic form needing long-term measures rather than crisis management or emergency response required for an acute drought. In other words, 'Crisis Management' is most frequently required in case of Meteorological Drought although the crisis precipitated by an acute drought acquires extra-ordinary severity where Hydrological Drought is already in evidence.

Management of Drought

The primary responsibility of managing drought (or any other natural disasters) is that of the State Governments. The role of Central Government is to supplement the efforts of the State Government in effective management of disasters and provide additional resources (food grains / financial assistance etc.) to combat the situation. State Governments should ensure the declaration of drought in accordance with the modalities and timelines in the Manual so that relief assistance can be provided to the drought affected people in time.

The impact of drought can be reduced to a greater extent through preparedness and mitigation planning procedures:

- Prediction of drought is a tough job as it has to be dealt with undefined time period but this can be tackled with the help of indicators like degradation of water availability, low productivity that provides us with the view on the drought on-set pace. This facilitates the community and the administration to develop approaches which reduce the impact of the disaster.
- Monitoring over-availability of water resources, crop conditions, ground water levels, rainfall and climatic condition etc. in comparison to the water usage and its availability can help in a more accurate prediction process.
- Impact assessment of drought can be analysed with the indicators like land use pattern, cattle rearing, agricultural yield, cropping pattern, social structure, demographics, ecology of the area and water availability etc. helping for a greater knowledge over the type of drought and the severity of the disaster. Further assisting in planning the response strategy for the reduction of severity.

- Response includes improved drought monitoring. Better water and crop management can be done by improving awareness among the communities and making them responsible for usage of community resources not individually but community as a whole, rise of water supplies with ground water, increased public awareness and education, intensified watershed and local planning, reduction in water demand and water conservation.

- The cattle's are the worst effected during a drought situation. Where it is not possible to supply fodder or take medical care of cattle, cattle camps are to be opened to take complete care of the cattle population. The following is a checklist of points for monitoring the fodder requirement in the difficult drought situation.
- Assessment of fodder requirement in drought affected areas of the district and locate areas where shortages are likely to occur and arrange for supplies from outside.
- Arrange to procure fodder in selected outlets.
- Fodder cultivation to be encouraged wherever feasible.

- Ensure supply from molasses to cattle feed plants.
- Obtaining from premixed feed and urea-molasses bricks to the extent.

Typical adverse effects

The adverse effects of drought on the environment in Ladakh are significant, given the region's fragile ecosystem and reliance on glacial meltwater. Key environmental impacts include:

1. **Glacial Retreat**: Prolonged drought accelerates the melting of glaciers, which are crucial for sustaining rivers and water supplies. Reduced glacier volume can lead to decreased water availability for both natural ecosystems and human use.
2. **Desertification**: Persistent drought conditions contribute to the degradation of land, leading to desertification. As vegetation dies off and soil loses its moisture, the land becomes less productive and more prone to erosion.
3. **Loss of Biodiversity**: Water scarcity impacts local flora and fauna, disrupting habitats and leading to a decline in species that are adapted to the region's unique conditions. Plant species that rely on consistent water sources may die off, affecting herbivores and, subsequently, predators.
4. **Soil Degradation**: Reduced moisture and increased erosion contribute to soil degradation. This affects soil fertility, reducing its ability to support vegetation and impacting agricultural productivity.
5. **Wildlife Displacement**: As water sources dry up, wildlife may be forced to migrate in search of food and water, disrupting established ecosystems and potentially leading to conflicts with human populations.
6. **Forest Stress**: Limited water availability places stress on the sparse forested areas, which are crucial for maintaining soil stability and providing habitat for wildlife. Stressed forests are more susceptible to disease and pests.

Drought in Ladakh has significant adverse effects on the **social** fabric of the region, impacting communities in various ways:

1. **Food and Water Scarcity**: Prolonged drought leads to reduced agricultural output and water shortages, resulting in food insecurity and limited access to clean drinking water. This can strain households and heighten the risk of malnutrition and health issues.
2. **Economic Hardship**: As agriculture and livestock, the primary sources of income for many families, suffer, there is increased economic pressure on communities. Reduced income from farming and animal husbandry can lead to financial instability and poverty.
3. **Migration and Displacement**: Prolonged drought may force people to migrate to urban areas or other regions in search of better opportunities. This migration can lead to the disintegration of traditional communities and the loss of cultural heritage.
4. **Institutional Response Social Tension**: Water and food shortages can lead to conflicts within communities and between neighbouring regions. Competition for dwindling resources may strain social cohesion and exacerbate existing tensions.
5. **Impact on Education**: Economic hardship due to drought can result in families prioritizing immediate survival needs over education. This may lead to increased school dropout rates and reduced educational attainment for children.

Mental Health Strain: The stress and uncertainty associated with drought conditions can adversely affect mental health. Increased anxiety, depression, and social isolation are common among individuals facing severe economic and environmental challenges.

- Adverse effects can be grouped into sectors; economic, environmental and social.

Economic

- Losses in production of crops, dairy and livestock, timber and fisheries
- Loss of national economic growth and development
- Income loss for farmers and others directly affected
- Losses from tourism and recreational businesses
- Loss of hydroelectric power and increased energy costs
- Losses to industries related to agricultural production
- Decline in food production and increased food prices
- Unemployment from drought related production declines
- Revenue losses to government and increased strain on financial institutions

Environmental

♣Damage to animal and fish species and habitat
♣ Wind and water erosion of soils

♣ Damage to plant species
♣ Effects on water quality (salination)
♣ Effects on air quality (dust, pollutants, reduced visibility)

Social

♣Food shortage effects (malnutrition, famine)
♣ Loss of human life from food shortage or drought related conditions
♣ Conflicts between water users
♣ Health problems due to decreased water flow and pollution
♣ Inequity in the distribution of drought impacts and relief assistance
♣ Decline in living conditions in rural areas
♣ Increased poverty, reduced quality of life
♣ Social unrest, civil strife
♣ Transhumance for employment or relief assistance

Factors contributing to vulnerability

- Drought is more likely in dry areas with limited snow fall and rain fall. Physical factors such as the moisture retention of soil and timing of the rains influence the degree of crop loss in droughts.
- Drought related effects will be more severe in regions with overall yearly food deficits and for largely subsistence level farming and pastoralist systems.
- Where governments and assistance agencies have not adequately planned drought response, assistance measures may be poorly targeted or ineffective.

Elements of Management of an Acute Drought:

(i) Constant monitoring of rainfall, snow fall and hydrological status;
(ii) Detection of Early Warning Signs other than rainfall and snow fall statistics to identify a potential drought;

(iii) Appearance of Drought like Conditions;
(iv) Assessment of Damage and Requirement of Assistance for distress mitigation in the event of actual outbreak of a drought.
(v) Sanction of Assistance for different relief activities;
(vi) Monitoring of progress of Drought and Administration of Relief.

3. Department Specific Actions

The following are the actions to be taken up by the departments/ agencies and the stakeholders during the crisis situation

S.No	Department	Disaster Specific Action

1	Agriculture Department	<u>Pre Drought situation</u> • Prepare crop contingency plan • Identify and assess the requirement for fodder depots. • Fodder supply: Identification of grazing land including forest land. • Promote crop insurance <u>During Drought Situation</u> • Assessment of crop damage • Establish food depots as per requirements • Ensure food security – transport food from FCI/ warehouse and if shortage still persists then import food grains from other states, other countries. • Fodder availability – transportation of fodders to affected areas, identify the areas having availability of excess fodder, appeal to farmers having excess fodder • Supply of fodder at subsidized rates • Cattle feed subsidy • Issue periodic bulletins <u>Post Drought Measures</u> • Suggest/ implement Change in cropping pattern - Water saving crops like sass flower, castor, Jawar, Bajra and oil seeds to be introduced in drought prone areas. Likewise, in the IGNP area sugarcane, cotton and groundnut and in Kota area rice crop can be replaced by suitable low water consumption crops. • • Promote sprinklers and drip irrigation methods. • • Promotion of low irrigation requirement crops, drought tolerant seed varieties and other livelihood options in chronic drought prone areas.
2	Animal Husbandry	<u>Pre Drought-Situation</u> • Prepare contingency plan • Promote cattle insurance • Constitute veterinary mobile teams with required resources like medicines, doctors, subordinate staff, laboratories, protective gears, antibiotics, vaccines and antitoxins, etc. in abundance. <u>During Drought Situation</u> • Constitute technical groups at state, zone and district levels. • Identification of affected areas. • Disposal of dead carcasses. • Focused attention to veterinary health.

		• Mass vaccination programme of animals in affected areas Make arrangements for rescue and evacuation of stranded livestock • Pool in sufficient doctors for treatment of sick animals/ poultry. • Control spread of animal disease. • Carry out epidemiological surveillance to evade biological disasters. • Promote awareness through IEC activities.
4	Department of Medical and Health	<u>Pre Drought-Situation</u> • Health and epidemiology surveillance • Constitute mobile teams with required resources like medicines, doctors, subordinate staff, laboratories, protective gears, antibiotics, vaccines, etc. in abundance. <u>During Drought Situation</u> • Mobile clinics for health check ups • Organise regular rural health camps and keep public informed of such camps. • Check the nutritional status especially for women and children and give treatment. • Check samples of food grains, cooked food in community kitchens, etc. • Promote general awareness of health and hygiene.
5	Disaster Management & Relief (DM&R)	• Ensure coordinated movement of all concerned departments, officials and agencies for combating Drought. • Make sufficient funds available for Drought response. • Arrange regular meetings for updating the apex body and issue directions to all concerned departments regularly. • Document experiences and best practices.
6	Irrigation/ Water Resource department	• Document experiences and best practices. • Assess and evaluate the supply and demand of water for crops and ensure rationing of water. • Strict monitoring / vigilance to avoid illegal pumping. • Maintenance and repair of Dams, canals. • Lining of canals and other water structure systems in order to • reduce seepage losses in the conveyance system. • Deepening of wells • Identify underground streams/ aquifers. • Make sufficient arrangements for tube wells and new hand • pumps and repair. • Making sufficient budget provisions.
7	Soil & Water Conservation	・Promote rain water harvesting structures.

	Department	・Renovation of tanks and tankas – desilting of mud, strengthening of bunds, etc. and integrating the tanks with major canal systems, wherever feasible. ・ Promote farm ponds, percolation tanks, water retardant mulches and traditional/ indigenous techniques of water conservation.
8	Public Works Department (PWD)	・ Listing of works that could be done as relief programmes - pond desilting, excavation of water structures, construction of Government infrastructures, etc. ・Carry out sudden checks and supervise the relief works. ・ Generate employment through cash for work/ food for work relief programmes
9	Civil Supplies and Public Distribution System (PDS)	・Distribution of food packets, dry rations, fuel, oil and lubricants ・ Take precautionary steps against hoarding and profit mongering and ensure normal prices of commodities in the market. ・ Adequate supply and reserves of FOL and coordinate with all the State agencies for smooth transportation of food and civil supplies. ・ Supply daily necessities of food items, stock position and ensure continuous supply, in relief camp too. ・Coordination with FCI/ warehouses. ・ Make public aware through media about food distribution and also about the availability of items at subsidized rates.
10	FCI/ Warehouse	・Keep stock of food grains ・In case of shortage inform administration for further procurements ・ Quick transportation/ distribution of food grains as per demand from administration.

		・Coordination with transport departments (road, rail and air).
11	Municipal Corporation	Coordination and supply of safe drinking water using tankers, etc.
12	RDD	・Evaluate/ analyze the complete details of the drought situation in the state for effective drought management, proper information to higher officials for effective decisions on drought response. ・Make provisions for sufficient budget for food products, grains, fodder, water and hand pumps, etc. ・Coordinate with neighbouring states for sufficient arrangement for food, fodder, etc. ・Regular monitoring of Drought relief works. ・Distribution of relief materials to the needy in actual terms. ・Ensure compliance of orders issued by Government from time to time. ・Support PRI in organising cattle camps ・Coordinate with other departments like health, animal husbandry, PHED and Water Resources. ・Oversee maintenance of cattle camps and Gaushalas and ensure veterinary services, fodders, etc. are provided as per the norms. ・Support price and subsidy to encourage cultivation of green fodder
14	District Administration	Pre Drought Situation ・Prepare Drought Contingency Plan. ・Issue necessary directions/ instructions to all concerned departments to combat the upcoming situation in an effective and coordinated manner. During Drought Situation • Ensure effective coordination with all departments, agencies, NGOs and stakeholders. • Arrange/mobilize equipment and resources like water tankers,

		trucks/ vehicles to transport food supply, fodder, mobile medical vehicles, ambulances, etc. • Arrange for disposal of dead carcasses. • Generate daily reports of relief activities and disseminate. • Organise relief camps wherever required; ensure pure drinking • water, Sanitation, food, temporary shelters, basic relief materials as per requirements and need. • Update political leaders/ issue periodic bulletins. • Media Management
15	PRI (Zila Parishad, Panchayat Samiti and Gram Panchayat)	・Analyze the complete details of the drought situation in the district for effective drought management and inform the state administration for effective decisions on drought response. ・ In coordination with District Administration, arrange/mobilize equipment and resources like water tankers, tractors, trucks/ vehicles to transport food grains, fodder, mobile medical vehicles, ambulances, etc. ・ Appoint labourers for disposal of dead carcasses, distribution of food grains, fodder, etc. ・Organise cattle camps wherever required; ・ Ensure safe drinking water, Sanitation, food, basic relief materials (fuel, oil, etc.) as per requirements and need. ・Mass vaccination for domestic animals. Arrange for release of compensation of agriculture losses based on the 'panchnama'.
16	AIR/ DD & other news channels	・ Broadcast/ Telecast the current situation on a regular basis. ・Issue bulletins on a periodic basis. ・Promote general awareness on government programmes, relief measures and health and hygiene messages.
17	Department of Information	・ Information dissemination, issue periodic bulletins to media.

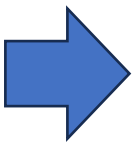
		and Public Relation	・Ensure information given to media are facts and true to avoid rumours. Arrange visit for local and foreign journalists in affected areas. ・Information dissemination, update public on various relief interventions.
18		UN, International Agencies, Red Cross	・Support Government in all relief and response activities. ・Work in collaboration with Government authorities and departments. ・ Specifically support Administration in the following sectors: water Supply, Sanitation, Hygiene Promotion, Food supply and Nutrition, livelihoods/ income generation activities, general awareness etc.
19		Emergency Operation Centre (EOC)	Coordinate and issue direction to all concerned stake holders/ departments regularly

"The effective preparedness and prevention of the crisis in agriculture is the foremost important task
before the Government at State levels during the paradigm of Drought Management. Preparation and
implementation of an effective Crop Contingency Planning would address the mitigation of crisis in
agriculture. The Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad under ICAR
has been preparing district-wise contingency plans in collaboration with State Agricultural University
(SAU) / Indian Council of Agricultural Research (ICAR) Institutes / Krishi Vigyan Kendras (KVKs).

Specific Attention to Water User Groups:

Water User Group

- Public Water Suppliers
- Municipal Waste Discharge
- Agriculture
- Industry (Infrastructure, Food Processing including beverages, other (heavy industry, mining.
- Power Production (Hydroelectric)
- Recreation (Park, fountains etc.)



Potential Action

- Leak Repair
- Non-Essential Water use restrictions
- Pressure Reduction
- Voluntary Water Conservation
- Mandatory Water Conservation
- Emergency Source Enhancement
- Interconnection
- Major User Restriction
- Emergency Rate Structures
- Source Blending

8. Agencies responsible for Identified Activities

Activity	Primary	Secondary	Tertiary
Monitoring			
Reviewing CMP	DMR	SEC	SDMA
Rainfall	IMD	Water Resource (Hydrology)	Agriculture
Temperature	IMD	Water Resource (Hydrology)	Agriculture
Surface Water Level	PHE/CWC	Water Resource (Hydrology)	Agriculture
Ground Water Level	CGWB	Water Resource (Hydrology)	Agriculture
Monitoring of Agriculture Drought	District	IMD	Agriculture
Assessment			
Drinking Water availability	District	PHED	DMR
Irrigation Water Availability	District	Water Resources	MoD WR, GoI
Soil Moisture	District	Water Resources	Agriculture
Fodder, Cattle feed and poultry feed availability	District	A H & D	Agriculture
food grains availability	District	Food & PD	Agriculture

Energy sector requirement	District	Energy	
Input and Seed availability	District	Agriculture	National Agencies for Seed and Fertilizers
Water conservation measure	PHE	PHE	PHE
Check Dams/ Watersheds	District	Water Resources	Agriculture
Deficit irrigation, Sprinkler and drip irrigation, reuse of irrigation water, use of water of suboptimal quality	District	Water Resources	Agriculture
Rain water harvesting & water shed management	District	Water Resources	Agriculture
Ground Water Recharge	District	CGWB	Water Resources
Adjustment in sanction water/ water pricing	District	Water Resources	CWC
Monitoring of water levels in head works such as jack wells and tubewells	PHED	Agriculture	DMR
Judicial use of available water	Water Resources	PHED	SDMA
Planning of naturally drought restraint crops with less water consumption and duration	District	Agriculture	Water Resources
Water supply system for drought prone areas for arranged supply of water to commercial and industrial activities having low water consumption	District	CWC	MoWR
Reduction in conveyance loss, evaporation from soil surface, renovation and percolation of tanks, water consciousness	District	CWC	Water Resources
Early Warning System (EWS)			
Forecast of contingency cropping	District	Agriculture	ICAR
Forecast of crop loss	District	ICAR/ DAC	Agriculture

Forecast of water deficiency	District	Water Resources	Agriculture
forecast of food Insecurity	District	Food & PD	Agriculture
forecast of Cattle feed deficit	District	AH & D	Agriculture
Declaration of Drought	District		
Estimation			
Normal Area Vs sown area	District	Agriculture	
unsown area	District	Agriculture	
Crop Loss due to drought	District	Agriculture	
Loss to Animal Husbandry & Fisheries Sector	District	AHD	
Potential Water Deficit			
For irrigation	District	Water Resource	DAC
For Drinking Water	District	PHED	DAC
Fodder/ Cattle Feed/ Poultry feed requirement, availability, additional demand for cattle care	District	AHD	DAC
Loss to energy sector and requirement of energy sector	District	Power/ Petroleum & Natural Gas	DAC
Drought mitigation			
Propagation of forecast through extn. services	KVKs	District	Agriculture
Propagation of contingency cropping	District	ICAR	Agriculture
Intensification of agricultural activities with support from Centrally Sponsored Schemes	Respective Missions/ agencies	District	Agriculture
Additional Availability of seed and other inputs	Respective Missions/ agencies	District	Agriculture
Credit Support	Agriculture Crop Banks/ Nationalised & Scheduled Banks NABARD/ RBI	District	Agriculture
Propagation of agro forestry	District	M/o E&F	Agriculture
Issue of Agro advisories	District	Agriculture	
Issue of General advisories	District	Agriculture	
SDRF release	M/o Finance	DMR	
Alternative employment	District	RD	
Food Security to vulnerable sections	District	WCD/ SJ & E/ RD	DMR
Food grains requirement of farming community	District	F&PD	Agriculture

Request for additional	DM&R	DAC	SEC/SDMA

4. Monitoring & Reporting of Drought

Government of India has designed and launched an interactive web portal for online reporting of drought related information in prescribed MIS format, which is available at http://dacnet.nic.in/droughtmis. All district shall utilize the web portal and enter all drought related information for monitoring drought and planning for mitigation.

Dissemination of Information and Media Management

Sharing information with print, radio and television media is an important aspect of drought management. The Central and State Governments should provide information on all aspects of drought to the people and media. Designated Spokespersons of Governments should be accessible to media for providing information on drought, for which a communication outreach strategy may be adopted. They should organise periodical briefings for dissemination of information. Additional Director General dealing with Agriculture in the Press Information Bureau, Ministry of Information and Broadcasting, Government of India would interact and disseminate periodical information to the media on the drought related information as made available by the Additional Secretary and Central Drought Relief Commissioner, Department of Agriculture and Cooperation, Government of India.

Role of Non-Government Organizations (NGOs) and Civil Society Organizations (CSOs)

• The State Government and district administration need to involve NGOs in organizing drought relief. NGOs and CSOs have the advantage of local presence and community outreach which could be utilized for organizing distribution of relief assistance and implementing mitigation programs. NGOs can also be very effective in providing feedback to the Government and securing corrective actions.
• NGOs and CSOs can convey the local demand for relief employment to the district administration. They can suggest specific works to be started so that the people are provided with employment within a short distance of their homes.
• NGOs and CSOs can monitor the distribution of foodgrains through Fair Price Shops and prevent hoarding and diversion of foodgrains in the open market.
• NGOs and CSOs can set up cattle camps and fodder depots after obtaining the necessary authorization from the Government. They can receive Government assistance as per the CRF / NCCF norms as well as the necessary veterinary care for this purpose.
• NGOs and CSOs need to help the Government in dealing with the public health aspects of drought. They can assist the Government in disinfecting sources of water, creating awareness about public health issues and monitoring malnutrition and disease among drought-affected population.

5. Nodal Officers

Besides UT Relief Commissioners and line Departments / offices / agencies of the State Government, responsible for different sets of activity connected with crisis management of drought shall nominate an officer not below the rank of Director or equivalent in the Government of India. The list of nodal officers containing their name, designation, telephone (office / residence), FAX, e-mail, mobile number and address shall be maintained in the Drought Monitoring Cell (Control Room) of the Department of Agriculture, and got updated every month. At District level, the District Magistrate / Collector would be the nodal officer of the drought affected district, who will be co-opted in the drought management spectrum at the time of acute crisis in their district.

6. Conclusion

The aim of the CMP (Drought) is to help all stake holders to be better prepared and less vulnerable to drought. It will also result in a timely and effective response by government agencies to reduce impacts during a drought crisis. The strategic activity planner and identification of agencies responsible for managing the crisis is aimed at demarcation of the duties of respective personnel in the identified activity.

This plan enables the officials who are responsible to focus their efforts on emerging crisis situations, which may require a unique response. As much as decisions are taken in advance of a Crisis, it would make it possible that the remaining decisions are taken easily through the Crisis. However, existence of a UT level mechanism and a holistic and integrated drought management plan would reduce the focus of the Crisis Management Plan (CMP) towards relief and rehabilitation in the event of full-blown drought.