

Community Managed Drought Risk Reduction

experiences and lessons learnt



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Introduction

Baski Kumari of Adagala village in Shergarh Block of Western Rajasthan is the fourth girl child of her parents who eke out a living by migrating out of Rajasthan each time drought strikes and survival gets tough. They decided to call her Baski, meaning "enough" to symbolically tell their stars to stop giving them daughters. Deeply entrenched in poverty, her parents, like most others in their village have been doing everything humanly possible for survival. Belonging to a backward caste, their entire hamlet is away from the main habitation with mostly kutcha or temporary houses, no sanitation, water supply or electricity. Poverty in such families not only implies lack of financial capacity; it also translates to sheer unavailability of money to afford even a rudimentary system of water supply and storage. With such fundamental deficiencies, living in the marusthal, indeed, literally translates to the "Land of death".

"Sat kal satais jamana, tirsath kuriyakacha, teen kal aisa pahela ma-bap na melela pacha"

(Seven droughts, twenty-seven good years, sixty-three manageable years and three droughts so severe that you would lose all your dear ones)

This popular saying of Western Rajasthan clearly indicates how well drought risk has been integrated in the way people live.

Will there ever be a future where desert communities in Rajasthan are free from the risk of droughts that may not kill, but silently leave people to die?

Community Managed Disaster Risk Reduction: An emerging framework

Desert communities, as well as their supporting institutions, have been working for decades in Western Rajasthan with the objective of reducing the impact of drought on the lives of people. Over the years, these efforts have evolved from pure provision of relief after droughts to management of drought risk.





This document has been threaded by a "Khejari" tree that appears on each page in the booklet. From the authors, this is a mark of reverence for the tree that has been the lifeline of the desert especially for the poor due to its drought resistant characteristics. The leaves of Khejari are rich fodder especially for goats and sheep, the only animals that the poor in the desert can afford. The pods are cooked as vegetables while many other parts of the plant such as the bark have immense medicinal properties. The trunk is used for construction. Other woody parts are used as cooking fuel. It is little surprise that over three hundred women gave up their lives in the eighteenth century hugging Khejari trees that were being felled at the behest of the local rulers.

Community Based Disaster Risk Reduction (CBDRR) approach to drought dominated the discourse in the last decade. Subsequently, Community Managed Disaster Risk Reduction (CMDRR) approach was piloted in Rajasthan by Unnati and its partner NGOs : Prayas, Vasundhara Seva Samiti, Jai Bhim Vikas Shikshan Sansthan, Urmul Marusthali Bunkar Vikas Samiti and IDEA Sansthan, with the support from Cordaid in 2007-2010. This important shift in approach has essentially been in terms of greater leadership of desert communities with regard to the strategies and processes for reduction of drought risk.

Applied CMDRR in the Thar

This document has been developed as a compilation of experiences and lessons learnt from the CMDRR initiative in Rajasthan. The intention of the document is to assist practitioners engaged in drought risk management to delve deeper into the possibility of meaningful and sustainable empowerment of desert communities to manage drought.

This document draws from the experiences of Unnati and its partner NGOs, based on their work of the last few decades in Western Rajasthan.

Interactions with participating families and NGO staff were extremely helpful in developing an understanding of drought. The authors acknowledge their contribution with heartfelt gratitude.

The document comprises mainly of four sections.

Chapter One attempts to capture the effects of drought, particularly on poor and marginalised communities. It argues that drought may be a silent and longer term phenomenon; nonetheless, there is a need to consider drought as a disaster and undertake serious measures to minimise the risk.

Chapter Two analyses the approach of existing policies to drought.

Chapter Three focuses on the learning's from the experience of Unnati and its partners in implementing the CMDRR initiative in Western Rajasthan.

Chapter Four finally discusses CMDRR as the way forward for sustainable management of drought risk through community processes.



Social Determinants of Drought Risk in Western Rajasthan

1. SOCIAL DETERMINANTS OF DROUGHT RISK IN WESTERN RAJASTHAN

1.1 Understanding Drought

Drought is a condition of acute water shortage. This could primarily be attributed to insufficient rainfall over extended periods of time that results in debilitating conditions such as widespread crop failure, shortage of drinking water, un-replenished ground water resources, depletion in lakes/ reservoirs, and reduced fodder availability. Often, a region adapts itself to a certain level of water shortage based on the long-term climatic conditions experienced by it; any negative departure from these levels creates conditions of drought.

Drought differs from other natural hazards in several important ways:

- i. There is no universal definition of drought. Although most definitions of drought refer to moisture deficiency or dryness that leads to water shortage and crop damage, some sources classify drought as the "most destructive of all natural disasters that is generally defined as an extended period in which available water is insufficient for

human, animal, and agricultural needs.

- ii. Duration of drought may range from months to years. Communities have often experienced successive droughts even before they have managed to recover from a previous drought.
- iii. It is a slow-onset and creeping phenomenon that makes it difficult to determine the onset and end of the event.
- iv. The impacts of drought are debilitating yet not so evident and therefore difficult to quantify. Spatial extent of impact is usually much greater than other natural hazards, making assessment and response actions difficult.



- v. Its impacts are cumulative and magnify when events continue from one season or year to the next.

Drought results in reduced crop production, increased mortality of livestock and fire hazard. A reduction in crop productivity further results in less income for farmers, increased food prices, unemployment, and migration. It affects a variety of groups and sectors at various levels; consequently, the spatial extent of drought is often spread over a large area. Quantifying environmental damages and personal hardships is therefore difficult and accurate determination of the financial costs of drought is an arduous task.

India is severely affected by drought, especially in terms of the number of people affected. Maximum duration of drought in India is observed to be three years and the minimum duration is six months.

The Irrigation Commission in 1972 classified areas vulnerable to drought as: drought-prone and chronically drought-prone. Drought-prone areas are those with 20 per cent probability of rainfall deficiency of more than 25 per cent of the normal rainfall. Regions included in this category are Gujarat, East Rajasthan and adjoining parts of Punjab, Haryana, West Uttar Pradesh, West Madhya Pradesh, middle portion of Maharashtra, interior areas of Karnataka, Andhra Pradesh, parts of Tamil Nadu, a small portion of Northwest Bihar, adjoining East Uttar Pradesh, a small portion of Northeast Bihar and adjoining portion of West Bengal.

Chronically, drought affected areas are those which have a 40% probability of rainfall deficiency of more than 25% of the normal rainfall. They cover the western parts of Rajasthan and the Kutch region of Gujarat. Thus; total population affected by drought in India spreads over approximately 68% of the country's land area, covering about 1,30,982 villages.

Droughts have been categorized in the following types:

- Meteorological Drought – refers to simple absence/deficit of rainfall . It is the least severe form of droughts and is often identified by sunny days, hot weather and conditions of dryness.
- Hydrological Drought – reduction of natural stream flows or groundwater as well as stored water supplies as a result of meteorological drought.
- Agricultural Drought –refers to insufficient moisture level in soils in order to maintain average crop yields. An extreme agricultural drought can lead to a famine or prolonged shortage of food in a restricted region, causing widespread disease and death from starvation.
- Socioeconomic Drought - correlates the supply and demand of goods and services with the other three types of drought.
- Agricultural, hydrological and socio-economic droughts occur less frequently than meteorological drought because impacts in these sectors are related to the availability of surface and sub surface water supplies. It usually takes several weeks before

precipitation deficiencies begin to produce soil moisture deficiencies, stress on crops, pastures, and decline in the stream flow and reduced reservoir and lake levels. (UNISDR, 2009).

Irrespective of the type of drought, the impacts include both, macro or state / regional / nation level manifestations such as regional drop in ground water, public debt due to large scale crop failure; and micro level manifestations in the form of increased indebtedness, under nutrition etc. as shown in Figure 1.1

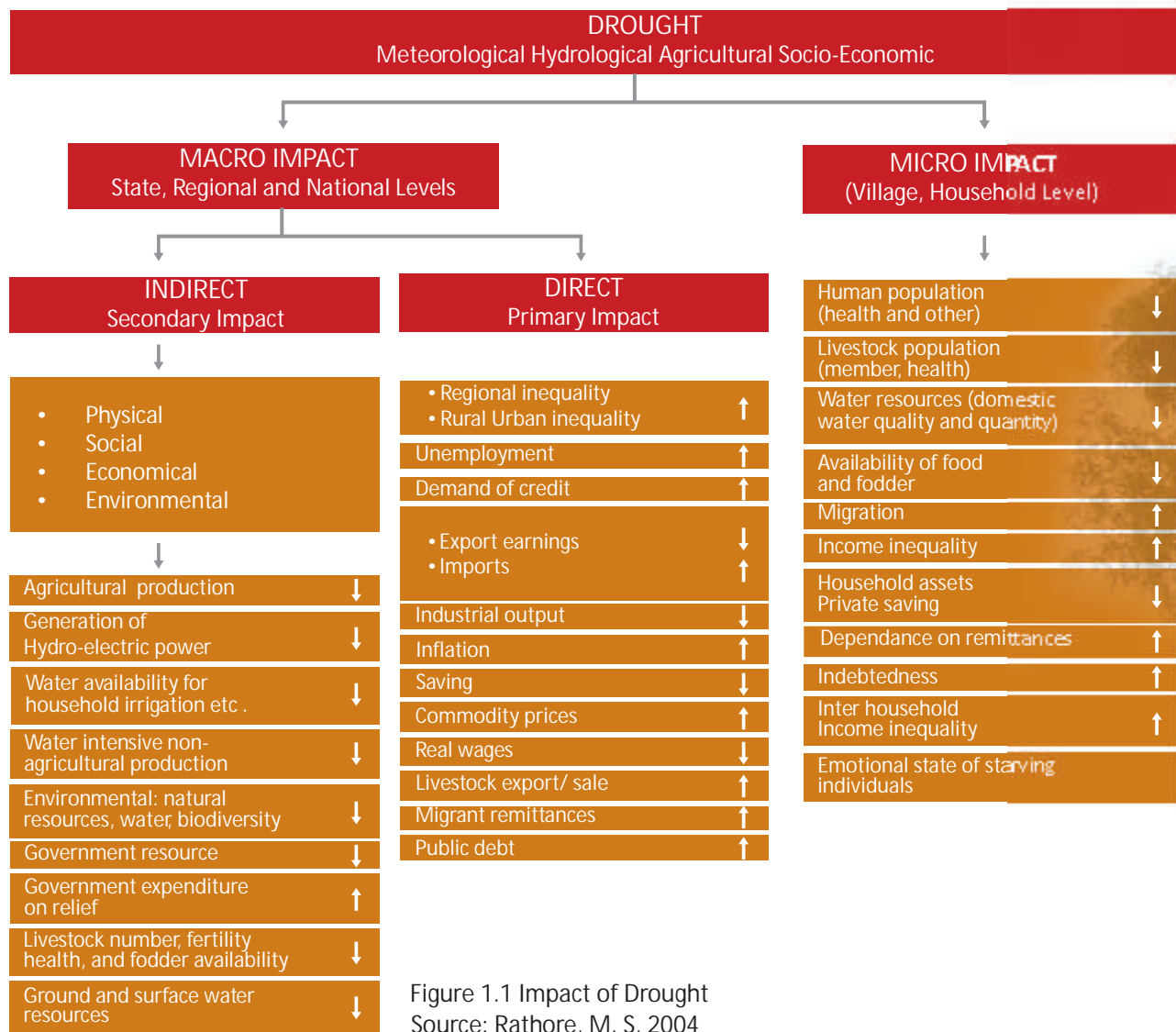
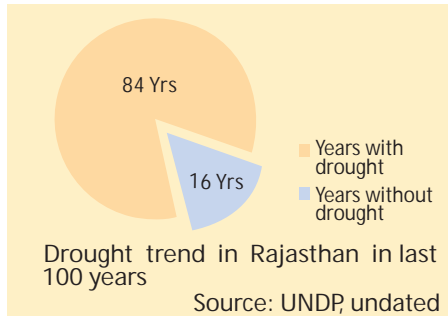


Figure 1.1 Impact of Drought
Source: Rathore, M. S, 2004



Akaal utna hi hai magar uska asar zyada hai. Pehle badi zameen hoti thi, usmen chhote chhote tukdon ko bari-bari se jota jata tha. Is prakar se zameen bina khaad ke bhi upjau rehti thi. Ab kyon ki zameen ka batwara ho gaya hai sab ke paas chhote tukde hi hain, unhe khad se upjau banana padta hai. Tractor ke prayog se ghaas ka chara bhi khatam ho gaya hai"

(Drought / dry period spells may not have changed but the effect of drought has become worse over the years. Earlier, we had large plots of land; portions of this land were ploughed and the rest was left on its own to regain its fertility. Now, with the division of families, we have much smaller land holdings that have to be made productive using fertilizers. The use of tractors has virtually finished local grasses used as fodder.)

- Community members,
Ekadali village, Balotra Block

1.2 Drought and its relationship with Western Rajasthan

Rajasthan, the largest state of India has a history of chronic drought. The drought of 2009 was the worst witnessed by India in the last two decades; it was the fifth continuous drought in Rajasthan. Drought of 2009 affected 32,833 villages spread over 26 of the 33 districts of the state.

According to Census 2001, 60 percent of the land area of Rajasthan comprises of the arid western part, which contains the Indian segment of the Thar Desert and accounts for about 62 percent of the country's hot arid area. This region faces a major challenge of desertification due to recurrent droughts and increasing human and livestock pressures. Moreover, Thar has one of the fastest demographic growth rates in the country. As per the estimates of the Census of Government of India, there has been a two-fold increase in its population during the four decades from 1921 to 1961 and a four-fold increase till 2001. This has put additional stress on the natural resource base. Such drastic increase in population has resulted in more competition for the limited resources. Further, government control of

common property has alienated people from their own resources, causing severe deterioration of these resources. It is important to note that all 33 districts of the state are currently suffering from sharp depletion of groundwater and damage to the livelihood and animal husbandry sectors.

The extent and intensity of drought impacts is determined by a complex mix of prevailing conditions of vulnerability or resilience. These include social, economic, structure of the agricultural sector, management of water resources, governance structures and initiative, to name a few. The ability to cope with a slow onset and longer term disaster such as drought requires diverse fall-back mechanisms, ranging from own savings, credit, alternative livelihoods, social networks and migration. Absence of such fall-back mechanisms can lead to a chronic stress on the already fragile coping mechanisms, exposing people to the effect of drought and causing further deterioration in the quality of life.

Older generations in Rajasthan recount that foreign invasions through the western borders of the state have been few. This was simply because invaders could not survive the severe conditions of food and water scarcity in the Thar.

The most fundamental survival strategy of desert communities has been the structuring of desert life around the possibility of survival itself. This pertains to the fine balance between 'jal, jangal, jameen, janwar aur jan' : water, forest, land, animals and human beings. Desert communities balance all of these assets (and liabilities) with utmost finesse through collective will and action. For instance, conservation of water resources at the family level as well as community level was a part of the daily routine of the people. It was regimented through cultural and traditional and even religious practices. The choice of animals too was guided by climatic conditions. Specific varieties of cows that could survive in the desert and small ruminants such as sheep and goat have been domesticated. Camels have been the most common mode of transportation, given their ability to survive without food or water for days.

Western Rajasthan has traditionally developed and adopted practices for optimal use, conservation and recharge of water. Maintenance of the Agor (catchment of ponds), desilting and cleaning were undertaken by the community based on the lunar calendar. Bathing in the pond and polluting the pond water was a punishable crime in the traditional system of community led

governance. Water, being a scarce resource, was used sparingly and with caution. Even while bathing, water was collected and given to the domestic animals. Khejari tree was considered sacred and worshipped for its ability to survive through dry spells and provide fodder and food for the communities. Several visionaries, saints and social leaders in the region have helped people articulate the value of these natural resources and guided/ motivated their followers to use them optimally and conserve them religiously. The founding sage of Kolayat, Sage Kapila is believed to have motivated people to religiously conserve and value water as the most important asset of the common man. He questioned the then prevalent royal practice of frequent well-digging (in some cases even digging of a new well everyday for the king) and motivated people to maintain and conserve local ponds as a collective.

Orans (sacred groves) have been a source of natural wealth like fodder, fuel, timber, berries, roots and herbs. These provide traditional non-timber forest products and subsistence goods to the people; developing seedling orchards and seed production areas and thereby sustaining the essential ecological processes and life support systems. Orans also benefit the villages through their water bodies and diversity of trees. The founder sage of the 'Bisnoi' community gave them 29 ('Bees-nau' in local parlance hence the name Bisnoi) commandments to follow. Most of these commandments were in relation to conservation of natural resources to

maintain the fragile ecological balance in the desert. As an illustration, it is forbidden to chop a Khejari tree. Similarly, it is a sacred duty to preserve water bodies and protect the local deer.

Over the recent years, there has been a visible decline in all of these lifeline resources of desert communities. The new 'development models', based on modernisation and legislative control, have virtually isolated local communities from their own natural resources either for the sake of conservation or on the pretext of providing development to the local people. In addition, increasing pressure from population and livestock in the current context of climatic variability, forest wealth, water sources and harvesting structures, have depleted and dilapidated. The water harvesting structures that were once managed and maintained through voluntary action by the community are now taken up under wage-employment schemes of the government. The depth of the pond, conservation of the catchment and other issues specific to local conditions have been neglected and the focus is only on measuring the 'quantity of work' done. Water scarcity is being addressed not through conservation methods but 'provisioning' of piped water drawn from underground sources. In a context where sale of milk and water was considered to be a taboo, given the crucial contribution of these two resources to life in the desert, water is now sold at a premium. As people's control over the natural resources has reduced, vulnerability of the people to drought risk has increased.



Droughts occur frequently in the areas affected by desertification, and are generally a feature of their natural climate. Desertification is the degradation of the land in arid, semi-arid and sub-humid dry areas, caused by climatic changes and human activities. It is accompanied by a reduction in the natural potential of the land and a depletion in surface and groundwater resources. Overgrazing, farming of average land, destruction of plants/afforestation in dry regions and incorrect irrigation in arid regions cause desertification. The degradation of land due to desertification has a serious compounding effect on drought as it reduces water retention of the soil, builds up heat on the earth's surface, which results in greater evaporation rates and reduction of rainfall.

Desertification and Drought constitute major causes of forced human migration and environmental refugees, deadly conflicts over the use of dwindling natural resources, food insecurity and starvation, destruction of critical habitats and loss of biological diversity, socio-economic instability and poverty and climatic variability through reduced carbon sequestration potential. The

impacts of drought and desertification are among the most costly events and processes. Desertification threatens agricultural production on marginal lands, exacerbating poverty and undermining economic development.

The loss of natural resources, environmental degradation and desertification affects food and fodder security. The poor households that are affected by drought and desertification do not have adequate resources to deal with the food and fodder shortage leading to insecurity and hunger. Both drought and desertification also influence water availability, which is projected to be one of the greatest constraints to economic growth in the future. The situation of women and girls who are responsible for fetching water is therefore worsened by drought and desertification.

The effects of desertification extend beyond the affected dry-land areas as the level of vulnerability, due to the combined impacts of desertification and socio-economic susceptibility, increases the probability of human migration.

1.3 Vulnerability as a determining factor for impact of Droughts

Vulnerability is a multi-layered concept that comprises of a progression of conditions that limit the ability of a population to cope with hazards, shocks and stresses. In this way, vulnerability is rooted in the basic ideologies on which society itself is built or structured.

Vulnerability of a group of people begins to manifest through the unsafe conditions, or physical, economic and social circumstances. These ultimately expose populations to natural hazards. Dynamic pressures, by way of processes and institutions (or lack thereof) exacerbate the root causes of vulnerability.

It is thus a progression of conditions, and is influenced by the contexts within which populations exist. Vulnerability is exacerbated during disasters, which damage the assets and capacities of the affected groups, deterring their ability to recover. These relationships can be understood through the Pressure and Release (PAR) framework given in Figure 1.3.

It is important to note that vulnerability does not only refer to economic destitution alone, but also social deprivation due to isolation, physical weakness, and powerlessness in society. Collectively, these form a 'deprivation trap', pushing people into vulnerable positions. A hazard thus becomes a 'disaster' for those that are in such vulnerable positions.

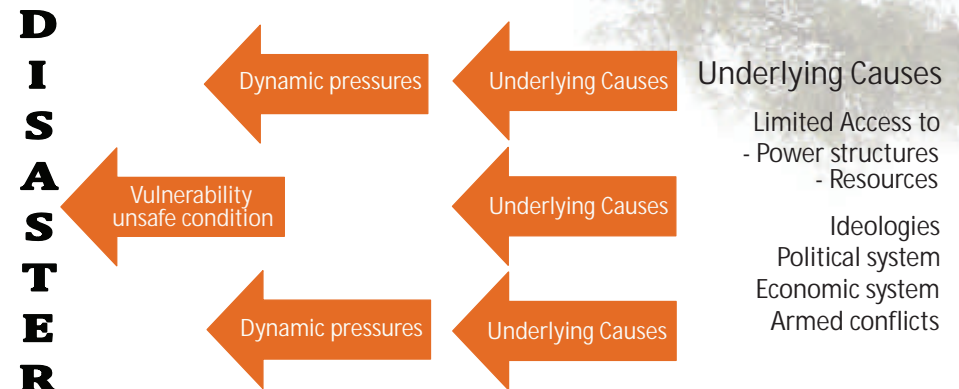
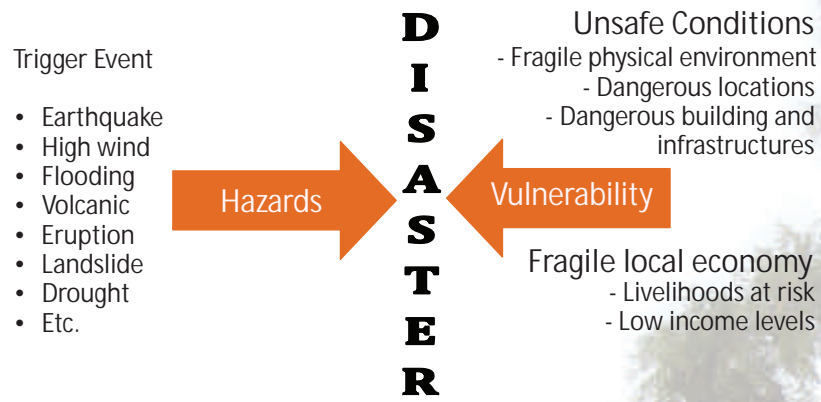


Fig 1.3 : Pressure and Release Framework
 (Source: http://www.globalcrisisolutions.org/libraries/understanding_vulnerability.pdf)

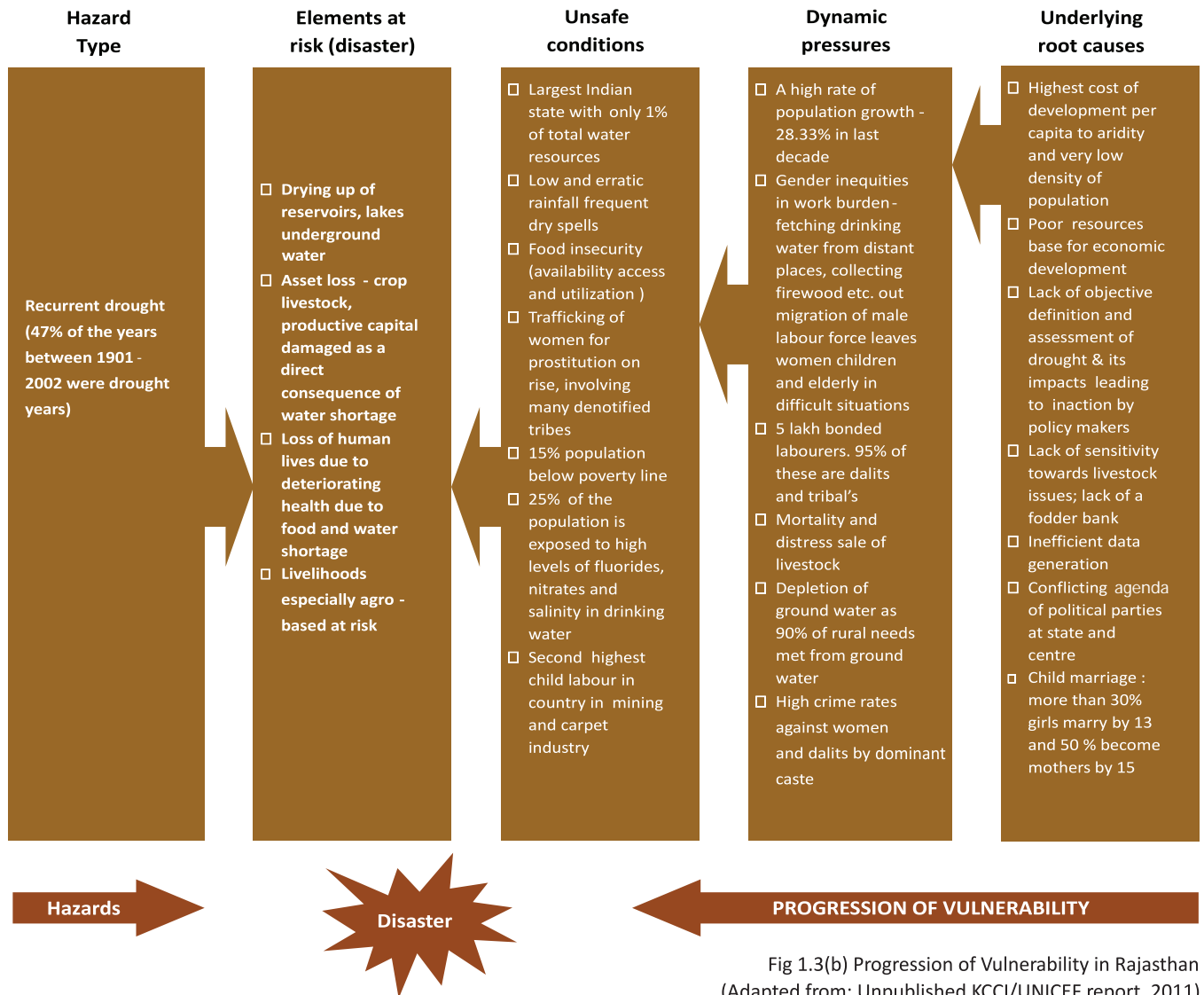


Fig 1.3(b) Progression of Vulnerability in Rajasthan (Adapted from: Unpublished KCCI/UNICEF report, 2011)

Social exclusion as one of the root causes of vulnerability of the marginalized groups in Rajasthan

Social groups that are most vulnerable to drought include Scheduled Caste and Scheduled Tribe (SC and ST) population, women and girls. Dalit population of Rajasthan essentially SCs, are approximately 11.8 million. Given that 75 percent of Rajasthan's population is rural and lives in remote and scattered *dhanis* (hamlets), these groups are forced to travel long distances even to meet the basic need of drinking water. Even then, Dalits are often denied access to communal water points due to un-touchability.

In recent decades, social exclusion has been established as one of the fundamental reasons for vulnerability of marginalized groups. Indicators of social exclusion may include poverty, deprivation, low educational qualifications, labour market disadvantages, joblessness, poor health and poor housing or homelessness, illiteracy and incapacity to participate in society. In general, social exclusion stresses on the processes through which people are being deprived

rather than merely the situation in which people are. Social exclusion therefore refers to lack of participation (or denial of equal opportunity) in society and emphasizes the multi-dimensional, multi-layered, and dynamic nature of the problem, resulting in a range of disadvantages at the same time. (Unnati, 2010)

There is a strong prevalent discrimination against Dalits and day to day living conditions are harsh, especially due to social exclusion worsened by repeated occurrence of drought.



According to informal estimates, Dalits in Rajasthan, except Bhils and Meghwals, are landless. Historically, they settled on common lands. Their homes and assets are therefore at risk during government drives to check encroachment. Many of these were earlier nomadic groups that settled in the 80's at the periphery of the village. They were socially ostracised because they were generally without any assets, had a history of theft, petty crime and begging as primary survival strategies and were late settlers. Without access to land and permanent house, these families are entitled to jobs under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) but cannot use the scheme to create household assets such as 'tankas' or develop farmlands. As a result, they are caught in a vicious cycle of poverty and marginalisation.



Barmer and Jaisalmer districts of Rajasthan have about 30 per cent SC and ST populations, who have been historically denied and obstructed from accessing common services including water. SC communities are the worst affected as they are placed lowest in the socio-economic, cultural, and religious strata.

Unnati's work covering 200 villages in Rajasthan indicates that annually there are about 30 cases registered in relation to discrimination and abuse of Dalits at the water points. At the time of prolonged drought, Dalits have been observed to face increased hardship in accessing water which stretches their coping mechanism, resulting in migration to distant places, increasing their vulnerability and risks. There are many occasions when the community surrenders itself to access public services at the cost of humiliation, abuse, sexual exploitation and bondage. These situations are repeatedly recounted by the women and men seeking support to address the issues of social isolation, shame and despair. This situation demands an immediate response to address the issues of access to water, which is essential for the survival and linked to the social devaluation of the dalit community on a daily basis.

Though any form of caste-based discrimination is constitutionally prohibited, life in rural Rajasthan is still feudally structured with a rigid caste system. Social exclusion of Dalits is more of an accepted norm visible in the limited social, economic and political participation of lower caste groups in mainstream processes. Discrimination is manifested in their lack of access to basic services, social security and common property resources like land and water. Dalit communities mostly live in abject poverty, marginalization, and caste based discrimination and fear of atrocities and violence.

Most Dalit households are either landless or marginal land owners. They are engaged mostly in subsistence agriculture, agricultural labour and animal husbandry. They are thus insecure in terms of access to drinking water, fodder and livelihood.

1.4. Analyzing Vulnerability of Dalits in Rajasthan

While drought occurs virtually in all climatic regions, the capacity to survive varies from person to person depending on the resilience of the person due to his / her access to dependable assets. For the purpose of this document, assets for well being of an individual and his/her family have been classified in five broad categories as articulated in the DFID Sustainable Livelihoods Framework (1998).

Drought as a hazard becomes a disaster when any one or more of the five kinds of assets: natural, social, physical, financial and human, face the risk of being damaged.

A study by Unnati to map the current status of access to key assets for well being in Western Rajasthan indicates the abysmally low level of access to these assets, especially by the traditionally marginalized groups. This fact is indeed one of the primary reasons that drought continues to deteriorate the life and livelihoods of the Dalits year after year.

Key highlights of the study, covering 1028 households of 20 villages across Three districts of Western Rajasthan, provides an understanding of the extent of access to key assets of well-being by the Dalits under:

"Akaal mein mazdoori bhi kam milti hai". (During drought even wage rates are low.) - Community member, Kalyanpur village

"Sawaal hai saamudayik sansadhanon ke nyaypurn vitaran ka. Aaj 80% gochar kharab hogaye hain MGNREGA ya unka adhigrahan ho chuka hai. MGNREGA ke taahat jab saamudayik zameen jaise gochar ka vikas hota hai, dalit ko kewal kaam karne ka paisa milta hai, vikas ka laabh nahin. Turant hi uuchi jaati ke log kehte hain in zameenon par hamara hak hai tumhen to paisa mil gaya na"

(For accessing common /community natural resources, it is actually a question of equity. Today, 80% of common grazing lands have either been degraded or encroached. When common lands such as 'gochar' (grazing land) are developed/revived through MGNREGA, Dalits only get the MGNREGA wage - not the benefits of a developed grazing land. Immediately the upper caste people come to claim their rights over common lands saying that gochars are grazing lands designated for cows. Since dalits have only small ruminants and not cows, they do not get the benefits of developed lands.)

- Premlata, Jai Bhim Vikas Shikshan Sansthan

Common property resources, particularly water, are one of the most important factors linked to livelihoods in a desert context. Revival and management of traditional water harvesting bodies like nadi (small pond) and its catchments, if not addressed, have the potential to adversely impact Dalits the most. Increasingly, resource-rich dominant communities have been extracting water from the common resources for commercial purposes such as sale of water through tankers, without investing on management of these resources. Conversely, Dalits continue to depend on these community resources for drinking as well as for livelihood, particularly the use of water for the goats and sheep, which are the main source of livelihood. It has been observed that dalit families have been selling the animals early as they are not able to rear them to an optimal period when they can get the best price. There is a rapid undermining of supportive institutions that kept the common resources intact for generations. The onus of management of common property resources are currently with no one. It is in the best interest of the Dalits to take charge of the management of the commons. It is also very clear that they alone cannot do it in a hierarchical social set up.

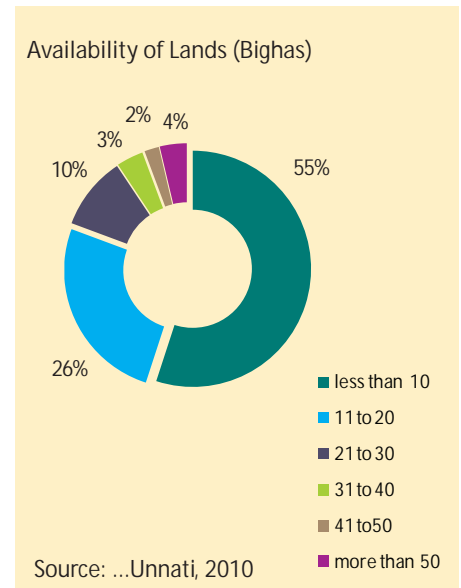
Natural assets:

These relate to the natural resource stocks (like land, water, wildlife, biodiversity, environmental resources), from which resource flows are derived. Usually, drought occurs when more water is taken out of the soil than is added to it. This is often the result of a combination of many days without rain and excessive use of water for human activities.

Predominant natural assets that people in Western Rajasthan own are usually private land, common land (Oran, Gochar and Agor), water and livestock (Goats, Cows and Camels). Due to the dry geo-climatic conditions in the state, water is very low in quantity and absence of water severely affects access to livelihood, which makes people vulnerable. The land owned by people becomes unfit for farming due to low soil moisture and non-availability of water for irrigation. This results in the depletion of livestock and many of the common land areas are on the verge of becoming or have already become wastelands.

Dalits in Rajasthan have very little access to common land and possess either small land holdings or no land at all (55%). Only two percent are large land owners, with 51 to 100 bighas of land.

Sometimes, they have small animals but rarely any fodder to feed them. In a way, they have a very restricted access to natural assets, a condition that has been thrust upon them due to their caste.



Financial assets:

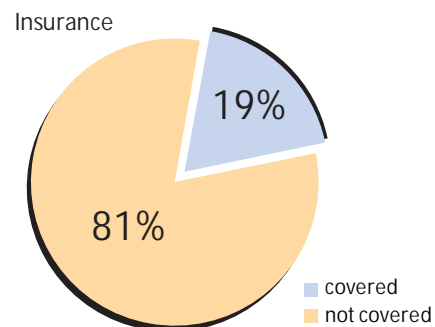
These refer to the financial resources which are available to people, including savings, supplies of credit or regular remittances or pensions.

One of the greatest threats to people from drought are in relation to crop failure due to unusually low amounts of rain. This can result in increased food prices, food shortages, and even famine. Loss of yield resulting from drought is a direct or first-order impact of drought. However, the consequences of that impact (for example, loss of income, land degradation, water stress) are important but are secondary or even tertiary impacts.

Dalits in Rajasthan do not have access to the financial resources as they earn very low wages. In the absence of mortgageable assets, they do not have access to credit. The small animals such as goats, which they own, are sometimes deemed a worthy enough asset against which they get credit. These animals are like ATMs (Any Time Money) for the Dalits as they can earn money by selling off the goat skin, its bones when it is dead and even by burying them. Goats are the only major financial asset for them.

Insurance facilities as a means to financial security during drought are not common among the Dalits. According to the study by Unnati, only 19% people are covered by life insurance, but even this has been more of a savings strategy rather than insurance cover per se. Additional cash /material assets are created through access to government schemes like MGNREGA, Indira Awaas Yojana for housing (IAY), and Public Distribution System (PDS).

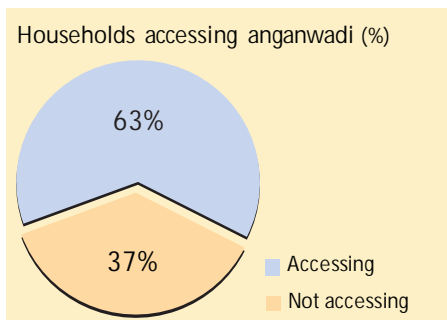
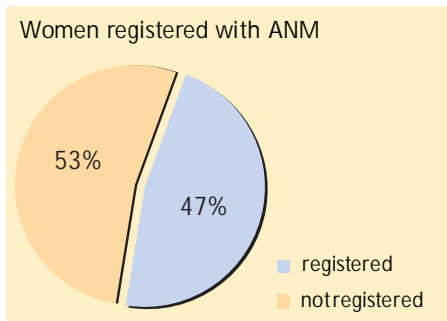
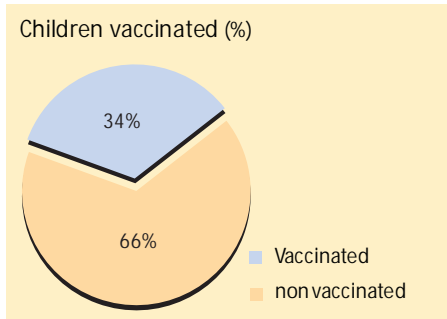
The baseline data indicates that 60% households are covered under MGNREGA. However, there are villages that still have to be covered by MGNREGA. In all, 57% households have benefitted from Indira Awaas Yojana and own a small house; 63% children access Anganwadi's and 61% households can access the Public Distribution System.



80% of mining labourers in Western Rajasthan are dalits.

This has assured them impressive wages – Rs. 200 per day for unskilled work and Rs. 400 per day for skilled labour. However, easy income is coupled with the risk of malaria and sclerosis due to risky mine environment. Periodic financial surplus has also led to many people falling prey to alcohol and drug abuse.

Those Dalits who are working in the mines do not prefer to work as manual labour in MGNREGS for various reasons, one of them being the low wages actually disbursed in the field. Valuation of work done does not happen immediately upon completion. As a result, the quantity of work accomplished deteriorates over time, especially for jobs such as earthwork. Moreover, caste-based discrimination is reported in many cases such as, non-Dalit workers getting wages without doing any work as part of a mixed team of Dalit and non-Dalit workers.



Human assets:

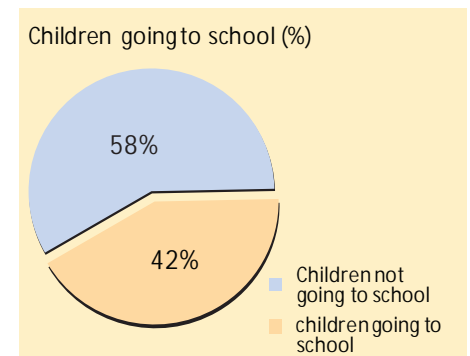
These relate to the skills, good health knowledge and ability to labour. Good health is related with access to safe and hygienic environment within the habitat that supports healthy living conditions. Limited access to water (that too of poor quality) puts enormous strain on people's health. Additionally, as population and affluence increase, demand for food and water has been observed to increase, thereby increasing the strain on limited resources. Dalits also work as artisans or labourers in mines, farms and construction sites; under highly unsafe work conditions that have been observed to cause several diseases and even threaten life.

Access to health services at the village level is severely limited due to inadequacy of human resources within the public health care system as well as the sheer remoteness of Dalit hamlets. In fact 34% of the children up to four years of age have been vaccinated and rest 66% are not being vaccinated regularly.

Registration with the Auxiliary Nurse Midwife (ANM) is necessary for being able to access further health services.

As per the survey, only 47% of the pregnant women were registered with the ANM. None of the pregnant women are registered with the ANM in 55% villages.

Formal education is not much widespread amongst the Dalits. Many families themselves are reported to be averse to formal education, given their extremely low social status and very little hope of things changing for the better. It has also been reported that Dalit children are given menial jobs like cleaning of classrooms and toilets in the school. Their utensils for mid-day meals are kept separate from that of other children. As a result, they do not opt for formal education. Only 58 percent eligible for education go to school.



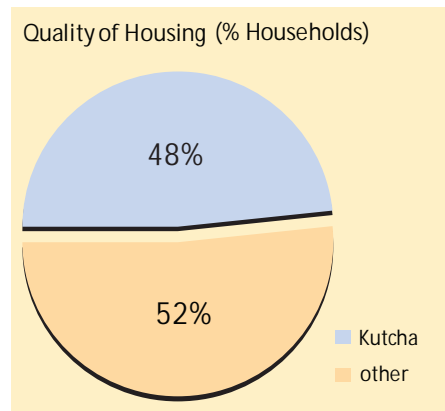
Physical assets:

These relate to the infrastructure facilities (such as transportation, shelter, water, energy and communications, etc.) that determine the quality of life and well-being of an individual. While drought may not directly and instantly damage infrastructure, as in the case of sudden onset disasters such as earthquakes and cyclones, dry conditions do trigger disaster events. For instance, when vegetation dries up during drought, risk of wild fire increases, threatening homes, crops, and life. Wind can reduce visibility during drought by blowing loose, dry soil into the air, causing transportation delays and accidents. Water storage and conservation structures degrade due to excessive heat and lack of moisture in the air.

Villages in Rajasthan have access to several infrastructure elements such as road connectivity and shelter. Piped water systems have also been laid out in many habitations, but the functionality and sustainability of these infrastructure installations is a primary question.

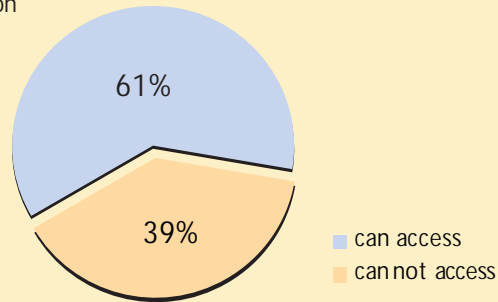
Due to social marginalization, Dalits are pushed to the peripheries of the

villages. Many of them do not have access to pucca houses as they do not have access to land and are forced to migrate. According to Unnati's survey, about 52% households have kaccha houses and 66% households do not have water storage structures, out of which 55 % are below poverty line. The rest 34% have water storage facilities but have to travel very long distances to get water for themselves.



Barmer has an annual average rainfall of 210 mm, while Jaisalmer has 170 mm as against the state average of 540 mm. Scarcity of rainfall engendered local traditional wisdom for water harvesting and management. Unfortunately, this wisdom and technology has been slowly dying due to installation of piped drinking water systems, which are unreliable, and lack community management. While resource-rich communities have created their own mechanisms (tractor, tankers, tanks, tube wells etc.), the vulnerable sections like dalits remain in the fringe, waiting for the single source of piped water to fulfil their needs. These families who live in scattered dhanis are physically away from the main source of water, which increases their drudgery in terms of fetching water. Poorer dalit families do not have the resources to even own rainwater harvest tanks.

Access to Public Distribution System (% Households)



"Women's SHGs have not taken off in a big way in drought prone areas. Women are at a natural disadvantage because they are not actively involved in income generation and can't even save an average of Rs 30 per month. Even if they manage to save somehow, the group does not want to lend to the ultra poor"

- Mota Ram, Community Worker

Social assets:

These refer to the social resources (networks, membership of groups, relationships of trust, access to wider institutions of society) upon which people draw during times of need. In many parts of India, society continues to be stratified along caste, ethnicity, and religion among others. Over generations, such stratification has resulted in the deep entrenchment of social, economic, political and geographical inequities. Social groups that have tended to suffer the most are Scheduled Castes (Dalits) and Tribes, religious minorities, women, elderly, disabled and children. Stratification exists even within these groups, creating multiple layers at which inequities operate. For instance, in a patriarchal society, a disabled woman faces double the discrimination, on account of being a woman and being disabled. During a disaster, these pre-existing inequities faced in peacetime are further exacerbated.

Human

- Skills – Artisans, labourers in mines, farms, construction sites
- Education systems exist but access not common
- Little awareness about health

Financial

- Small wage earning
- No assets to mortgage
- No savings
- Insurance – as a saving instrument

Social

- Limited access to SHGs by Dalits.
- Unrepresentative PRIs

Assets of Well-being:
Status of Dalit households

Physical

- Dalit hamlets located in remote areas
- Limited access to Shelter
- No water storage structures
- Absence of water supply in Dalit hamlets

Natural

- No access to common land
- Possess either small land holdings or no land for subsistence agriculture
- Remotely located Dalit hamlets

Assets of well being or Dalit Communities in Western Rajasthan



Drought as a Disaster: Policy Overview

2. DROUGHT AS A DISASTER : POLICY OVERVIEW

This section analyses existing disaster management policies and how they address needs of the vulnerable populations with respect to drought. Key policies include: National Disaster Management Act 2005, National Policy on Disaster Management 2009, District Disaster Management Plan (DDMP), Jodhpur and Barmer.

The National Disaster Management Act 2005

Enacted in 2005, the Act focuses on proactive prevention, mitigation, and preparedness-driven approach for effective management of disasters. The Act lays down institutional, legal, financial and coordination mechanisms at the National, State, District and Local levels. These institutions are not parallel structures and are expected to work in close harmony. The Act focuses on planning, organizing, coordinating and implementing actions that are necessary for the prevention of disaster, mitigation or reduction of risk, capacity building, preparedness, prompt response rescue and relief, rehabilitation and reconstruction. The Act empowers the Central Government to appoint the

National Disaster Management Authority, with the Prime Minister of India as the Chairperson. To assist the National Authority and an advisory committee called the National Executive Committee consisting of experts in the field of disaster management having practical experience of disaster management at the National, State and District level is set up.

National Disaster Management Policy, 2009

The National Policy on Disaster Management focuses on building a safe and disaster resilient nation by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response. The policy promotes community based disaster preparedness approach including the integration of policies, plan and execution, thus promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education. It focuses on mainstreaming disaster management into developmental planning processes and encouraging mitigation measures based on



technology, traditional wisdom and environmental sustainability. It recommends establishing institutional and technological frameworks to create an enabling regulatory environment and a compliance regime. The policy encourages the states to create response capabilities from within their existing resources, ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society. The policy also touches upon promoting a productive and proactive partnership between various stakeholders, including the media for disaster management.



District Disaster Management Plan (DDMP)-Jodhpur and Barmer

The Rajasthan State Disaster Management Policy, on the lines of the National Disaster Management Act 2005, marks a paradigm shift in the way the government can respond to drought. It recognizes the need to incorporate the management of slow onset disasters such as droughts into the larger developmental planning framework.

The state policy had also proposed that the DDMPs should be formulated in such a way that response to multiple hazards can be managed effectively. The DDMPs for Jodhpur and Barmer have derived their basic approach from this guidance and cover actions for addressing various issues in relation to disaster management. The DDMPs assess the hazards and response on the scale of high, medium and low, considering the relation between the frequency of occurrence and impact of the disaster, the reliability of warning system, government efforts, people's participation, capacity of the administration to manage specific disasters, the knowledge base of the Government Officials and awareness level among the people's representatives.

The DDMPs specifically address each kind of disaster adequately with a prevention and preparedness driven approach. The DDMPs stress on the causes of disaster and the relation between the frequency of its occurrence and its impact, the reliability of warning system, govern-

ment efforts, people's participation, capacity of the administration to manage specific disasters and formulation of the action plan.

Drought Manual- Rajasthan

The manual gives the organizational structure and its role in the management of drought in Rajasthan. Delving on the elements of management of an acute drought, it lays emphasis on :

- (i) Constant monitoring of rainfall and hydrological status;
- (ii) Detection of early warning signs other than rainfall 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.

One of the most critical guidelines in the Drought Manual is in relation to declaration of drought based on "Girdawari by the Patwari or Village chief". The manual also lays down that

the Patwari will be responsible for conducting all relief activities at village level, including preparing a list of persons deserving gratuitous relief as per agreed criteria and put up this list before Gram Sabha through Gram Sevak for approval. He is expected to ensure that there is no irregularity in the relief works and payment of wages is timely.

Drought Guidelines – NDMA

The Guidelines place emphasis on risk management, rather than following the traditional approach of crisis management. It lays stress on identification of vulnerable regions and communities and integrating with the planning process by prioritizing specific areas where progress can be made in risk management.

The Guidelines also describe the situation of drought in the country and the growing complexity of drought impact. The Guidelines enumerate the measures to improve assessment and early warning for drought and touch upon the issue of timing of response and relief time not matching the user needs. The document stresses on the need for a shift, necessary in public

policy, from drought relief to drought preparedness and mitigation. It also puts forward Prevention, Preparedness and Mitigation driven approach along with capacity building - human resource management, training, and education.

Comparative Analysis of the Provisions of various Policy Instruments :

Aspect	Approach to Drought	Guidance on Risk Reduction	Guidance on Community Participation	Guidance on Including Vulnerable Groups
National Disaster Management Policy, 2009	<ul style="list-style-type: none"> • Focuses on building a safe and disaster resilient nation by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response. • Does not adequately refer to slow on-set disasters. 	<ul style="list-style-type: none"> • Talks about identifying broad research needs in DRR and mainstreaming DRR in development agendas but does not provide guidance on how this can be done. • Promotes public-private partnerships for risk reduction 	<ul style="list-style-type: none"> • Encourages community participation at various levels and community based preparedness programming including last mile integration of policy, plans and execution, mostly with regard to rapid on-set disasters. 	<ul style="list-style-type: none"> • Recognizes that the economically and socially weaker segments of the population are worst affected by disasters. Vulnerable groups highlighted in the Act are women, orphans, elderly and differently abled persons.
Drought guidelines – NDMA	<ul style="list-style-type: none"> • Provides guidance on drought management but does not tell anything about drought declaration. 	<ul style="list-style-type: none"> • Encourages horizontal partnerships with the community by involving the DDMA, PRIs, ULBs, NGOs, SHGs, CBOs and, most importantly, the vulnerable groups which are most likely to be affected. 	<ul style="list-style-type: none"> • The guidelines focus on community participation in drought management activities at the village/Tehsil level, and the low levels of involvement of Self Help Groups, NGOs and the corporate sector in drought management. It talks about community based disaster preparedness approach for the management of drought. 	<ul style="list-style-type: none"> • Emphasis is on the vulnerable communities; It identifies the problems and needs of the vulnerable and talks about how long term relief can be provided.
Drought manual - Rajasthan	<ul style="list-style-type: none"> • It puts forward measures for addressing conditions of scarcity, criteria for declaration of scarcity and the process for declaring scarcity. However, it continues to look at drought as a condition of "scarcity" and not a disaster. 	<ul style="list-style-type: none"> • Promotes Risk Reduction which involves monitoring of rainfall and Hydrological situation as well as detection of Early Warning Signs. Girdawari is normally conducted when drought is at its peak and damage to people's well being has already been caused. 	<ul style="list-style-type: none"> • Promotes community interaction by establishing of Drought Information Centre where information such as weekly forecasts, seeds availability, market information and crop planning strategies can be obtained. However there is no mention of quality assurance / monitoring of these processes. 	<ul style="list-style-type: none"> • No explicit focus on marginalized groups and their inclusion.

Aspect	Approach to Drought	Guidance on Risk Reduction	Guidance on Community Participation	Guidance on Including Vulnerable Groups
District Disaster Management Plan (DDMP)- Jodhpur and Barmer	<ul style="list-style-type: none"> • The DDMPs are based on a preventive and preparedness approach. In the case of drought, the DDMPs list the type, causes, history and indicators of drought and enlist the measures that should be taken before and at the time of disaster. • Role of the district administration at the time of disaster has been detailed out. • Provides guidelines for the community regarding the economic use and conservation of water. • Inadequate emphasis on monitoring mechanisms. 	<ul style="list-style-type: none"> • Emphasis on assessment of risk to prepare mitigation and prevention plan for various disasters. • DDMPs touch upon the need for developing the coping capacity or social security of communities. • In the case of drought, the DDMPs list the type, causes, history and indicators of drought and explain the measures that should be taken before and at the time of drought including fodder arrangement, animal camps and drinking water. 	<ul style="list-style-type: none"> • Provides a set of guidelines for the community regarding the economical use and conservation of water. • Also talks about public participation in risk assessment and response but does not adequately describe how this can be done. • It provides guidelines for the community for economical usage and conservation of water. • Little thrust on people-based monitoring mechanisms required at different stages of disaster management. 	<ul style="list-style-type: none"> • DDMP assesses vulnerability in physical, economic and social terms and emphasizes on the need to collect disaggregated data with regard to vulnerability of vulnerable households. • Vulnerable families have been classified as Below Poverty Line (BPL), Scheduled castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC) and also on the basis of land holding, occupation and families with widows and disabled.

Gaps in the existing policy framework

An analysis of the different policy instruments highlights the following critical gaps that are fundamental to the way drought risk of vulnerable communities can be addressed. These are:

- **Inadequate attention to slow onset disasters like drought** – The different instruments focus on a proactive prevention, mitigation, and preparedness-driven approach for effective management of disasters but do not adequately touch upon slow on-set disasters like drought. Drought is different from other rapid on-set disasters as the effects of other disasters are immediately visible where as the effects of drought accumulate slowly. The slow on-set nature of drought therefore requires closer tracking and more time to plan and implement an appropriate response. Further, it takes months and sometimes years to recover from drought. At the same time, drought events often occur with such frequency that people have no time to recover before another drought hits. This results in increasing poverty and chronic food insecurity – with vulnerable households finding it hard



to meet their basic needs year after year.

The impacts of drought are largely non-structural and spread over a larger geographical area as compared to damages due to other natural disasters. The non-structural characteristics of drought impact evidently hinders the development of accurate, reliable, and timely estimates of severity and, ultimately, the formulation of drought preparedness plans with the seriousness and specificity of disaster preparedness plans. As most policy responses are an attempt to address immediate and visible effects, drought does not attract the same degree of attention, interest and effort.

Not only is there a serious concern in relation to recognition of drought as a disaster, there are also issues with regards to the entire process of drought declaration that must precede any assistance to the affected families by the government. As part of the procedure of declaring drought, the '*Patvari*' or the village accountant responsible for keeping various records, especially land and crop production, conducts / compiles

Girdawari' or record of land cultivation, based on which agricultural losses are calculated and drought is declared. As per the Drought Guidelines developed by NDMA, generally areas with 50 percent or less *girdawari* are considered to be drought affected. In practice, *Girdawari* is conducted in late September - early October and the final analysis is available only by December/January. This uni-directional strategy is inadequate and to an extent too late in the progression of drought to mitigate its impact on the lives of the people. It is necessary therefore to develop a multi-stage and multipronged approach and include other factors for assessment such as soil quality analysis, delay of monsoon, etc. to predict the development of drought and its severity.



It is therefore important that first and foremost, drought must be recognized as a disaster and appropriate measures be developed to address drought conditions at various stages of progression.

- Inadequate reference to natural resource management as a risk reduction measure for slow on-set disasters - Poor management of natural

resources can grossly increase the likelihood of drought. For instance, inadequate attention to water conservation and groundwater recharge through uninterrupted and rapid run-off affects the availability of water, leading to water stress during the dry spell. Similarly, poor management of common grazing lands affects availability of fodder for cattle. Such mismanagement exacerbates the vulnerability of the poor and marginalised families when supply of essential resources is limited and available only at a premium. Thus, drought severity is dependent not only on the duration, intensity and spatial extent of a specific drought episode, but also on the demands

made by human activities and critical natural resources available in a particular region.

Drought is therefore a peculiar disaster that has a very strong and deep rooted connection with mainstream development approaches and processes.

There is an urgent need to replace the approach of crisis response with regard to drought with a more proactive approach which emphasises effective management of natural resources during non-emergency situations and, preparedness, mitigation, prediction and early warning for drought.

"Sukhe se sambandhit order abhaav ki baat karte hain, aapda ya sankat ki nahi"

(Drought related government orders refer to drought as 'deficiency' [of something] and not disaster or emergency)

– Dilip Bidawat, Unnati



Managing Drought Risk
Experiences in Community Managed
Disaster Risk Reduction

3. MANAGING DROUGHT RISK– EXPERIENCES IN COMMUNITY MANAGED DISASTER RISK REDUCTION

3.1 Introduction to Community Managed Disaster Risk Reduction (CMDRR)

CMDRR approach has evolved out of the CBDRR concept indicating a shift from "community based" to "community managed" action for risk reduction. CMDRR is an approach that allows communities to actively engage in the identification, analysis, monitoring, and evaluation of the risks and risk reduction measures, with the aim of reducing people's vulnerabilities and enhancing their capacities. It thus, places communities at the heart of decision-making and management of disaster risk reduction measures.

This section draws heavily from 'CMDRR Training Manual' developed by Cordaid and IIRR (2008) and attempts to provide basic understanding of CMDRR.

Basic tenets of CMDRR

CMDRR believes that community members should be the prime-movers of development action. It promotes development of the management capacity of communities through sharing and application of experiential learning. Both community and external professionals are co-learners; through the process of learning and doing, they "co-construct". Given the fact that in day-to-day reality of the communities at risk, development and disaster discourses are not separate but they together form the complex set of vulnerability conditions that affect their life and living conditions, CMDRR postulates that risk reduction measures should be integrated into the development plans as well as contingency plans.

The basic tenets of CMDRR are:

i. People's control and self-determination of risk and vulnerabilities

The Role of people in the community as the prime movers of change can be summarized as "OWN" –

- Ownership: The program is a concrete expression of the people's initiative, capacity and aspirations.

CMDRR is so far one of the most evolved responses to the need to straddle disaster and development discourses. Riding on strategies for "conscientisation", it is an important approach which can potentially challenge ideologies and beliefs around which societies are structured, thereby addressing some of the most fundamental causes of vulnerability.



- Winning program / project: the program has access to all and is controlled using inner resources. The targets are specific, relevant and attainable.
- Natural: The programs are so designed that they blend with the community's tempo of life.

The Role of development workers as agents of learning and change is envisaged as follows-

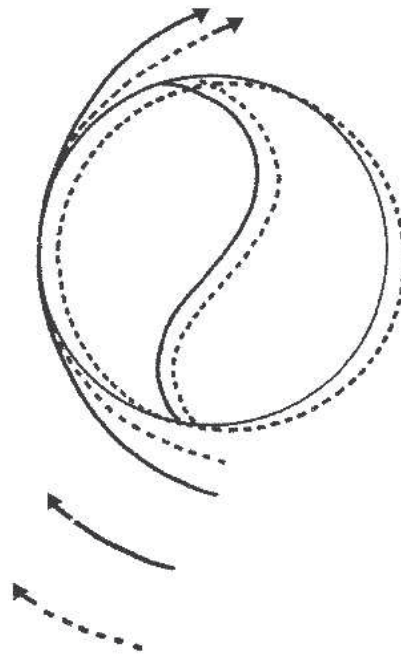
- Energizing, as it releases inherent powers
- Goal-oriented
- Community and development-centered

Role of external agency in the process of CMDRR is envisaged as –

- Process Facilitation (Stages of nurturing the process of development) that revolves around maintaining purposeful relationships with the community, identifying and developing community leaders/ organizers and formation of core group; providing guidance and support to people's organizations.
- Solidarity Development (Stages of organizational development) – ranges from building and consolidation, expansion, transition and finally institutionalization of positive change.
- Task Achievement (Stages of participatory strategy development for DRR) – including Participatory Disaster Risk Assessment, community development of DRR strategy, Action Planning and organized communication to implement their Plan.

- Process Facilitation
With community in the lead, DRR processes and solutions are facilitated
- Task Achievement
Agreed results are accomplished

Solidarity Development
In parallel, quality of process is guided by the end goal of solidarity development at community level



Triadic Dimensions of CMDRR

Source: IIRR, Cordaid, 2008

ii. Integration of risk reduction strategies in development plans and contingency plans

Development and emergency initiatives may be structured sectorally, but human life is not. By putting communities at the centre of the management process and allowing them control of DRR initiatives, programmatic divides can be overcome.

iii. Capacity building of community institutions to implement and sustain risk reduction measures through structured trainings, mentoring or organized action and documentation

Under the CMDRR approach, structured processes for building the capacity of communities and their institutions are set up for enabling communities to effectively manage DRR interventions. These range from simple sensitization efforts to formal trainings, documentation for reflection and structured learning and mentoring over a period of time.

iv. Policy advocacy for large scale change

CMDRR approach helps in arriving at innovative solutions that are workable, sustainable as well as scalable. This is possible due to the fact that solutions and their management and sustainability strategies are designed on the ground by the people themselves. Hence, the potential for sustainability and scalability is high. Scaling up of a certain solution requires policy support, hence the need for policy advocacy.



3.2. CMDRR Experiences in Western Rajasthan

"Strengthening community capacity on Disaster Risk Reduction in Gujarat and Rajasthan" was a three-year project initiated by UNNATI to address the problems of traditionally marginalized communities, essentially Dalits, through field practices and knowledge building, using a CMDRR approach. It was assumed that if the pilots succeed, then other stakeholders can draw learnings from them. The project thus endeavoured to demonstrate five innovative practices in 23 villages of Jodhpur and Barmer districts of Western Rajasthan.



The project had two specific objectives. First objective was to build a knowledge base on DRR from field practices to be used by emergency response practitioners. Second one was to pilot and demonstrate five innovative practices, for community based DRR. These practices included:

i. Development of Horti-pasture plots for fodder security at five locations in the area.

ii. Improving water access for Dalit communities during the drought period through community based water distribution mechanisms covering 1000 families.

iii. Developing a trained pool of 100 artisans on appropriate and disaster safe housing technology.

iv. Developing an understanding of government health services and monitoring systems.

v. Disaster risk transfer through insurance.

This three-year project aimed to cover around 10,000 households through demonstration; it was planned that of the target population, 50% would be women and 90% of primary stakeholders would be Dalits.

The CMDRR programme was designed as a holistic intervention for improving access to all the categories of well-being assets for reducing drought risk, especially by marginalized communities in Western Rajasthan.

Key experiences of the intervention have been structured around the five assets of well-being as under :

Contribution to Natural Assets

Dalits in Rajasthan traditionally have limited access to natural resources such as land and water. This not only affects their own survival in the form of very little availability of subsistence farm produce and water for various domestic uses but also fodder for the small ruminants.

The project identified horti-pasture plots for fodder security as one of the primary interventions piloted at five locations. Households with half acre plots were selected and an initial orientation and capacity building programme was organised with the Dalit Resource Centres (DRCs) for block level community leaders on DRR and implementation of pastureland component. A DRC is a block/cluster level platform for mobilizing Dalits and facilitating community action against issues related to social justice and social accountability.

UNNATI and DRC provided rigorous support on technical aspects, irrigation (through water tanks), and monitoring, considering the drought

like conditions in the field areas, along with capacity building inputs for beneficiary groups.

For each location, detailed plan for the intervention was developed with communities and DRCs, delineating roles and responsibilities of all actors, including mechanisms for purchase of materials, and a tentative budget was drawn up indicating the contribution committed by the project and expected of the community.

In total, 65 plots were promoted in Seven villages across five blocks in Rajasthan. Farmers have also grown cereals and vegetables in the horti-pasture plots. In one village it was ensured that all the plots were in the name of women.

The intervention was so well accepted by local people that it is reported to have contributed to the development of an additional component under MGNREGA.

The strategy of allowing people to formulate their own micro-plans, reiterated the basic belief of the CMDRR approach that people-led planning is more sustainable and better accepted within the community.

Resurgence of Tankas has proved a blessing for the vulnerables in Western Rajasthan

Tanka or watershed, a traditional method for rainwater storage, which in some areas is called kund, is receiving renewed attention ... All across the Thar, in the villages and towns of Bikaner, Churu, Jaisalmer, Barmer, Pali districts, thousands of such structures can still be seen.

The changing perception or acceptance of the Tanka as a structure to be privately owned is perhaps because of the water shortage in the desert accompanied by the demand by a growing population. The trend of owning personal tankas has gradually grown over the last 15-20 years in western Rajasthan. Voluntary organisations working in these areas have responded to the present and projected water crises engulfing the country and the world at large, and are ploughing resources into Tanka construction for the benefit of the communities.

The cost of construction of a Tanka having a storage capacity of 30-40 thousand litres could range between Rs 30,000 to Rs 40,000. It has lifted the burden on women to fetch water for their families. It has freed children, particularly girls, from the chore of fetching water, allowed them time for their studies instead. For economically and socially weaker sections in society, it has been a blessing.

The initiative has gone beyond the voluntary sector and caught the attention of the authorities and is now being replicated in existing water conservation schemes of the Government at the village level. In what is a giant stride in the direction is the priority to this task under MGNREGA. For people in rural areas of Western Rajasthan owning a cemented house may not be a top priority but constructing a Tanka to store 30,000 to 40,000 litres of precious rain water certainly is.

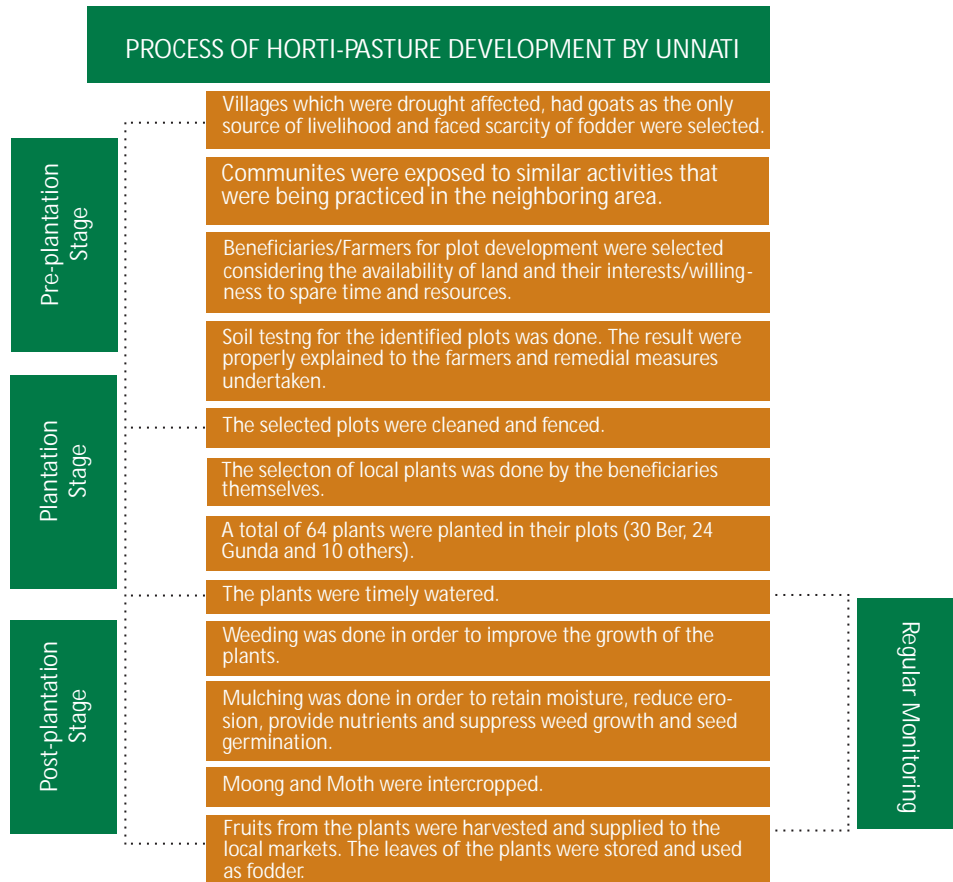
- Dilip Bidawat, 2010

The intervention was able to introduce species which were locally growing and also well accepted by the local community. The acceptance of such an intervention was thus high. Species such as Ber, Gunda, local fruit

varieties, pulses like Moong, and Moth as well as Sesamum were selected by the farmers. The leaves of such species have been used as fodder and thus created a fall back mechanism for fodder requirement during water-scarce or drought period. The protection has also led to the regeneration of local grasses such as Sewan, which is good fodder and were slowly disappearing from the local ecology. Based on the success of the initial model, plans have been prepared in one village to be submitted to Zilla Panchayat and Agricultural Department. These plans have already been ratified by the Gram Panchayat.

The intervention was able to strengthen local capacities on horti-pastural practices. Participating families have developed skills on grafting and some of them have also started extending voluntary guidance and knowledge support to local agencies including government.

The benefits accrued to the participating marginal farmers were immense and at multiple levels. The plots have provided a fall-back mechanism for fodder security as well as making available horticultural products.



Horti-pasture plots were developed as a strategic and multi-pronged solution to the varied dimensions of vulnerability of drought prone communities. For a typical plot of 132 ft by 132 feet, a total of 64 plants were grown interspersed at 15 feet to allow sufficient space for growth and sun-light. Extra space was used for regular agriculture: cereals, vegetables and some grass. The level of benefit can be understood from the remark of one of the farmers, Jetharam as he reports that the gains from 1 bigha (approx, 14400 sq. feet) of horti-pasture plot are comparable to the gains from 10 bighas of regular crop.

Monitoring is considered to be the most critical part of horti-pasture cultivation right until the plant has finally matured. With help from CAZRI, local NGOs and UNNATI, regular monitoring of each plant in each plot was recorded. In place

of damaged plants, new ones were planted again. Infected plants were identified and causes addressed. Date of irrigation, treatments, soil testing etc. was also recorded in this register. The farmer, if taking help from any scheme, was supposed to mention the details in the register to increase transparency. After four years of intervention, these plots are expected to fetch an annual income of INR. 15000-20000 (from fruits) and fodder for nearly 15 goats even during drought conditions. Also, fruit trees and fodder plantation require negligible input after three years once these plants have matured. It has also been observed that as a result of this initial success, farmers themselves have started experimenting with horti-pasture plantations. The intervention has also contributed to increased green cover, conservation and growth of bio diversity and fifteen types of grass

species, which were on the verge of extinction have been restored. In this manner soil erosion was also addressed; as a result fertile top soil has been conserved.



Plot size: 132' x 132', distance between two plant is 15'

Outputs	YEAR 2008	YEAR 2009 (Drought)	YEAR 2010	Total output for 3 years	Rate/unit	Output (INR)
Fruits	00	00	500kg	500 kg	15	7,500
Fodder	100 kg	200 kg	1000 kg	1300 kg	5	6,500
Crop	50 kg	Negligible	100 kg	150 kg	50	7,500
Crop residue	100 kg		500 kg	600 kg	5	3,000
Total						24,500

This analysis of output is against an input of INR 62,700 for each plot; INR 46,900 were provided by project and INR 15,800 were contributed by participating family.



Contribution to Physical Assets

Physical assets include basic infrastructure for habitat as well as livelihoods, such as roads, shelter, electricity, etc. One of the critical physical assets for drought risk reduction are structures / tanks for water storage, without access to which people are extremely vulnerable and liable to incur huge costs. In response to the sheer drudgery and even exploitation of Dalit communities in relation to access to potable water, the programme undertook specific measures to provide/improve water access during drought.

Key components of this innovation are-

- **Provision of hardware for servicing the water needs of the Dalits** - Access to water by lower caste families in the drought prone context of Western Rajasthan has traditionally been a critical issue, both from a development as well as an emergency perspective.

The project recognized that access to water was an issue not only on account of unavailability of water but more critically due to lack of hardware components for carrying

the water to the homestead and storing it.

Initially, the project had planned to procure five tractor tankers to address limited access to water supply run privately by upper caste families. This was a new activity in the context and the implementing stakeholders (i.e. UNNATI, Partner NGOs and the community) were unfamiliar with the nuances. It was thus decided to undertake a detailed feasibility and cost benefit analysis of the entire operation. It was decided that one pilot be initiated by UNNATI for first hand experience and observation by the partners. Subsequently, three additional tractor tankers were purchased and deployed.

- **Community involvement and NGO custodianship of the assets** - The tractor was purchased by and registered in the name of UNNATI. The tractor and other assets were transferred to the partner NGO on behalf of the target group against an agreement and a business plan. Clear responsibilities of the two parties entering into the agreement, were outlined. All income and expenses were maintained in a Book of Accounts. In each village, a committee was formed comprising of three



women and two men. Responsibilities of this committee included: Water distribution and recovery of dues, resolving conflicts, maintenance of tractor and monitoring the driver. A cluster level committee was also formed; its responsibilities included operational aspects as well as proper functioning and coordination of the tanker at the cluster level.

All of the above practices helped achieve the following:

- **Dalits got access to water**

Dalits normally have limited sources to access water from and many of these sources are managed by the upper caste. In situations of droughts/dry spells, access is further limited as availability of water is reduced. In addition, water prices go up, further limiting access to the poor. The project devised a supply system specifically for Dalits that was within their financial means.

- **Timely access to water leads to further benefits**

Agriculture in Rajasthan is predominantly rain-fed. This requires that seeds are sown in a manner such that the rain showers can be utilized gainfully. Sowing of seeds requires the use of tractors as well as water, often

sourced from a long distance. Tractors and tankers being expensive assets, have traditionally been accessible mainly to the rich and upper caste farmers with large landholdings. Paid services to small and marginal Dalit farmers have not been a priority for tractor / tanker owners.

As a direct consequence of the tractor/tanker being made available exclusively for use by Dalits, small scale farming by these households has become easier, allowing them to make the most of scanty but critical rain showers.

- **Asset creation by a traditional marginalized and highly vulnerable group of people**

The project made available a visibly valuable asset to the Dalit community, Access to such an asset was reported to be a major empowering process also impacting the dynamics between the traditionally powerful and the powerless!





Contribution to Human Assets

The programme set out to train 100 artisans for building appropriate and disaster-safe housing. To start with, technologies included earth block construction and concrete block construction in addition to basic safety features for the seismic performance of buildings. However, as the project progressed, additional technologies were identified and included. During the drought in 2009–10, water storage structures were also built for the extremely poor Dalit families selected by the VDCs.

These efforts led to the following achievements:

- Continuous knowledge development and follow-up with trained manpower

Not only masons, but even artisans involved in woodwork in thatch houses were included in the masons group. Discussion and interaction in the monthly meetings covered not only technical matters on disaster-safe features in building construction but also matters relating to government schemes for insurance and pension.

- Transparency in operations and procurement

A number of 5000 litre water tanks were constructed for storage of water for the drought season. For this purpose, a Purchase committee (PC) was constituted from among the VDC members. The PC collected quotations from the local parties and made purchases of construction material based on comparative analysis. Both the PC and the VDC were involved in monitoring of construction visits to the tank locations. This ensured transparency in the works being carried out with the involvement of the benefitting community.

Contribution to Financial Assets

Financial Assets refer to the stocks of money or other savings in liquid form. Dalits in Rajasthan traditionally do not have access to these financial resources as they earn very low wages, resulting in no one wanting to provide them credit. Goats are the only major financial asset for them.

Disaster Risk Transfer Coverage through Insurance was one of the five different innovative practices in this programme for community based DRR. The intervention envisaged to strengthen Disaster Risk Reduction component of the most vulnerable communities through risk transfer by insurance. The primary focus was on generating awareness about health, life and asset insurance and risk transfer schemes amongst the community which faces high risk of epidemic and other hazards. Initially, the primary focus was on a combo product, but later on it was segregated into separate product for each type of risk. Under this initiative, promotional workshops, exposure visits, yatra, and village level meetings were conducted and resource material distributed in the field areas to generate awareness within the community.

The primary focus of the project was not on the number of people taking insurance but was more on developing the understanding of community on insurance as a tool for DRR. However, within the project period, 1074 families covering 5400 members were linked with health, asset, accident and life insurance. The coverage was for all the members of a family. Besides this, a total of 1050 members were covered under life insurance policies.

During the process of implementation of this innovation, it was realised that given the lack of financial surplus at the household level among the marginalised groups, inclination to spend on insurance is very low. It was also realised that risk –perception itself is very low among the poor, given the history of drought in the area.



It is thus important that financial resilience of families be improved in parallel along with risk-transfer mechanisms.



Bataram of Ramdevpura village in Barmer is a landless farmer. During drought periods, he survives on the meager cash support from the government and borrowings from the local moneylender. Despite the financial difficulty he takes care to feed his goat. When questioned why he continues to feed his goat and not sell it, Bataram responds with conviction, *"Yeh bakri dekh kar hi to udhar milta hai, yeh bhi nahin hogi to mujhe to udhar bhi nahin milta. yeh bakri hi to sukhe ke samay mein mere jeewan ka aadhar hai"* (I get the loan during drought because the money lender can see this goat. This goat is the very base of the survival of my family during drought.)



Contribution to Social Assets

Predominant social assets created within the Dalits in the project areas are Task Forces and Village Development Committees under the Dalit Resource Centres, set up by Unnati and its partners.

Task forces are small groups of eight to fifteen volunteers working on specific components of CMDRR. In all 65 Task forces were formed in 23 villages for Drought management, Health and surveillance and for promoting disaster-safe construction technologies in the villages. These task forces are working under the direct planning and guidance of VDC of their respective villages.

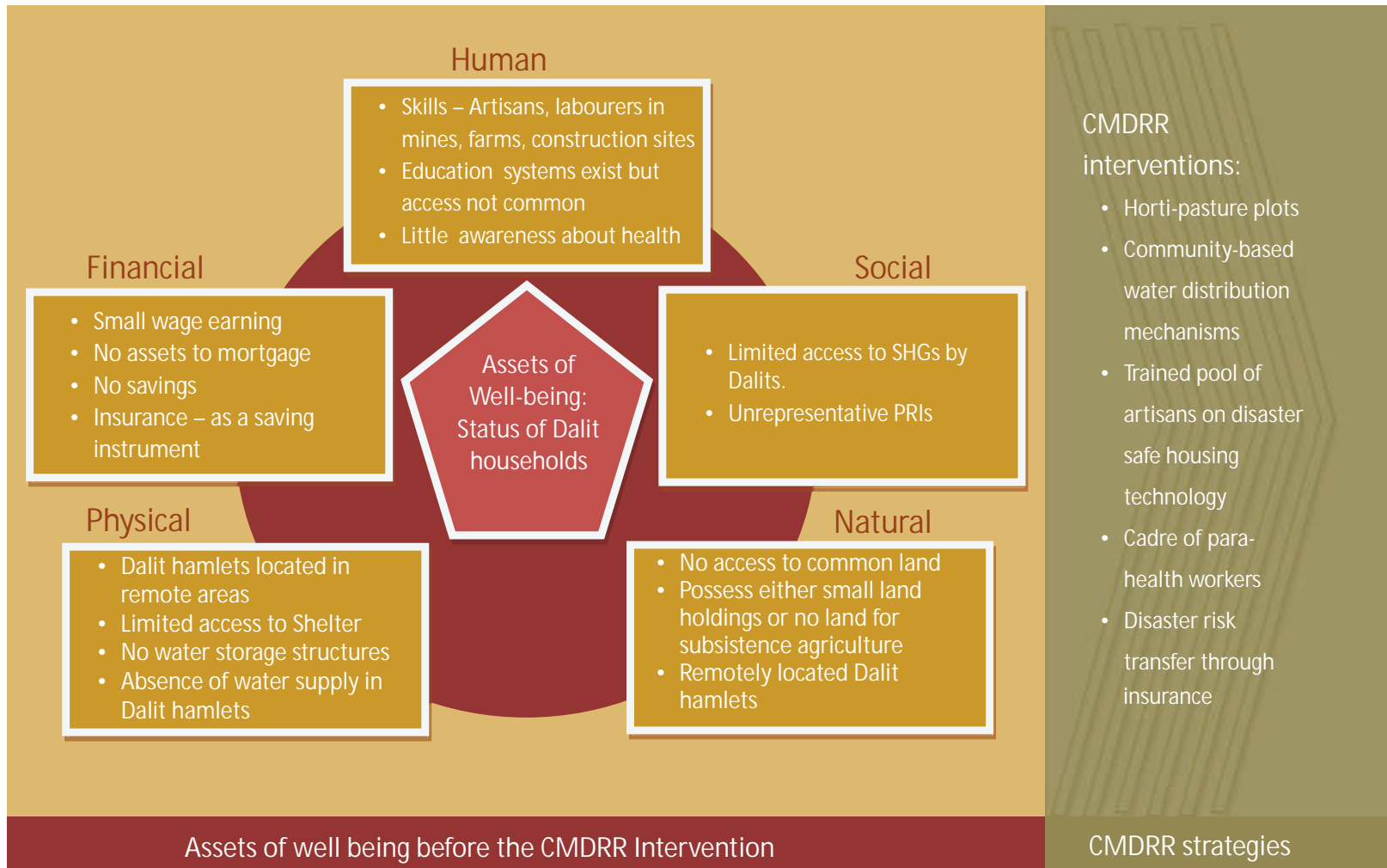
A Village Development Committee (VDC) is a community based organization formed at the level of a revenue village. It has representatives mostly from Dalit communities (men and women both). The VDC is formed as a result of Dalit mobilization activities and is responsible for the overall development of the Dalit communities locally. During the DRR interventions in the 23 villages, VDCs played a lead role in hazard, risk, and vulnerability assessment and through this process, acquired the skills required for planning, implemen-

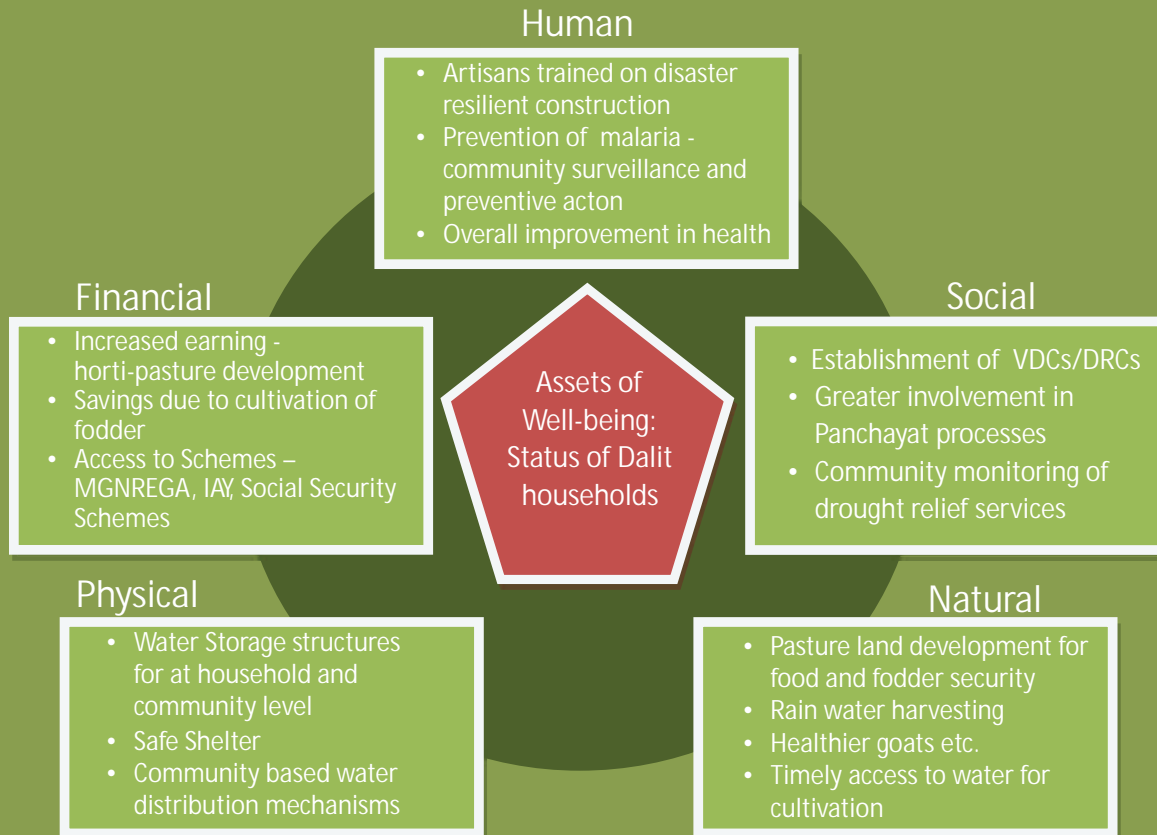
tation and monitoring of all the development and DRR activities at the village level. Task forces and volunteers work in consultation with the VDC in the village.

The task force members have also been provided training for their specific sectoral activities and also providing emergency services to the village as and when required in the disaster situation.

DRCs also conduct membership campaign to engage with a greater number of Dalits. DRCs are supported by the local partner NGOs and Unnati.

The CMDRR programme helped in consolidating these social groups, essentially VDCs and DRCs. These took on the responsibility of monitoring the Drought Relief Services provided by the Government of Rajasthan. Drought Relief Services, focused on employment generation (through MGNREGA), provision of drinking water, fodder and direct food / cash support to the most vulnerable. However, the programme was not inclusive in its nature and often Dalit and women were left out from accessing the services. In this context, a process was initiated to facilitate community based monitoring of





Assets of well being after the CMDRR Intervention

drought relief services and enabling all levels of community to access the relief services. A total of 85 villages from nine blocks in three districts were covered under the initiative.

The initiative was able to collect monthly data on government service's reach, quality and regularity by community members. The data was analysed at village and block levels and accordingly shared at different forums such as government officials meetings and Press Meets. This process was initiated in January 2010 and continued till June 2010. Regular data collection and sharing with authorities helped in the advocacy to enhance quality and frequency of the services in the villages.

The following were the key achievements of the initiative:

- The monitoring (by people) ensured that exclusion and discrimination doesn't happen in the relief and services distribution. 310 families were identified and included in the governments list of most vulnerable. They got a financial support of INR 600/- per month as drought relief due to these efforts.

- It also helped in sensitizing the government department so that Dalits and women were not excluded from any programme. A total of 25 fodder distribution depots were started by the authorities after the initial meeting with the block authorities. Water distribution points in the Dalit hamlets (Dhanis) were started and water provided in the 25 villages.

- Employment works were started at 50 locations under National Rural Employment Guarantee Programme in the 30 villages as a result of sharing of data with district officials.

This exercise, though not still completely managed by the community, has brought issues of Dalits in the mainstream, besides building capacity of these social groups to negotiate with Government functionaries. A noteworthy feature was that the Government officials not only appreciated the process and data generated but effectively used the data and initiated more meaningful interface with communities in other drought affected areas of the state.



Insurance is a safe guard for the rich. A poor landless worker with only one or two goats or sheep is not able to afford insurance cover for his animals; such households are virtually 'invisible' for policy makers. Even the fodder banks opened during drought periods supply fodder that is suitable for larger animals and not small ruminants like goats and sheep.

- Bheemram, Community Facilitator,
Unnati



Moving Forward
Lessons and Imperatives

4. MOVING FORWARD – LESSONS AND IMPERATIVES

"Bhookh se tatkal koi nahin marta poshan ke abhav mein dheere- dheere mar hi jayega" (No-one dies of hunger instantly, lack of nutrition over time can prove to be fatal.) - Prem lata, Jai Bheem Vikas Shikshan Santhan

Last few years of research on natural disasters has unearthed startling facts. According to EM- DAT that provides data for several international publications and newspapers, more than half of all deaths due to natural hazards are associated with drought; floods only rank higher in terms of the number of people affected. Further, as a result of climatic uncertainty, it is predicted that dry spells will increase further across the globe and deserts will expand. These facts per se may not be alarming; when seen in the context of extreme vulnerability conditions of desert communities in India, the picture becomes grim.

Drought itself is a complex phenomenon. The slow onset and silent nature of the event that can often be anticipated on the basis of rainfall pattern, temperature etc. contradicts the notion that droughts are normally perceived to be damaging physical events that exceed the coping ability of the effected community on their own.

Is it time therefore that the common perception of droughts and natural disasters were challenged?

4.1 CMDRR in drought – Key Lessons for the Way Forward

Experiences of Unnati resonate with those of some other agencies in Western Rajasthan. These experiences demonstrate the tremendous possibility of reducing drought risk through community managed interventions.

Workable strategies that can be taken forward from these experiences are summarised below:





a. Community Based Partnerships and Institutions for Water Management

Rajasthan has a rich tradition of community based institutions, mechanisms and norms to conserve and use water in a sustainable manner. However, the management of the traditional rainwater harvesting structures has been neglected or abandoned by the traditional institutions which are governed by the dominant caste groups. The new Panchayati Raj Institutions (PRIs) with their constitutional mandate of inclusive governance have not yet been able to effectively set up viable systems for management of the resources.

There is an urgent need to create and develop community based institutions, preferably led by Dalits and other vulnerable groups that have a higher interest in the conservation of the resources that are linked to their own livelihood and food security. The institutional mechanism needs to be developed in such a manner that it builds partnerships with community groups based on the principle of respect and equality.

Empowerment of Dalits and capacity building of PRIs is necessary in order to develop the resilience of natural resources under conditions of stress, rather than a one-sided concern for increasing productivity through intensified use of resources like water.

Traditional practices and norms related to conservation and use of community water resources proved to be sustainable. If these are to be regenerated in the current context, an additional dimension of equitable access needs to be included. This requires building consensual agreement through sustained dialogue, capacity building of PRIs to effectively participate and facilitate the process, invoking the spirit of social justice among the dominant groups and above all mobilisation and organisation of dalits.

Common Property Resources represent one of the most important spaces in local community context; a renegotiated institutional space for decision-making can not only contribute to equitable use of local resources but also influence the environment of decision-making and governance for creating a legitimate space for Dalits to move towards risk resilience.

b. Participatory and Inclusive Water Resource Management by PRIs.

Decentralised governance has great potential to promote participatory planning and community based project management. National programmes like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Backward Region Grant Fund (BRGF) are some of the instruments which the panchayats can make use of in favour of Dalits to promote social justice and equity.

In the absence of capacity building of the PRIs, they continue to follow the conventional developmental approach. Most of the PRIs are also not familiar with social accountability and transparency framework of governance. There is a need to enable PRIs for participatory planning and implementation skill; the Dalit community needs to be empowered to demand social accountability. Riding on this process of enablement and empowerment, better public provisioning of water and other services as well as community based monitoring of such initiatives would be possible.

c. Need for Increased Ownership over Water Infrastructure and Resources by Dalit Women and other Vulnerable Households

In the absence of management and maintenance regimes, traditional water bodies are increasingly becoming defunct. Any initiative to address issues related to common property resources needs to be developed based on community managed mechanisms, ensuring access and control of vulnerable social groups and creating systems for improvement of water structures with technical know-how and traditional wisdom. Along with community water resources, to ensure water security, vulnerable families require individual level rain water harvesting structures as they are distantly located from the common water sources. Access to multiple sources of water, with individual ownership at the household level, will increase their livelihood resilience and coping capacity at the time of drought





4.2 The way forward

Drought does not affect a group of people externally, it tests the limits of their coping capacity- physically, financial and socially. While national and state governments (responsible for response) have setup standard operating procedures for relief, there has been little institutional effort at addressing root causes of vulnerability.

The elements for a drought risk reduction framework for drought through institutional efforts have been summarized by UNISDR in five main areas of endeavour, based on the Hyogo Framework for Action, regional strategies, and various thematic risk reduction documents:

a. Policy and governance as an essential element for drought risk management

Leaders and administration at the national, state and district levels need to recognise that the effects of drought, particularly on the poor, can be as devastating and probably more deep rooted and longer term as compared with sudden disasters that often also attract attention and external financial support. Considering drought as a condition of "scarcity" equates the phenomenon to famine which is a socially and politically created crisis. Drought on the other hand is a natural phenomenon, which may be worsened due to human activity just like floods and landslides that may be worsened or even triggered by human activity. The question therefore remains that why are droughts not considered at par with other natural disasters?

Policy makers and leaders need to be made aware of the danger that drought poses, the hardship it creates for people whose livelihoods are at risk.

Building drought resilience needs to be a part of the long-term development policies related to agriculture, water, food security and hazard risk management in accordance with community-based practices that reduce vulnerability. All this requires sustainable policies and governance, which may necessitate capacity development to foster meaningful participation of vulnerable groups in policy and planning processes.

b. Drought risk identification, impact assessment, and early warning, which includes hazard monitoring and analysis, vulnerability and capability analysis, assessment of possible impacts, and development of early warning and communication systems.

Drought is a recurrent phenomenon; it affects the livelihoods of Dalits living in rural areas. Moreover, social stratification along the lines of caste, ethnicity, and religion has resulted in deep entrenchment of social, economic, political and geographical inequities in India. In a situation of scarcity of resources that sometimes even threatens survival, such traditionally marginalized groups tend to be the worst sufferers. For instance, in drought years, food insecurity increases due to severe decline in food production and availability, both from individual farms and in the market accompanied with increased uncertainty of income related to lack of employment opportunities and livelihood. Thus, there is a need to employ a broad based and multi-dimensional framework for assessment of vulnerability that includes a range of diverse factors/ indicators, which expose people to risk.

While appropriate drought-coping mechanisms should be strengthened, preparedness should include warning and implementation of mitigation measures at the community level. State Disaster Plans should link disaster preparedness to sustainable development through capacity building. Committees for early warning should be established at State, District and village levels for data collection and information dissemination. Girdawari needs to be made more timely and preferably conducted as soon as the delay in monsoons is established. It should necessarily be made participatory, with mandatory inclusion of the most vulnerable groups. In addition, there should non-agri based indicators of drought that can capture the need for assistance by the poor who are mostly landless.

Relief measures should be timed to not only address the immediate deficiencies of food, water and fodder but also continue in some form, while people are trying to initiate action for recovery. For example, support for water supply should continue to assist people as they sow the seeds for the next season after a crop failure.





In the absence of such support in a continued dry spell, even the next crop cycle may be affected. Hence, there is a need to time drought assistance properly based on the real needs of the people.

Relief plans should be initiated at the community level; these should contain measures for addressing needs for income, water and food and spell out expected roles for different stakeholders. In this way, practical problems such as inaccess to remotely located dalit dhans can be addressed through solutions that people may propose themselves. Employment generation schemes should provide cash or food for work through various risk reduction projects.



c. **Drought awareness and knowledge management** to create a culture of drought risk reduction and resilience building.

More detailed research needs to be conducted to quantify natural groundwater recharge processes in different parts of the state and to define the safe limits for groundwater use. The issue of water management and drought proofing should be tackled by adopting suitable policies with the involvement of government organizations, NGOs and the people.

Also, data on hydrological processes in Rajasthan at field, basin, region and state level are reported to be sparse and unconnected. Therefore, there is a need for extensive data collection through a process that links scientific analysis with indigenous knowledge. Efforts should be made to develop suitable hydrological and water resource models for the prediction and utilization of water resources.

d. **Reducing underlying factors of drought risk** such as changing social, economic and environmental conditions, land use, weather, water, climate variability and climate change.

Issues related to vulnerability in Rajasthan are highly complex, primarily due to social stratification along the lines of caste. Lower caste people are still not able to freely access opportunities of development even as basic as education. Further caste and gender based discrimination (even within lower caste families) make survival rather precarious even during non-emergency situations.

These conditions are further exacerbated during drought when supplies of essential commodities such as food, water and fodder are in short supply. Experience has indicated that only through organized action, it will be possible for the Dalits to access their rightful entitlements as citizens of the country.

Moreover, specific activities need to be built into development plans so that the risk of the traditionally marginalised groups can be adequately addressed. Social causes of vulnerability that can be addressed through institutional intervention must be included in peace time processes to address the needs of those most at risk.

e. Strengthening preparedness for drought to move from policies to practices in order to reduce the potential negative effects of drought

It is important to remember that though many communities have been living with periodic or cyclical drought their entire lives, even then examples of communities coming together to jointly mitigate drought impacts are few and far between.

Engaging communities and development agencies in assessment and analysis for preparedness of drought and food insecurity play a much more significant role than they do in sudden-onset disasters. Strategies for mitigation of drought and food security are at an advanced stage of evolution and are do-able in comparison to strategies for mitigation of many other types of disaster. These involve simple yet well-designed interventions such as integrating livelihood issues with disaster management, adopting participatory and community-level approaches, and building upon indigenous knowledge, coping strategies and appropriate technologies. There is a need to optimally use traditional and indigenous knowledge for drought mitigation through coordinated community action.

All of these elements need strong political commitment, community participation, and consideration of local realities and indigenous knowledge. The international and regional communities also play an important role in coordinating activities, transferring knowledge, supporting project implementation, and facilitating effective and affordable practices.

"Sarkar kharab nahin hai, neeti bhi kharab nahin hai, sarkar mein baithe logon ko nazariya badalne ki zaroorat hai"

"The government is not bad, policies are not bad; only the people sitting in government (offices) need to change their outlook."

- Pemparam, Prayas

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UNNATI

Organisation for Development Education

UNNATI - Organisation for Development Education is a voluntary non-profit organisation registered under the Societies Registration Act (1860) in 1990. The organisation aims to promote social inclusion and democratic governance so that the vulnerable sections of society are empowered to effectively and decisively participate in mainstream development and decision making processes.

UNNATI is an issue based, strategic educational support organisation working in Western India with people's collectives, NGOs, elected representatives in local governance and the government. Collaborative research, public education, advocacy, direct field level mobilisation and implementation with multiple stakeholders are the key instruments of our work. The interventions span from the grassroot level to policy level environment in ensuring basic rights of citizens. In this, inspiration is drawn from the struggles of the vulnerable and strength from our partners.

Presently, all the activities are organised around the following programme centres:

- Social Inclusion and Empowerment
- Civic Leadership, Governance and Social Accountability
- Social Determinants of Disaster Risk Reduction

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Support



Implementation



Organisation for Development Education

Documentation

