

Impact of Climate Change on Rural Livelihood: A Case Study of Central Rajasthan

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Abstract: Climate change is already bringing tremendous influence on people's lives, particularly the underprivileged. It's already visible in a variety of ways. In recent decades, Asia and the Pacific have seen consistent warming trends as well as more frequent and powerful extreme weather events such as droughts, cyclones, floods, and hailstorms. This study was done in Ajmer District of Rajasthan, to find out the climate variation in the last 10 years. The study describes the effects due to climate change on the livelihoods of the people, so a descriptive research design was used for the study to find out the impact of climate change on rural livelihood in central Rajasthan. The study is based on a large representative of sample, quantitative data was collected to gain an idea of the impact on the livelihoods due to climate change at the household level. It shows the negative impact of climate change on rural livelihood which forced the people to change their livelihood directly or indirectly.

It was found that climate change had an impact on people's lives and people do understand the variation in climate change in terms of changes in the weather, unseasonal rain, and drought.

Keywords: Climate change; Rural livelihood; Agriculture production; Livestock.

Introduction

Every year, some natural disasters affect India, making it one of the world's most susceptible and hazardous countries. Over the centuries people of India have learned to cope with various natural and man-made disasters. Overpopulation, poverty, and differences in access to housing, public services, and infrastructure have all contributed to increased vulnerability in recent decades, particularly in India's urban areas. Recent hazards are expected to become more frequent and severe as a result of climate change, as well as the likelihood of severe events, as well as to promote the creation of new hazards and vulnerabilities with varying geographic and socioeconomic implications. This is projected to exacerbate the resilience of poor,

vulnerable populations, which account for one-quarter to one-half of the population in most Indian cities. This is expected to aggravate the resilience of poor and vulnerable people, which make up one-quarter to one-half of the population in most Indian cities. Climate change is poised to become a major strategic economic and political problem as it begins to undermine India's robust economic development rates and endangers the lives and livelihoods of millions of people. Climate change in India may be understood in three different transitions like in (i) demography based on India's population which is going to one of the most populous countries, (ii) the continuous rural to urban migration due to lack of livelihood opportunities in a rural setting, which will add millions of people to the country's urban settlements in coming years and (iii) a continuous

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environmental transformation related to sanitation, water and all types pollution like air, water, etc. To adapt to the climate-related problem, several sub-regionally nuanced methods will be required, relying on extensive local expertise while coping with uncertainty and systems far from stability. The impact of climate change is a worldwide problem. However its influence will change, depending on the area and temperature zone, with the continuous rise in the sea level, it is expected that small countries would be impacted the worst. Countries like India, which has a significant agricultural sector, a huge population, rich biodiversity, a long coastline, and high poverty levels, are anticipated to be among the most vulnerable to climate change. According to the UN Framework Convention on Climate Change (UNFCCC, 2007) climatic change caused by human activities, affects the global atmosphere in addition to the natural climatic changes found over equivalent periods (IPCC, 2007). Climate change affects livestock both directly and indirectly. The effect of climate change is found to be real and is affecting the livestock population in many ways. The increase and decrease in temperature, humidity, rainfall, and other climatic variables have direct and indirect effects on animal performance, including growth, milk production, wool production, and reproduction (Houghton et al., 2001).

The negative or positive consequences of an event are known as impacts and in the case of climate change, increased Greenhouse gases (GHGs) concentrations in the atmosphere destabilise the climate system, causing changes in precipitation patterns and the frequency and severity of extreme events (typhoons, hurricanes, flooding, and so on), as well as changes in the rhythm and intensity of phenomena like El Nino (Robledo and Forner, 2005). The warming of the climate system is believed to be unequivocal, as it is now evident from observations of increases in global average air and ocean temperatures, in a large amount of melting of snow and ice, and rising global mean sea level (Nicholson et al., 2000).

Various studies have already observed the impact of climate change and it is very much essential that livelihood holds a central place to human survival and comprises opportunities and strategies for sustainable living. The pursuit of livelihood strategies, however, depends on the tangible and intangible assets at the disposition of people either as possessions (Scoones, 1998). Climate change has been studied for its effects on agricultural seasonal changes and potential livelihood implications, such as changes in the onset of rain days

and the variability of dry spells (Jones and Thornton, 2003).

Impact of Climate Change on Indian Agriculture

India is one of the world's largest countries, with various agro-climatic zones, diverse seasons, crops and farming systems. The agriculture sector is India's primary source of income for the majority of its citizens. It is also most vulnerable due to climate change, its variability and continuous weather change; it has an impact on Indian agriculture in various direct and indirect ways besides affecting the lives and livelihood of millions of Indians involved in the agriculture sector. Along with agriculture other related sectors such as livestock (cattle rearing) and fisheries, provide almost a quarter of India's GDP and employment to almost two-thirds of the country's population. The Indian climate is dominated by the South-West monsoon, which delivers the majority of the region's precipitation and it is vital for agricultural irrigation. Agricultural production is affected by two types of climate-induced impacts: direct impacts from variations in temperature, precipitation, and carbon dioxide concentrations, and indirect impacts from changes in soil moisture and pest and disease distribution and frequency. Climate change will affect agriculture in India, causing changes in soil, pests, and weeds. Changes in elements such as precipitation, run-off, and evaporation, for example, will impact the quantity of moisture in the soil and all these happened because of global warming as per some scientists. Climate change will add to the stress on India's natural and social systems, which are already under enormous threat as a result of growing urbanisation, industrialisation, and economic development. India is considered particularly vulnerable to the effects of climate change due to its large and expanding population, a 7500 km long densely populated and low-lying coastline, and an economy that is heavily reliant on natural resources.

Impact of Climate Change on Rajasthan Agriculture

Rajasthan is India's largest state, covering 342,239 km² and home to 56.47 million people, 76.6% of whom live in rural areas and work in the agriculture sector (Census, 2001). The state has a different agro-climatic zone. Rajasthan's climate indicates that the study region's yearly rainfall ranges from 500-600 mm³. The temperature during the summer and winter is not as harsh as they are in the desert west, yet summer temperatures can exceed 45 degrees Celsius.

In the winter, temperatures can drop to as low as 8°C. The depth of the groundwater ranges between 15 and 25 metres, although annual variations are significant, especially when the southwest monsoon fails and the annual replenishment rates are low. Because surface water supplies are limited, groundwater resources are being used at a rapid rate. Drought is a common phenomenon in the area, which occurs in predictable cycles and continues to cause havoc on production. For the farmers of Rajasthan, climate change, the greatest global issue, is now a reality. It puts more burdens mostly on resources, and if appropriate measures are not implemented, migration to cities will soon reach greater heights. “Rajasthan has a livestock population of around 49.1 million people and this state is one of the top three states in terms of livestock population. Though animal husbandry contributes around 9.16% to the state’s GDP, it is also one of the country’s largest methane emitters, accounting for about 9.1% of total methane emissions” (Rajasthan State Action Plan on Climate Change, 2014). Rajasthan is prone to drought due to low rainfall and unpredictable monsoons, which have a direct impact on agriculture. The Indian Institute of Tropical Meteorology recently published research that looked at rainfall patterns across the country and found a downward trend in rainfall in Eastern Rajasthan.

Background

Climate change poses a significant threat to agriculture, food security, and rural livelihoods for billions of people across the world. Agriculture is the most vulnerable sector due to climate change because of its dependency on weather and the climate and the fact is that farmers are frequently poorer than city inhabitants. Agriculture provides a living for more than 60% of people in the Asia-Pacific region, either directly or indirectly. Agriculture is both a contributor and a solution to the problem. Sustainable agriculture is essential for food security and livelihoods. Human activities on production, exchange, and consumption in agriculture, as well as rural development, have a key influence in all three components of food security, and rural development has an impact on climate change. It’s important to figure out why agriculture is a part of the problem when it comes to the negative effects of climate change. The increase in greenhouse gases (GHGs) emissions is attributed to intensification owing to the green revolution, diversification, and an increase in rural non-farm activities. The short-term losses in terms of livelihoods and earnings caused by climate change’s

impact on agriculture are very well. However, the magnitude of the possible negative influence on human development is poorly known and neglected. Extreme climatic events such as droughts, floods, and cyclones can have catastrophic and obvious repercussions for human progress in the near term. Climate change’s long-term effects are less evident and not that catastrophic. Climate shocks have a wide range of consequences on people’s livelihoods. It damages the crops, reduces income opportunities, raises food costs, and destroys property, leaving people with little possibilities.

Significance of the Study

Climate change poses one of the greatest challenges to agriculture, food security, and rural livelihoods for billions of people throughout the world, particularly the poor in rural India. It has made agriculture one of the most vulnerable sectors. Agriculture is both a part of the issue and a part of the solution, and sustainable agriculture is essential for food security and livelihood. Climate change influences people’s lives, particularly the poor, which are already seen in various ways, the consistent warming trends and more frequent and extreme natural disasters such as cyclones, floods, hailstorms, and droughts, have been observed across the state of Rajasthan. The poor’s lives are marked by the dangers and vulnerabilities that come with an unpredictable climate. It will exacerbate these risks and vulnerabilities, putting more strain on overburdened coping mechanisms and amplifying the effects based on gender and other factors. The short-term losses in terms of livelihoods and earnings caused by climate change’s impact on agriculture are well-known. However, the extent of the possible negative influence on human development remains unimportant. Climatic conditions like droughts, floods, and cyclones can have severe and highly apparent repercussions for human progress in the near term. Long-term consequences are less obvious, but they are no less destructive. Climate shocks have a significant impact on people’s health and their livelihoods. The phenomenon causes damage to their crops, decrease their work opportunities, increase food prices, and destroy property, leaving people with few options. Agriculture provides a living for some rural populations; others rely on the rural labour market and self-employment in the rural non-agriculture economy; and others still migrate to towns, cities, and other nations. Agriculture is the primary source of income in this state. In recent times seasonal migration has increased in the rural areas which is due to less agricultural productivity. One of the other signs is that

the rural people are involved more in “MGNREGA” which shows their livelihood insecurity due to climate change and less agriculture productivity.

Literature Review

Climate change, such as the frequency of droughts, has a substantial influence on the production of monsoon crops. Small and medium rain-fed farmers were extremely sensitive to climate change, and small and medium rain-fed farmers used climate change coping mechanisms to a greater extent than bigger farms; many farmers have already responded to the changes by adopting technology coping mechanisms on one side and transferring into other professions, on the other hand, this study confirms there are significant changes in the livelihood of people who were dependent on agriculture (AshaLatha et al., 2012).

In a study done by Poonia and Rao (2013), they talk about many species in the Thar region which was well adapted due to the usual climatic characteristics of the Indian desert environment; nevertheless, the Thar region has varied climatic situations like drought, flood, heat and cold waves affecting all the species living there, the study says that hot arid environment in the Thar region demands excess water need which varies from 2-12mm/day. This study reports that the Thar desert region is more vulnerable to changes in global climate than the other climatic regions, development adaptation methods for traditional knowledge and practices connected to biodiversity protection are needed and sustainable use along with modern scientific interventions may lead to relief from adverse effect of anticipated climate change on biodiversity in Thar desert region (Poonia and Rao, 2013).

In the report of Climate Change study (2009), one specific area in Odisha that is under the Western Odisha Rural Livelihood Project (WORLP), these communities have coped with and adapted to increased climate-induced vulnerability, the study identified the ways people in the project area are adapting to climate change and proposed a way to make livelihoods more flexible. This particular area lies in the part of India where the mean temperature is rising and its vulnerability places it among the highest risk area in the country. From the year 1901-2009 it was found that the state of Odisha and its WORLP area within an area which is warming few climate risks have been identified such as, infrequent and high rainfall which leaves people with two peak periods of food stress, flash flood during the rainy season etc. (Sharma et al., 2013).

A report by Gore et al. (2011) explains that desertification has been recognised as a major environmental problem affecting the livelihoods of people in the affected regions in many countries in the world. Even the UN commission for Sustainable Development report of 1998 observed that desertification has evolved into one of the most significant environmental, socioeconomic, and political issues on a local, national, and global scale. Desertification and drought have an impact on long-term development because they are linked to major socioeconomic issues such as poverty, poor health and nutrition, and lack of food security, and all together lead to migration, social strife, and unrest. Human action on cultivation, exchange, and consumption relating to agriculture and rural development would have an impact on climate change, the main reason is to discover why agriculture is a part of the problem for negative impact on climate change, it improves due to green revolution, diversification, and increase in rural non-farming activities are responsible for the increase in greenhouse gases (MahendraDev, 2011).

Climate change is already affecting people's lives, particularly the poor; the regular warming trend and more frequently the change in weather lead to droughts, cyclones, floods, and hailstorms across the country, increasing the risk of vulnerabilities and putting pressure on overstressed coping strategies. Panda (2009) in his article says that “a country's vulnerability due to climate change is decided by the presence of appropriate mitigation and adaption option, most of the developing countries are widely recognised rather than the developed countries it is because the developing countries ecological environments are fragile, it easily affects the high risk in the economic system due to low-income levels most of the citizens constrains their ability to cope”.

According to Kaushik and Sharma (2014), “Rajasthan is the state which covers 10% of land area and total 5% of the human population of India, of which 75% of the population is dependent on agriculture or animal husbandry for livelihood. The continuous increase in the temperature may lead to physiological stresses on livestock which may cause the reduction of milk productivity, wool, meat and drought ability and affects the reproduction success, due to an increase in the heat the demand for food and water increases, if not fulfilled these may lead to the chances of increase in the diseases and these come under vulnerable livestock population which suffers from nutritional and water stress, to cope with such situation there must be a resilience strategy

for the livestock and that relies on maintaining animal health and immunity by providing quality food, sufficient water and fodder and maintaining the breeds suitable for the local conditions". The environmental issues have their contribution to resource stresses, migration, and conflict within India, due to lack of developmental attention and various processes of globalisation, the vulnerability of rural agriculture to global competition and displacement of the traditional lifestyle has kept rural areas in a tight bind. In rural areas, the economic opportunities are less due to lack of development and infrastructure opportunity forces people to migrate to the urban areas in search of employment and this is keeping rural areas stagnant and underdeveloped while their residents emigrate so alternately the urban areas economic opportunities and investment exists compelling people to migrate to the urban areas. The major sources of greenhouse gas emission in India are from the urban areas due to transportation i.e. around 96% of emissions which have a huge impact on the climate (Padukone, 2010). The major shift in climate change discourses in India has been from one aspect that externalised the climate change issue and remedies to a co-benefit approach in which policies attempt to connect climate change with domestic goals such as poverty eradication and economic growth (Thaker and Leiserowitz, 2014).

Human movement patterns and behaviour can be influenced by changes in the environment. The possible connections and implications of climate change on human mobility have been recently mentioned in the literature during the last few decades. The common literature on climate change and migration focus on the concepts of refugees and displaced persons, migrants and these words are often employed with limited agreement on definitions and poor conceptual development. Various reports estimate that Climate change will be a major cause of urban mobility and relocation, with estimates ranging from 200 million to 1 billion by the end of the 21st century. More studies are required to contextualise climate change and migration to have a better understanding of why specific variables contribute to distinct migration patterns in different contexts. The main quantitative gap in climate change and migration research is generating reliable verifiable forms of quantitative estimates for the effects of climate change on migration. Climate change and migration are multi-layered, dynamic processes that are far from being understood, thus political decisions must be taken without comprehensive information, and this is often the case (Himani et al., 2015).

The "Fifth Assessment Report of IPCC suggests that climate change is real and impact is being felt across countries of the world, climate change mitigation is a global challenge and its impact will be varied across regions and temperature zones, the small island will be hit the hardest with sea-level rise, especially bigger countries like India having its largest agricultural sector, vast population, rich bio-diversity, long coastline, and high poverty level is expected to be one of the most vulnerable countries." Their study found that agriculture production is sensitive to temperature increased carbon dioxide concentration as well as change in precipitation. All these factors imply that agriculture production will respond non-linearly to future climate change (Chaturvedy, 2015).

Research Methodology

Aim of the Study

To study, the impact of climate change on rural livelihood in central Rajasthan.

Objectives

1. To find out the climate variation in the Ajmer District of Rajasthan in the last ten years.
2. To examine the impact of climate change on the agriculture/crop pattern in central Rajasthan.
3. To ascertain the impact of climate change on the livelihood pattern of people.
4. To understand the transition in the rural livelihood in the last decade due to climate change.
5. To know the effect of climate change on the efficiency in work and hardship faced by people at the worksite.

Research Design and Methods

The study has a descriptive, quantitative research design, and contains elements that characterise the impact of climate change. It is a cross-sectional study in which data were collected using survey questionnaires, which were answered by self-administered close-ended questions. The study was Pre-tested with 10 percent of the actual sample. All the respondents were informed both orally and in writing about the project study in advance to participate, two weeks prior to the implementation of the project. Participating in the training was mandatory, but to deliver the questionnaires was voluntary.

Sample: The population of sixty (60) numbers of respondents was randomly chosen to be the project research study.

Sampling Method: As a sample selection method, non-probability sampling was used to choose respondents, purposive sampling was used to identify the respondents as per the availability.

Questionnaires: The questionnaire was developed by the researcher and was translated into Hindi, in the year 2017. The instruments were translated from English to Hindi and then translated back into English. Survey Forms were completed immediately by the researcher at their household. In Survey Forms the respondents reported to what degree they agreed/disagreed with the statements, according to a five-point Likert scale. The value of one represents a high degree of disagreement with the statement and five represents a high degree of agreement. Demographic data collected included the respondent's age, whether they had experience with this. Survey questionnaires were carried out to explore the complexities of households whose livelihood was affected due to climate change. A questionnaire is a pre-coded question to produce quick, cheap and easy quantitative data which is high in reliability. A checklist of observations was prepared by the researcher to analyse the impact of climate change on rural livelihood.

Methods of Data Collection: Immediately after the meeting, the respondents were individually asked to reply and the questionnaire was filled by the researcher at the designated place. Primary data was used for the study. A survey questionnaire was prepared to test and use for fulfilling the study objectives. It was adopted and the researcher directly collected the data from the respondents of Bandarsinri, Kheda, Noharia, Mundoti and Pedibhata village. The primary data was collected from face-to-face interviews with the rural people. The researcher collected data from one of the family members of the rural people. A Survey questionnaire was used with all the respondents. Further, participant and non-participant observation methods were used to triangulate the facts.

Universe of the Study: This study was conducted in villages of Patan, Nalu and Bandarsindri, Gram Panchayats of Ajmer District in Rajasthan because of the interest and convenience of the researcher, these Panchayats, of Ajmer district of Rajasthan is taken as study locale because these gram Panchayats are affected by the climate. So, it is an appropriate universe for the study. Five villages of these Panchayats were selected Bandarsindri, Kheda, Mundoti, Nohariya and Pedibhata.

Data Analysis: The survey questionnaires were coded with numbers that represented the individual

respondents, with the answers registered into SPSS, version 22. Frequency tables were presented to compare statements between defined groups according to the research questions. Lastly, a correlation test was done to assess possible relationships between statements in Forms.

Major Findings

The researcher developed the tool and collected data from the study area, where climate change has negatively affected livelihood opportunities of the people and forced them to shift their occupation from agriculture to some other informal sector.

- In the study area, it was found that there are three major sources of livelihood in the study area because 56.7% of the population is dependent on agriculture, 21.7% of the population works as daily wage labour, 16.7% of the population are involved in cattle rearing whereas 5% of the population is involved in another source of livelihood. These groups were divided into according to their earned wages where it was found that majority of the population in the rural area of central Rajasthan comes under the income group of rupees 5000-10000, whereas only 5% of the population comes in the income group of above rupees 15000.
- People's understanding of the variation in climate change in terms of changes in the weather, unseasonal rain, and drought is as follows: 43.3% of the population have faced unseasonal rain, 41.7% of the population have faced drought, 15% of the population observed variation in the continuous changes in the weather, whereas it was realised by 46% of the population 6 years ago. About 68.3% of the population witnessed unequal rain distribution, and the main factor of all these variations is due to deforestation where the majority of the population found it as one of the main factors including emission of greenhouse gases, pollution, etc. It was also found that there is about 25% of the population who still doesn't know about responsible factors of climate change, though they have a good source of information in their houses almost majority of the population have Radio and Television in their houses, they got aware by this medium about climate change, in which 40% of the population got aware by Television available in their houses and 35% of them got awareness through Radio.

- During the study, it was found that majority of the population i.e. (53.3% of the population) said climate change can be tackled, whereas 38.3% of them did not have any idea for tackling climate change, rest of them said nothing can be done to tackle climate change now. Though most of the people (41.7% of the population) suggested that through individual responsibility we could tackle climate change, the rest of them fixed responsibility to the Central Government and the Local Government. Majority of population said that climate change could be tackled by plantation, and by rainwater harvesting, while the rest of the population doesn't have any idea how to tackle climate change.
- Among all, a total of 71.7% of the respondents agreed that, yes the pattern of the weather is changing and 28.3% of the respondents said they do not feel any changes in the weather pattern; as per the respondents if the weather pattern is changing as the majority of them witnessed that, then it is clear indication that there is variation in the climate in Central Rajasthan.
- The study also found that climate change has also affected the agriculture sector and especially the crop pattern got affected due to climate change, in which 78.3% of the population said yes, changes in the climate has affected their agriculture production, whereas 21.7% of the population said that there are no changes in the agriculture productivity. While talking about the agricultural production 41.7% of the respondents have said that their agricultural production has been decreased among which 31.7% of the respondents have said that there are no changes, 25.0% of them don't know and only 1.7% of the respondent said it has increased his production.
- It was also found that climate change resulted in the elimination of various crops from the agricultural pattern which is not grown by the villagers, in which 40% of the population said that they stopped growing Guar Bean (Gawar phalli), 35.0% of the population said that they stopped growing Sesame (Til), 15.0% of the respondents said that they stopped growing Terramera (type of crop used for oil production) and 10.0% of the population said that they have stopped growing even Millets (Bajra)
- From the study, it was also found that climate change has resulted in various problems, in specific season problems faced by the farmers in agriculture and the season in which they face more problems, in which 33.3% of the respondents said there is a shortage of water due to less rain and high intensity of sunlight burns their crops, 16.7% of the population said there is a decrease in the ground level water and 16.7% of the population said there is no effect. It was also found that the seasons in which their crops are affected in the agriculture field, for which 70.0% of the population said that their crops are affected during summer, 17.7% of the population said their crops get affected in the monsoon season, whereas 13.3% of the population said their crops get affected during the winter season.
- In terms of livelihood, the study found that climate change has affected the people involved in agriculture, the climate has affected the animals, the milching animals which directly affected the people who are involved in animal husbandry/cattle rearing, in the study, it was found that 70.0% of the population said climate change had an impact on livelihood opportunities of labourers in the farmland and 30.0% population said climate change did not create any impact on livelihood opportunities of labourers in the farmland.
- In terms of work efficiency, it was found that how climate change has created effect, 48.3% of the population have said climate change reduced the efficiency of the workforce, 41.7% respondents have said climate change has decreased the working hours of labourers in the field, 8.3% population said climate change increased the work hours of the labourer in farmland and the remaining 1.7% of the population said climate change has resulted in enhancing the efficiency for the workforce.
- It was also found that climate change has resulted in an increase in the workforce of the labourers, and also affected 48.3% of the population by heatstroke, 25.0% of the population by common cold whereas 13.3% of the respondents were affected by other problems due to climate change.

Conclusion

Climate change is a global issue but people are less aware about this issue; one of the reasons is that the study was conducted in the rural area, people are affected by climate change but they are not aware that climate change has any role in decreasing their agricultural production, decrease in their number of animals, has affected their livelihood, created many

health problems for them as well as to their livestock, climate change has affected the milching animals, thus decreasing the milk production especially in the summer and rainy seasons.

- The majority of the people who are involved in agriculture had less income as compared to other people who are involved in other sources of livelihood rather than agriculture. The people are somewhat aware of the responsible factors for change in the climate.
- Agriculture production has been affected due to climate change and people are doing something to adapt to these changes due to climate, as they know the changes in the climate. In the agriculture fields, the farmers face lots of difficulties during farming like less rainwater, less groundwater, high intensity of the sunlight which burn their crops during summer, and unseasonal rain affecting their crops production.
- Climate change has affected the labour participation also in the agricultural field and reduced the working hours during Kharif season and increased the working hours of labourers during the Rabi season, and the majority of the people agreed that climate change has reduced participation of labours in the agricultural field and less utilisation of fertilisers/pests is the main reason for less agricultural production.
- There is an impact on fodder production which directly or indirectly affected the animals and the people who are involved in cattle rearing as their livelihood.
- Climate change has affected the grazing land and that effect on grazing land has also affected the cattle rearing which causes a reduction in the livestock, reduction of livestock resulted in the reduction of milk production, which in turn, has affected income.
- Less livelihood opportunity in the rural areas especially when there is less option for agricultural livelihood, leads people to migrate from their families towards cities for other work.
- The animals face various types of diseases like foot disease, mouth disease, animal plague in different seasons like summer, rainy, winter and for treating them the people of the central rural Rajasthan still practice conventional treatment to cure the animals.
- The main purpose of agriculture in the previous decade was for domestic use and now it became

both domestic as well as commercial purposes.

Suggestions

Awareness on climate change is still rare among the people of Central Rajasthan, the concept of climate change is still not clear among people, and therefore the people should be alerted by the Government, as it is a burning topic across the globe and we are lagging behind to tackle climate change.

- Greenery should be promoted by planting more plants every year and giving protection till the plant is grown.
- The people are not aware that animals get various diseases due to climate change, every year there should be the promotion of cattle medical camps especially during the summer and rainy season when the animals are getting affected badly and die due to several diseases.
- Climate change has affected agriculture production, people are less aware of resistive crops and high yielding variety seeds which gives good production during harsh climatic conditions.
- Another reason for less agricultural production was because of less use of chemical fertilisers and pesticides, due to its negative impact on people's health.
- If they want to survive with agriculture as a source of livelihood they have to promote uses of chemical fertilisers and pesticides which will save their crops.
- Climate change leads to unseasonal rain, increase in temperature, to overcome that people should adopt methods like rainwater harvesting by digging ponds, and wells in the agriculture field.
- The Government should provide mobile soil testing labs every year for examining the fertility of the soil and which crop is more suitable for better production in that soil.

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