

Impact of Drought on Indian Agriculture & Economy

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ABSTRACT: Drought is the most wide spread hydro-metrological syndrome of prolonged period of water scarcity, it affect on natural resources, environment & on the people. Environmental changes like climate, land use, natural resources, degradation have combine effect to cause drought, this disrupting the normal socio-economic settings. All the regions of India suffer with drought incidences.

Water is priceless & water scarcity is the major cause of drought. Rain water is extremely essential for agriculture, today Indian agriculture primarily depends on irrigation facilities. For the country's food security too drought are threatening particularly at a time when the country's population is increasing rapidly. Drought adversely affect on agricultural production by lowering the produce. This paper studies the causes of drought & its impacts on various sectors like economic, agriculture, social environment etc.

KEYWORDS: Drought Causes, Remedies, Impact, Economic, Agriculture, Environment etc.

I. INTRODUCTION

Drought is a complex, slow processes of ecological challenge that affects people than any other natural hazard by causing serious economical, social & environmental losses in both developing & developed countries. Drought period of unusual dryness is a normal feature of the climate & weather system in semi-arid and arid regions of the tropics, which covers more than one third of the land surface and is vulnerable to drought & desertification [1]. In simple words drought is a prolonged period of abnormally low rainfall leading to a storage of water affecting badly growing and living conditions. The characteristics like rainfall pattern, living requirement, flexibility of usage in the water resources etc are different for different regions. Due to varying characteristics and its varying impact for different regions around the world universally accepted definition of drought could be not concluded. Drought is a normal recurrent feature of Climate & occurs in all climatic regions and is usually characterized in terms of its spatial extension, intensity & duration [2]. Drought is generally considered to be occurring when the principle monsoon, i.e. southwest monsoon & north east monsoon, fail or are deficient or scanty. Monsoon failure causing crop failure, drying up ecosystems & shortage of drinking water results in undue hardship to the rural & urban communities [3].

Dry regions in India include around 94 mha & around 300 million people (one third Indian population) live in these area, more than 50 % of the region is affected by drought once every four years [4]. Different countries and states have developed codes, manuals, procedures, processes & policies for monitoring and management of drought with varying understanding. Now, India has developed a fairly elaborate governance system of institutionalized drought monitoring, declaration & mitigation of different level [5]. India's response to the need for enhanced drought management has contributed to overall development e.g. the drought of 1965-1967 encourage the "Green revolution" after 1972 drought employment generation programmes were developed for the rural poor, the 1987-1988 drought relief effort focused on preserving the quality of life [4].

Impact of drought: A Indian Scenario: -

In 1917-1918, the River Jhelum dried up completely in Kashmir [1]. Meteorologically +19 % deviation of rainfall from the long term mean is considered normal in India. Deficiency in the range 20-59 % represents moderate drought and more than 60 % is "severe" drought [5].

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The drought prone area are confined mainly to the peninsular & western part of the country & there are few pockets in the central , eastern, northern & southern parts. These regions suffer drought mostly due to the cumulative effects of changing precipitation , pattern [1]. Maharashtra received less than 50 % of rain for the last two years & total of 15 districts almost one fifth of the state is affected & about 15000 villages are declared drought-hit & need immediately help for their living [6,7].So present study is undertaken to find out the causes of drought & their impact on agriculture & Indian Economy.

II.METHODOLOGY

The research paper highlights the concern of drought in India, input of drought on Indian agriculture & economy, social & environment impact, information & data about the paper has been collected from the various secondary sources such as websites, research articles, reports, journals & reference book etc.

Objectives :- Agriculture is the main livelihood sources in India and it is depended on rainfall & water supply. A shortage in water affects agriculture badly resulting a famine& causes deaths drought is deadliest natural calamities

1. To study the concept of drought
2. To know the causes , remedies of drought & to study the impact of drought on Indian economy.

III.RESULTS & DISCUSSION

Causes of Drought :- Drought in india has some major causes as discussed here -

1. Location :- Some regions & states in india are drought prone, The irrigation commission of India has identified 67 districts in the country that are drought prone states like Rajasthan, Odisha, Andhra Pradesh, North Karnataka & Maharashtra have been identified as a drought prone .

2. Lack or no Rainfall :- Failure of monsoons is a major reason for drought in India. Inadequate rainfall causes. crop failure. The reduced water flow in rivers is due to inadequate rainfall blockage of water flow for dam to generate hydro-electric system requirement causes drought in the downstream areas.

3. Climate change :- Heat increased in summer causes more water to evaporate & unless there are rains to compensate for the loss , drought are imminent. Burning of fossil fuels are contribute to climate change,pollution & rise in temperature.

4. Ocean temperature:- The EL-Nino effect responsible for controlling monsoon in the Indian subcontinent. Abnormally high sea surface temperature have resulted in increased , evaporation & heavy rain across many places of the country. However , a contrasting phenomenon that instead of the high pressure air mass above the southern part of Indian Ocean, the EL-Nino creates a low pressure which pulls out dry air from central Asia & dehydrate the Indian landmass

5. Changes in Jet Stream :- Jet stream are the narrow bands of air that move around the earth at very high speeds. Jet stream can stall high pressure resulting system in sunny weather & no rainfall.

6. Change in local landscape :- Changes in vegetation , deforestation& drainage cause change in the landscape that leads into drought. Due to these factors, the water holding capacity of the soil get reduced & leads in to drought.

7. Hydrological drought :- Due to high temperature it causes evaporation and ultimately depletion of water reservoir. This can affect agriculture & hydel projects.

8. Metrological drought :- It causes due to insufficient precipitation & no rainfall.

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9. Agricultural drought :- It is caused due to insufficient precipitation , high levels of evapo-transpiration & reduced water table can pose serious threats to agriculture & their related industries.

10. Inadequate Agriculture practices:- Rainwater harvesting programmes are very important & essential to prevent droughts, but in many regions such practices are not followed & results into drought.

Impact of drought on Indian Economy :-

1) Impact on agricultures:-

If a farmer's water supply is too low , farmers will have to spend more money to irrigate the crops & provide water for livestock on animal farms & ranches. They have to spend money to drill new wells or buy water from tankers, it requires diesel ultimately which puts pressure on foreign exchange. Indian agriculture is monsoon dependent & around two-third land area is rainfed. This affects the shortfalls of agriculture production. This impact may be in the form of changes in the cropping patterns & impoverishment in cattle.

2) Impact on businesses : Industries that manufacture farm equipment like tractor, excavators and resources lose money because farmers do not have the money to buy from them. Hydroelectrical generators generate energy below capacity it affects an industrial area as well as agriculture production. Business connected to water recreation, such as beaches and lake side activities may close down because of low water levels or dried water bodies. Drought affects on low fishery business, textiles, power & automobiles, bankers are also facing pressure in assisting agriculture sector especially nationalized banks are asked to take steps to help farmers. Due to short supply one has to pay more money for food, inflation goes up by 4 to 5 % . Similarly reduced agriculture production pulls down gross domestic production (GDP) and adverse impact on overall economic growth.

3) Social impacts :- Clean water is very essential for sanitation it helps to prevent diseases. Hunger , malnutrition anemia & mortality are also due to drought. Similarly it also causes low food production, food nutrition also is a problem & that leads to vulnerability, , diseases & deaths.

4) Environmental impact–

- Fresh water levels & water discharge during drought are very low resulted into less dilution in ecosystem, it increases the concentration of chemicals, solid particles & decrease in dissolved oxygen.
- Water bodies dry out & aquatic animals die lead to habitat destruction, it affects on food chain & ecosystems.
- Migration of population is a significant problem in our country. Migration is usually to urban areas , it causes burden on urban infrastructure facility.
- Animals (wildlife) migrate long distance in search of water. They end up in new habitats making them vulnerable & endangered , while others face new threats.

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Remedial measures for drought :

- Better management of water sources in affected area for drinking water
- Providing fodder for cattle & other livestock in affected area.
- Providing employment to affected people & proper arrangement to supply food grains through public distribution system.
- To create awareness to grow drought resistant variety of crops & to change cropping pattern.

IV. CONCLUSION

It is clear that drought crashes our nation & it is important to control it by government initiatives & our own responsibilities by following activities.

- Necessary steps should be taken for tree plantation, conservation & restriction of deforestation .
- Construction of small dams & other reservoirs to store & supply water to drought affected areas.
- Use of sea water for irrigation & consumption through desalination plant.

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- Rain water harvesting & use of recycled water is very important to overcome the drought problem.
- Create awareness amongs society regarding water harvesting.
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