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The Assessment of Perception of Local Farmers on Cloudburst- Nashik District

Sharad A. Dhat
Assistant Professor in Geography, MVP's Arts, Science and Commerce College, Ozar (MIG), Nashik, 422206, India.
***Corresponding Author*- Sharad A. Dhat**
E-mail: drsharaddhat@gmail.com.
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Abstract –
Cloudburst is a climatic phenomenon; in simple manner it is an extreme amount of rainfall in short period of time. It causes flood like disaster in very short time, it has deep impact over human life and agricultural activity. In recent some decades often a time we heard word "Cloudburst" in the society, people have various understandings about this phenomenon. Farmers have fear in the mind about this climatic phenomenon they have various perceptions according to their level of literacy and source of information. In the year 2022 Nashik district had experienced this phenomenon frequently, it is a genuine try to investigates the local farmers perception about cloudburst by using secondary and primary data.

Key words- Climatic phenomena, Cloudburst, Perception etc.

Introduction-

A cloudburst is an extreme amount of precipitation in a short period of time, sometimes accompanied by hail and thunder, which is capable to creating flood conditions. Cloudbursts can quickly dump large amounts of water, e.g., 25 mm of precipitation corresponds to 25,000 metric tons weight on per square kilometre area of the region (1 inch corresponds to 72,300 short tons over one square mile). However, cloudbursts are infrequent as they occur only via orographic lift or occasionally when a warm air mass mixes with cooler air mass and resulting in sudden condensation. Cloudbursts are especially common in mountainous areas. This is probably because the warm air currents of a thunderstorm tend to follow the upward slope of a mountain. The effects of heavy rain are especially striking on mountain slopes causes the falling water is concentrated in valleys and gulley's. A large amount of runoff from higher elevations is mistakenly conflated with a cloudburst. The term "cloudburst" arose from the notion that clouds were akin to water balloons and could burst, resulting in rapid precipitation. Nashik, Niphad and Sinner tehsil of the Nashik district cloudburst event occurred on august 2022. it attracts the attention of researchers towards the "Cloudburst" phenomena in the district

Research Question-

What level of knowledge do local farmers have about cloudburst and what actions do they take?
What are their sources of information and their perception about the effects of cloudburst?
What are the coping strategies adopted?

Objectives-

The objective of this study is to know the perception, Knowledge and source of knowledge of local farmers on cloudburst.
To Understand farmers perception about the effects of cloudburst in the study area.
To Examine the coping strategies adopted by farmer and possible actions they take

Hypothesis-

Farmer's knowledge and perception of cloudburst varies significantly in the study area.
There is a significant variation in farmer's sources of information on cloudburst.
There is a significant absence of coping strategies for cloudburst in the farmers

Methodology -
The information and statistics related to cloudburst has been collected from the secondary source of data which include News report, Research articles, IMD and ARG data. The information of local farmers about cloudburst is gathered by personal communication by using random sampling method. The location map has been processed and represented by using GIS and cartographic techniques. As the study purpose the chorographic and chorological methodologies has been adopted.

6.Study Area

The Nashik is one of the major agriculturally and industrially developed districts in the North Maharashtra. In year 1969 Nashik district was formed with the Nashik city as a district headquarter. The extent of the district lies between 19.35 degree and 20.53-degree North latitude and between 73.16 degree and 75.16-degree East longitude with an area of 15530 sq.km.

Analysis

Nasik district is the western most district of the state Maharashtra where the western part of the district adjoin with western ghat it receives heavy (208 cm) monsoon rainfall during the year cause of hilly topography. Cloud burst is a climatic phenomena which took place causes of atmospheric air mass circulation. cloudbursts are infrequent as they occur only via orographic lift or occasionally when a warm air mass mixes with cold air mass and resulting in sudden condensation, this phenomenon is most common in mountain region. The Nashik cloudburst event which occurred in August and September 2022 at Nashik, Niphad, Igeatpuri and Sinner tehsil of the district. it is analysed based on rainfall received villages of the tehsil. The cloudburst event occurred in the district on different days of month August and September

Tehsil wise Cloudburst Rainfall Analysis

Tehsil	Average Annual Rainfall	Rainy days	Village	Rainfall During Cloudburst 24 hour (mm)
Nashik 8th Sept 2022	727mm	42 Days	Deolali	110
			Panchvati	98
			Adgaon	102
			Ambad	79
Sinner 31-Aug-22	605 mm	34 Days	Pandhurli	118
			Dubere	73
			Sinnar	69
			Shaha	95
Niphad 6th Sept 2022	533 mm	50 Days	Savargaon	112
			kedrai	95
			Khadak Ozar	97
			Niphad	96
Igeatpuri 31-Aug-22	3498 mm	82 Days	Igatpuri	110
			Ghoti	98
			Vadivarhe	79
			Taket	104

- In the Nashik tehsil cloudburst occurred on 8 th august 2022, were places like Deolali, Panchvati, Adgaon and Ambed received 110,98,102,79 mm rainfall accordingly during a 24 hours. Same scenario of rainfall is found Niphad, Sinner and Igeatpuri tehsil of the district. As compare to average rainfall and rainy days of corresponding tehsil it is a very heavy rainfall during a very short period of time(24 hours).
- Niphad and Nashik tehsil are agriculturally well grown tehsil of the district where Sinner tehsil is comparatively underdeveloped cause of its low annual rainfall. Highland holder, literate and technosavys farmers are known with the cloudburst phenomena

but it is completely opposite in the small landholders, illiterates and traditional farmers they are superstitious and believers of God.

▪ Farmar's of the district has different sources of information about weather and climatic phenomena like IMD weather forecasting, newspaper, BSNL SMS alert about weather and weather mobile application literate and large scale farmers are well aware with this sources.

▪ Perception of farmers about effect of cloudburst are vary according to there social environment, education, extent of agriculture operations. The largescale farmers, cash crop cultivators are well aware with the impact of cloudburst phenomena, they made changes in their agricultural practices as per weather dynamism i.e. insectsides spray, mulching practice, pesticides supply, Poly house etc.

▪ There is a very limited scope for coping strategies on cloudburst because it is a climatic phenomena which changes very rapidly and vary place to place. We don't have that kind of mechanism in current time but theoretically it is not impossible to forecast rainfall over a very small area as well, but it requires a very dense network of weather instruments and computing capabilities that seem unfeasible with current technolog

Conclusion

▪ Farmers have very limited coping strategies on Hazards like Cloudburst cause of their small landholding, weak economy and traditional agricultural practices.

▪ Maximum farmers are superstitious cause of their limited literacy and traditional agriculture practicing attitude.

▪ Cloudburst is an atmospheric disaster and practically it is very difficult to weather scientist to forecast or made predictions for short time and precise area.

▪ Theoretically it will possible to forecast rainfall or cloudburst for short time and small area but it requires a very dense network of weather instruments and computing capabilities.

▪ Making awareness in the farmers about cloudburst like climatic phenomena could help to change their perception about Cloudbursts like disasters.

▪ Government must take some initiatives for to increase farmers awareness about climatic disasters through orientation and exhibition programme

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