THE SOCIOECONOMIC EFFECTS OF DROUGHT: A CASE STUDY OF THARPARKAR

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ABSTRACT: *Tharparkar is an arid zone in Sindh province that has been severely impacted by drought and climate change. These changes endanger the lives and livelihoods of the neighboring population. The goal of this study is to look into Tharparkar's social and economic situation. This study included both primary and secondary data. A questionnaire was the primary data collection technique. The study's findings revealed that the drought had a socioeconomic impact on people. Agriculture output has declined, and cultivated regions have suffered. Animals are malnourished, and many have died as a result and Long distances to reach health providers/facilities (the average distance traveled by Tharparkar residents to reach a health facility is 20.8 kilometers), expensive services, a lack of/absence of transportation, and inadequate road infrastructure are all barriers to accessing health providers/facilities.*

Keywords: Drought, Livestock, Socio-economic, Health, Tharparkar

INTRODUCTION:

Natural disasters have a negative impact on ecosystems and human populations. When a hazard strikes a vulnerable population, it results in a disaster, which can result in community damage and casualties [1]. Drought is one of the most devastating natural disasters, causing enormous economic and social losses each year as a result of its complex evolutionary mechanisms. During droughts, however, tens of millions of people and livestock continue to suffer from a lack of water, and droughts continue to cause significant economic losses [2]. Concerns about the escalating effects of drought on an increasing number of sectors, as well as the current and projected increase in the frequency and severity of droughts [3]. In recent years, Pakistan has experienced catastrophic floods, droughts, and cyclones that have killed and displaced thousands destroyed livelihoods, and damaged infrastructure. Climate change raises the possibility that these and other natural disasters will become more common. in frequency and severity in the coming decades—a stark reminder that Pakistan is one of the countries most vulnerable to the effects of climate change. The majority of Pakistan is climatologically arid to semi-arid, with significant spatial and temporal variability in climatic parameters. Monsoon rains are regarded as a dominant hydro-meteorological resource in Pakistan, accounting for approximately 59% of annual rainfall. From 1999 to 2018, Pakistan ranked fifth among the ten most vulnerable countries to climate change, according to the Climate Risk Index (CRI) [4]. Droughts can be especially severe in semi-arid countries such as Pakistan, where agriculture accounts for more than 20% of GDP and employs about 42.3 percent of the workforce. Livestock, a sub-sector of Pakistani agriculture, accounts for more than 56% of agricultural value addition and approximately 11% of GDP [5]. Agriculture employs over 68 percent of the population. The livestock sector accounts for around 28 percent of rural family income,

while the agricultural sector accounts for 24 percent [6]. The study intended to identify the major socioeconomic factors impacting drought in Sindh Pakistan's Tharparkar Desert. The study seeks to evaluate a wide range of socio-economic factors that will have a detrimental influence on local communities.

1. MATERIALS AND METHODS

The research used both qualitative and quantitative methodologies, gathering both primary and secondary data and information. A household questionnaire survey and field observations were all used to collect primary data. Secondary data was gathered via published research journal articles, books, government, and NGOs.A multistage sampling strategy was used to acquire data. For this study, a household survey was undertaken in Tharparkar. To choose 384 samples from the specified Area, the proportional stratified sampling approach was utilized. Talukas were selected using the Purposive sample technique, whereas households were selected using the Random sample technique [7].

Study Area

District Tharparkar is considered one of the country's least developed regions, with a population of 1,649,661 people (301,626 households)1 with diverse socio-cultural, religious, and environmental identities. Tharparkar has been experiencing drought-like conditions since 2014, with the year 2017 being comparatively better than others. The Pakistan Meteorological Office stated that the cause of the disaster is a lack of rainfall during the monsoon season over the last three years. As a result, local crops failed and livestock died. In terms of human survival, Tharparkar District is recognized as one of the most dangerous areas in the country [8]. Thousands of people die in the area each year as a result of food insecurity, scarcity of water, malnutrition, and a lack of access to competent healthcare.

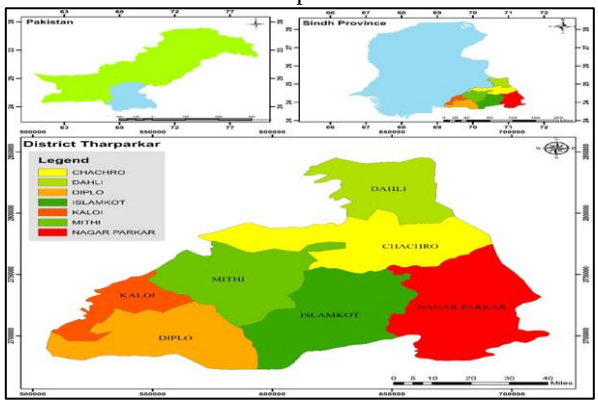

Figure 1: Map of the study area [9].

2. RESULTS

384 household respondents from the Tharparkar were interviewed for the study of the socioeconomic effects of the drought. The essential features of respondents are summarized in the table below.

Table1: Respondent Profile

		Frequency	Percentage
Age	<20	22	5.7
	21-30	88	22.9
	31-40	159	41.3
	41-51	71	18.4
	>51	45	11.7
Total		384	100
Education	Illiterate	127	33.07
	Primary	157	40.08
	Intermediate	63	16.4
	Graduation	37	9.63
Total		384	100

Agriculture and livestock provide the majority of households with their primary source of income. The figure below depicts the occupational structure of households.

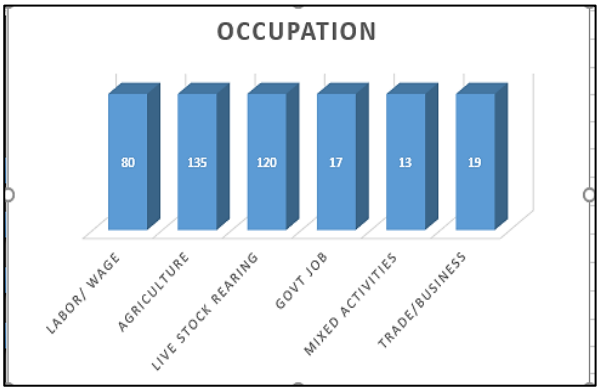

Figure 2 Occupation of the respondent.

Agricultural

Rainfall is crucial for agriculture in Tharparkar. In Tharparkar, kharif season crops are typically grown in the summer, with sowing taking place in June and July and harvesting taking place in September and October. The most important crops are bajra, legumes, guar, jowar (Sorghumvulgare), maize, sesame, and groundnuts. A lack of rainfall has severely hindered agricultural activities. Despite using all of their seed banks during the previous monsoon, local farmers did not receive the required yield production this year. Seeds did not germinate adequately on time due to a lack of moisture. Some farmers have even acquired seeds on credit and are unable to repay their bills, as seen from the table below most households couldn't afford the purchase of seeds for farming. the Household income and livestock fodder may be further impacted as a result of the drop in agricultural yield. The agricultural territories of many union councils have been decimated, and rain-fed farming is almost impossible.

Table 2: Household Purchase capacity for seeds

Household Afford seeds	Household purchase seed on credit
12%	88%

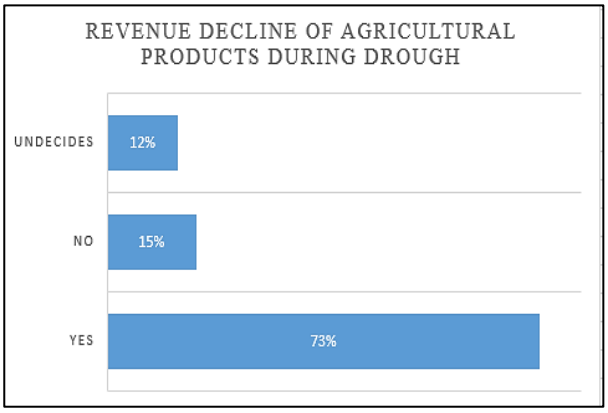

Figure 3: Revenue decline of Agricultural products during Drought.

LIVESTOCK

In drought-stricken areas, a substantial number of livestock have died. Because of a shortage of rainfall, pasturelands and rangelands are unable to supply adequate grass to feed a big number of livestock. Livestock is in significant danger in the current situation since there isn't enough grass for them to eat. Several disease epidemics have occurred as a result of a lack of rain, killing both animals and humans. This was found while gathering data and inquiring about previous droughts' effects on livestock. In the curse situation drought, one responder indicated that he owned 300 to 400 cows, lambs, and goats till a few years ago, but that drought killed up to 80 to 85 percent of them.

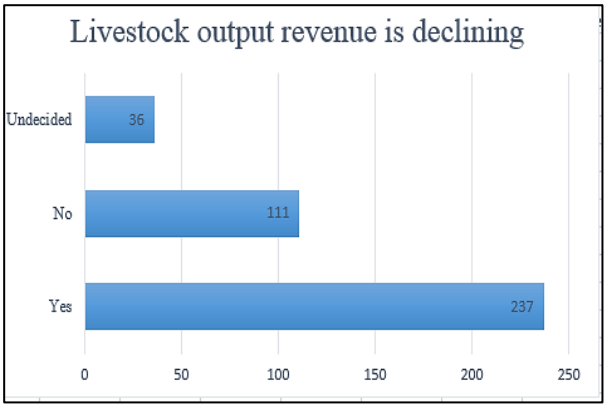

Figure 4 drought Effect on the live Stock Output.

Income of the people

Because of the recent low rainfall, most of the people will be unable to cultivate crops, and so will be able to provide only one meal for the family in the coming days through labor. Locals are using the traditional strategy of relocation to overcome drought, which is a popular practice among the majority of households in search of a job, and they generally

undertake labor or daily wage work. The graph below indicates that during a drought, people face hardships, agriculture suffers, and output falls below average.

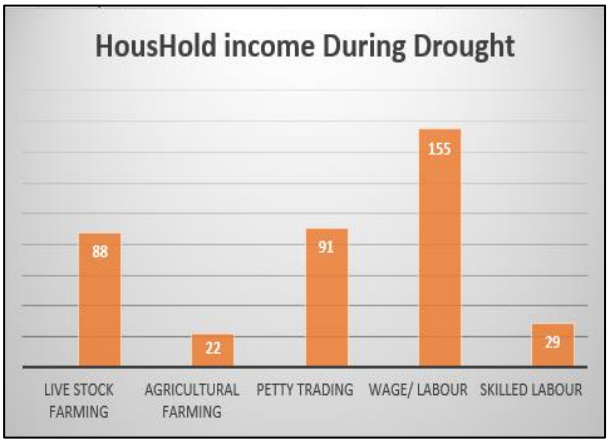

Figure 5: household income During a drought.

Education and Health

Children's education has suffered as a result of the drought's loss of household income and other social services. Drought has a negative impact on children's academic performance. When asked if the drought had affected their children's education, 65.4 percent replied yes, while 44.6 percent said no.

Table 3: Impact of the drought on children's education

Drought effects on Children's education	Percentage
Education effected	65.4%
Education not effected	44.6

Availability of healthcare services during the drought People had access to healthcare facilities throughout the drought, according to 35% of respondents. During the drought, 65 percent of respondents did not have easy access to health

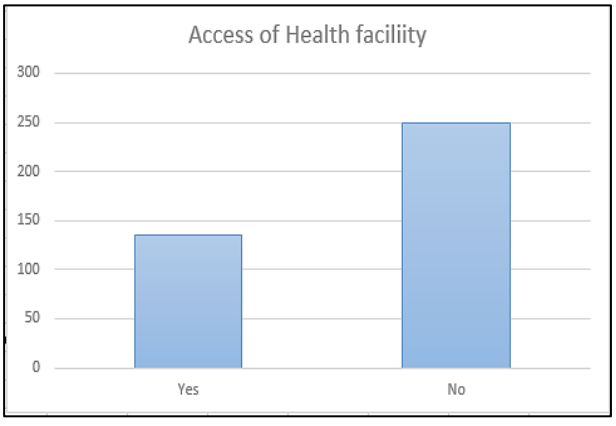

Figure 6: Health facilities access to the Respondent

care. The SDNA Report contains various critical statistics that show the difficulties that the Tharparkar district is facing, as well as its patterns of access to health facilities and providers. The majority of the surveyed population (22%) seeks out Basic Health Units, followed by 20% seeking out THQ, 19% seeking out Rural Health Centers, 18% seeking out DHQ, 12% seeking out Private doctor/clinic, and the remaining 9% seeking out other options such as dispensary, MCH, outreach/mobile team, and so on. The most persistent impediments to accessing health providers/facilities are long distances (the average distance traveled by Tharparkar inhabitants to reach a health facility is 20.8 kilometers), pricey services, a lack of/absence of transportation, and inadequate road infrastructure. Other causes include a lack of medications, medical equipment, and health/female health specialists.

3. CONCLUSION

Drought is one of the most serious disasters that affect the socio-economic situation of a region. Drought has become one of the most common tragedies in Tharparkar, wreaking havoc on the people who live there. Drought has had enormous social and economic implications, putting residents' livelihoods in jeopardy. Cultivated areas have been ravaged, and productivity has plummeted. As a result, agriculture's revenue has plummeted. Livestock has died, and the revenue loss from livestock production has been reduced to the bare minimum. In Tharparkar, humans and animals are both affected by a variety of diseases. Drought promotes the animal disease sheep pox and peacocks are also susceptible to some infections. The primary causes of infant death are high birth rates, large families, malnutrition, and a high frequency of water-borne illness. Several other such deaths have gone undiscovered. Malnutrition is becoming more common as a result of an increase in animal mortality. Other health issues prevalent in Tharparkar include pneumonia, diarrhea, and weight loss during birth and early births. Because health and other services are located at a set distance and individuals must travel a long distance to obtain them, mobility is one of the most significant issues that communities face. To improve socioeconomic conditions, the government must take immediate action to provide necessities such as food, health care, and education.

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