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Assessing the Socioeconomic Impacts of Drought in the Southeast of Afghanistan

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Abstract

In Afghanistan, drought is among the leading natural disasters, with significant socioeconomic consequences. According to the Afghanistan disaster management profile, drought is one of the potential disasters in Afghanistan with multifaceted impacts. The present study was carried out in the Gaghori District, Ghazni Province, Afghanistan, to assess the socioeconomic impacts of drought. The study used a quantitative research methodology, with 386 respondents surveyed via a cross-sectional survey. The survey questionnaire was based on three primary variables (public awareness, social impact, and economic impact). Content validity and reliability were examined for precision. The study used a random sampling technique with a 5% margin of error and a 95% confidence interval. The results revealed that 88.71% of the respondents were aware of drought hazards; 47.63% and 95.70% experienced social and economic impacts of drought, respectively. The findings revealed a correlation between community awareness and drought impacts.

Keywords: Drought; Socio-Economic Impact; Public Awareness; Gaghori

د افغانستان په سوېل ختیځ کې د وچکالی ټولنیزو او اقتصادي اغېزو ارزونه

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لنډیز

په افغانستان کې وچکالي له هغو مهمو طبیعي ناورینونو څخه ده چې پراخ ټولنیز او اقتصادي اغېزې لري. د افغانستان ناورینونو مدیریت پروفایل له مخې، وچکالي په هېواد کې له احتمالي پېښو څخه ده چې خو اړخیزې پایلې رامنځته کوي. دا څېړنه د غزني ولایت په جاغوري ولسوالی کې ترسره شوې، تر څو د وچکالی ټولنیز او اقتصادي اغېزې وارزول شي. څېړنه کې د کمي میتود نه په استفادې مقطعي سروې تر سره شوې، چې پکې د تصادفي نمونې اخیستلو له لارې د ۳۸٦ ګډونوالو څخه معلومات راټول شول. د سروې پوښتنلیک دري اساسي متغیرونه لري: عامه پوهاوی، ټولنیز اغېزې او اقتصادي اغېزې. د څېړنې پایلو وښودله چې ۸۸,۷۱ سلنه ګډونوال د وچکالی له ګواښونو خبر وو، ۴۷,٦۳ سلنه د ټولنیزو اغېزو او ۹۵,۷۰ سلنه د اقتصادي اغېزو تجربه لرله. همدارنګه، پایلو څرګنده کړه چې د ټولنې د پوهاوي کچه د وچکالی له اغېزو سره څرګنده اړیکه لري.

کلیدي کلمې: وچکالي؛ ټولنیز او اقتصادي اغېزې؛ عامه پوهاوی؛ جاغوري

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Introduction

Climate change leads to changes in weather patterns, including temperature, precipitation, and extreme weather events (Saqib et al., 2016). It manifests in various forms, including droughts, floods, extreme weather events, and shifts in long-term weather patterns (McLeman & Smit, 2006). Evidence over the past two decades has increasingly shown that the global climate is changing, leading to climate variability, weather extremes, and natural disasters such as droughts and floods (van Aalst, 2006). Climate change is a significant contributor to extreme events, which have various consequences on communities (Bonazza et al., 2021). The heightened vulnerability to climate change and climate-induced disasters affects the economy, employment opportunities, and migration (Weerasekara et al., 2021). However; drought is a significant impact of climate change, particularly in terms of its widespread and long-lasting effects on various sectors. Droughts can have far-reaching consequences on ecosystems, agriculture, water resources, economies, and communities. Drought is characterized by multiple climatological and hydrological parameters (Mishra & Singh, 2010). In recent years, drought occurrences have become more frequent, and their impacts have been exacerbated by rising water demand and the variability in hydro-meteorological variables due to climate change (Mishra & Singh, 2011). Typically, socioeconomic drought occurs when water resource systems are unable to meet community water demand (Zhao et al., 2019). It occurs in both developed and developing countries, has significant impacts, and lasts for a long time (Kala, 2017; Silva and others). The causal factors are overexploitation of water resources, weather variability, and climate change (Yves and Montpellier, 2020).

Typically, global climate change leads to widespread drought stress across vast areas (Seleiman et al., 2021). It is one of the multiple-stress risks that increase socioeconomic consequences (Dumitraşcu et al., 2018). It poses a threat to global food and water security and to the problem of malnutrition, particularly for children and women (Ngcamu & Chari, 2020). South Asian countries face frequent droughts due to erratic rainfall, which is in turn driven by a changing climate and their dense populations. It has caused mass migration due to limited access to drinkable water,

economic losses, and land degradation (Hermans & McLeman, 2021). Comprehensive studies are needed to map, predict, and project drought in South Asia to reduce its impacts (Chandrasekara et al., 2021). Bangladesh experiences devastating droughts that destroy millions of hectares of rice fields annually, with historic events causing significant impacts on rice production (Moutou et al., 2004). In South Punjab, Pakistan, meteorological drought negatively affects maize yield variations during critical growth stages (Waseem et al., 2022). Drought in Nepal affects maize and wheat yields, which contribute a significant share of the country's GDP, underscoring the importance of monitoring and mitigation efforts (Hamal et al., 2020). In Iran, drought has destructive effects on livelihood capitals, with livelihood assets mediating the relationships between drought and outcomes (Khayyati & Aazami, 2016).

Socioeconomic drought occurs when a community's water availability falls short of its sociological and economic needs, mainly due to seasonal precipitation deficits, climatic change, and industrial growth, leading to increased regional water demand (Guo et al., 2018). Drought hazards have direct and indirect effects. In the Ebro River Basin study, direct impacts included a €377 million reduction in agriculture and energy sectors, resulting in the loss of over 11,000 jobs (Pérez & Barreiro-Hurlé, 2009). In Andalusia, a severe multi-year drought from 2005 to 2008 caused an estimated loss of EUR 1,512 million, impacting regional social welfare and reducing incomes for rain-fed farms (Espinosa-Tasón et al., 2022). Drought also negatively affects non-agricultural sectors like water supply, recreation, tourism, forests, and public health in the Intermountain West region of the US (Wlostowski et al., 2022). Climate change-induced drought in the Mediterranean, combined with unsustainable policies, leads to reduced water resources, rural land abandonment, and migration to urban areas. The severe drought in Syria from 2006 to 2010 contributed to uprisings, immigration, conflicts, and terrorism, highlighting the socio-economic impacts and potential conflicts arising from water-scarce regions (Nakagawa, 2018). Studies in South Korea emphasize the need for a comprehensive assessment of the effects of drought on agriculture, accounting for factors such as water deficit, economic damage, and environmental impacts (Lee et al., 2022).

Afghanistan is a landlocked nation in southern Asia. It has irrigated farmland, tiny and deep valleys, rich rivers, deserts, and snow-capped mountains. It is vulnerable to a variety of hazards, including drought, floods, avalanches, earthquakes, and landslides (Usmani, 2020). The country receives between 200 and 400 mm of precipitation annually, underscoring the need for natural resource management and for adapting and implementing climate change mitigation measures to mitigate the effects of drought (Qutbudin et al., 2019). Since 1960, the average temperature in Afghanistan has risen by 0.29 °C per decade, while average precipitation has decreased by 0.5 mm per month and by 2% per decade, according to climate records (Aliyar et al., 2022). Due to the risk of drought, thousands of people annually lose their livelihoods and primary resources (Daniell & others, 2016; Iqbal, Donjedee, &Kwanyuen, 2016). Drought in Afghanistan has had multiple significant impacts. Since 2000, the country has experienced severe to extreme drought, with more than 53% of sub-catchments suffering the worst drought in history. Additionally, about 58% of sub-catchments have faced very frequent or extremely frequent drought conditions for extended periods (Chen et al., 2023).

Between 1990 and 2009, drought affected 12 million Afghan farmers, leading to a 70% decrease in cultivated areas in Ghor, Badghis, and Herat provinces. Crop diversity and yields were severely impacted, with reductions of 88% for peas, 17% for cotton, and 50-70% for wheat and barley. Furthermore, drought caused significant destruction, with 80% of forests and pastures in Nimroz, Helmand, and Farah provinces being destroyed (Husbandry, 2003).

The economic consequences of drought in Afghanistan are substantial, resulting in average annual losses of USD 334 million and potential agricultural losses of USD 3 billion during severe droughts. Approximately 2.7 million people, or 9% of the total population, are at risk due to drought, and since 2000, 6.5 million people have been affected. Drought also contributes to household poverty, economic insecurity, indebtedness, violence (including gender-based violence), conflicts, societal disruptions, and negative impacts on health and education outcomes. Moreover, drought leads to the degradation of natural resources

and a reduction in GDP, affecting various aspects of life in Afghanistan (Afghanistan Drought Risk Management Strategy, 2019)

According to the Food and Agriculture Organization (FAO) projections, by 2050, about 90% of Afghanistan will be affected by drought, and by 2040, the country will experience severe water scarcity. (Andrew Maddocks, 2015).

Ghazni is a province located in Southeastern Afghanistan (Qutbudin et al., 2019). It features a semiarid climate (Sarwary et al., 2022). Such regions are more susceptible to drought risks. (Qutbudin et al., 2019). Ghazni and other central regions of Afghanistan receive an average of 390 millimeters of precipitation annually. This precipitation quantity varies in space and time, as the Gaghori district's annual precipitation exceeds 500 millimeters (Mercado, 2020). This climatic variation has been observed to have both direct and indirect effects on agricultural production in Ghazni (Mercado, 2020). Gaghori is the second largest district in Ghazni, but due to its climate and natural features, it is prone to drought risks (Dost & Kasiviswanathan, 2022), (Nasrollahi et al., 2018). The Ghazni District of Jaghori is located in climatic zone 3, which is warm. The average temperature difference between zones 1 and 3 is 6.6 degrees Celsius. Precipitation varies by 200 mm during the rainy season but is comparable during the semi-wet and dry seasons (Sarwary et al., 2022). It has been repeatedly affected by drought, which has had diverse consequences for its inhabitants (Kugbei et al., 2005). In addition, due to drought hazards, agricultural production has dropped from 2008 to 2017 (Mercado, 2020). Furthermore, the studies conducted in Botswana in 2015 find that drought was the main cause of the community's income decline; similarly, drought was also the cause of the 60% reduction in agricultural production, which contributed to the community's income (Rural & Regeneration, 2015). A comprehensive drought-hazard impact assessment in Afghanistan is crucial for several reasons. Firstly, Afghanistan is highly vulnerable to drought, with a history of recurrent, severe drought events that have had devastating consequences across various sectors (Qutbudin et al., 2019). Secondly, limited studies have been conducted to thoroughly understand the impacts of drought in the country. These limited studies are the main cause that the community is not able to mitigate the adverse impacts of

drought on livelihoods (Mortimore, 2010). Moreover, there is a recognized need for comprehensive research on drought mapping, prediction, and projections in South Asia, including Afghanistan (Chandrasekara et al., 2021). Therefore, conducting a comprehensive assessment will not only fill critical knowledge gaps but also support evidence-based planning and policy formulation for future adaptation measures (Province, 2018). Therefore study aimed at assessing the socio-economic impacts of drought, in Ghazni province and its possible mitigation strategies, fill the gaps of limited studies and help with the community to aware the drought hazards risk at communities level and take actions for the mitigation and adaptations strategies.

Research Methodology

This study used a quantitative, cross-sectional survey method. Data were collected using a structured questionnaire comprising three sections: drought hazard awareness, drought social impacts, and drought economic impacts. The awareness section included nine dichotomous (Yes/No) questions, while the social and economic impact sections included six and five items, respectively, measured on a five-point Likert scale. Content validity of the questionnaire was ensured through expert review by six specialists from the Faculty of Environment at Kabul University. A pilot study involving 10% of the questionnaire was conducted to calculate the Average Congruency Percentage (ACP). The Item-Level Content Validity Index (I-CVI) values were satisfactory, confirming the instrument's validity and reliability. After completing validity and reliability testing, a random sampling method was applied. The sample size was determined using the Krejcie and Morgan formula, yielding 384 respondents with a 5% margin of error and a 95% confidence interval.

Study Area

Ghazni province is located in the southeast of Afghanistan and is bordered by Paktia, Logar, Zabul, Daikundi, Bamyan, and Wardak provinces, all of which are significant and densely populated (Miani et al., 2023). According to the 2017 Afghanistan National Statistics and Information Authority (NSIA), the country comprised 1,249,379 people and 19 districts. The area's climate is transitional between cold semiarid and warm

summer humid continental. Winters are cold, and summers are warm and dry (Mota et al., 2005). In certain areas, such as Nili and Kiti, annual precipitation is approximately 260 millimeters, but in others, such as Shibar, Malistan, and Jaghori, it reaches 500 mm. The average temperature varies by location and time, but June, July, and August are often the hottest and driest months (Jawid & Khadjavi, 2019). In Ghazni province, floods, droughts, and landslides are relatively common hazards (Stępień, 2017). Jaghori district is the second-largest district in Ghazni province, with a population of approximately 560,000 as of 2015, a land area of 2739 km2, and an elevation between 2427 and 3600 meters above sea level (Bergh, 2015). Due to its arid and semiarid climate, Jaghori is susceptible to climate and water distribution inequalities. Thus, the area is exposed to drought hazards (Zhao et al.). The study area is shown in Figure 1.

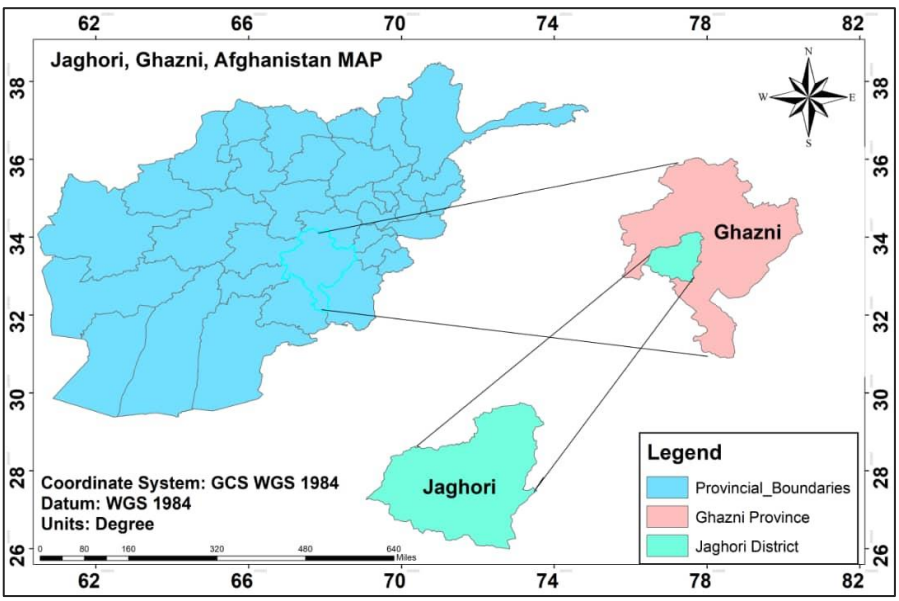

Figure 1. *Study area (Jaghori, Ghazni) map*

In Ghazni province, in Gaghori District, a socio-economic impacts assessment of the drought is being conducted using a quantitative approach. The data is collected based on the questionnaire which was consisted of three parts: (1) Drought hazards awareness, with 9 questions based on the "Yes" and "No" options; (2) Drought social impacts, with 6 questions based on the Likert 5-point scale; and (3) drought economic

impacts, with 5 questions based on the Likert 5-point scale. To ensure the content validity test is as precise as possible, six additional knowledgeable experts from Kabul University's Environment Faculty have been selected. See Table 1. In addition, the 10% questionnaire is used to determine the Average Congruency Percentage (ACP) in the pilot study (see Table 2). Following the calculation, all variables of I-CVI were evaluated as satisfactory. After the content validity and reliability tests, a random sampling strategy was applied, based on the Kerlinger-Morgan Formula (S = X2NP (1-P) / d2 (N-1) + X2 P(1-p)), and the 384 respondents were surveyed with a 5% margin of error and a 95% confidence interval.

***Table 1**. Individual content validity index (I-CVI)*

No	Variables	Items	I-CVI
1	Public Awareness	9	0.74
2	Economic Impact	5	0.75
3	Social Impact	6	0.76

***Table 2**: Test reliability (Cronbach's alpha)*

No	variables	Item	Cronbach's Alpha
1	Awareness Impact	9	0.81
2	Economic Impact	5	۷۵۸0.
3	Social Impact	6	0.839

Data collection

This study's primary data were collected using a reliable questionnaire. The questionnaire distribution is based on a random sampling approach. In addition, secondary data collected from books, publications, and national and international articles are utilized in this study. The descriptive analysis is conducted using SPSS, while Microsoft Excel is used to generate charts and graphs. In addition, a Geographic Information System (GIS) is used to map the study area.

Result and Discussion

The research analyzed the profile of the respondents in this study; 76.4% were males and 23.6% were females, with ages ranging from 16 to 30 and older. In addition, the respondent's level of education is considered. 25.6%

of participants had no formal education, whereas the rest were either in school or had graduated. There were even participants with a bachelor's degree. In addition, researchers considered the respondents' monthly income and that of their family members. See Table 1

Table 3: *Demographic Profile of the Respondents*

Demographic		**Number of Participants (Total 386)**	**Percentage**
Gender	Male	295	76.4
	Female	91	23.6
Age	16-21	147	38.1
	21-25	63	16.3
	25-30	68	17.6
	Above 30	108	28.0
Education	Student	131	33.9
	High School Graduate	105	27.2
	Bachelor Degree	51	13.2
	Illiterate	99	25.6
Monthly Income	Less than 10000 AFG	283	73.3
	10000 AFG	34	8.8
	1500AFG	28	7.3
	20000 AFG	12	3.1
	25000 AFG	15	3.9
	Above 25000 AFG	14	3.6
Family Member	Between 2- 3	48	12.4
	between 4-5	70	18.1
	Between 6-7	129	33.4
	8 or Above 8	139	36.0

Public Awareness

The findings of this study are consistent with previous research on the negative impact of drought on agriculture and livelihoods, as well as its contribution to food insecurity and conflict. According to Mohmand et al. (2010), Afghanistan is predominantly an agricultural country, with more than 95% of the population engaged in agriculture. In addition, Jawid (2021) reported that agriculture generates 22% of the nation's gross domestic product. Therefore, it is not surprising that the majority of participants (95.9%) in this study agreed that drought has negative consequences for agriculture, with 81.1% of respondents believing that drought negatively impacts the community's livelihood. This aligns with

previous studies that have found that drought negatively affects agriculture and leads to food insecurity (Adhikari, 2018; Jawid, 2021).

The study's findings regarding the impact of drought on migration and disease also align with previous research. Social et al. (2022) reported that both internal conflicts and natural disasters, including drought, have led to the displacement of many Afghans. The finding supports this that 71.2% of respondents in this study believe that community migration is caused by drought. Furthermore, the study's finding that 61.1% of respondents agreed that drought spreads disease is consistent with the findings of Lindvall et al. (2020), who reported that drought increases the risk of disease outbreaks and contaminated drinking water. The study's finding that drought leads to conflicts over water resources is also supported by previous research. Adhikari (2018) reported that drought has generated social conflict over water use for agriculture in Nepal. Similarly, the study found that 92.2% of respondents assume that drought causes community conflicts, and that it has direct effects on water supplies, agricultural production, and farmers' lives, which could lead to conflict over water resources

Table4: *Public Awareness*

No	Items	Yes %	No %	No idea %
1	Is Drought considered a natural hazard?	93.0	5.4	1.6
2	Are you aware of the adverse effects of Drought on community livelihood?	81.1	13.2	5.7
3	Do you know about the negatives impacts of drought on agriculture?	95.9	2.3	1.8
4	Do you aware of the role drought plays in reducing food?	98.4	.8	.8
5	Do you aware that drought can cause local conflict?	92.2	3.4	4.4
6	Do you believe drought can cause migration?	71.2	14.8	14.0
7	Do you aware that drought can cause diseases?	61.1	18.7	20.2

Economic Impacts

Drought is a natural phenomenon that poses a significant threat to global economic development. According to a study by Gao et al. (2019), Asia has suffered the greatest economic losses from droughts, totaling $50

billion. The findings of this study align with the current survey, which found that 60.9% of respondents strongly agreed that drought causes economic losses. The negative impact of drought on the agriculture sector is also a common observation. A majority of the participants (76.2%) in this study agreed that drought has different consequences on agriculture. Additionally, when drought significantly impacts a community's agricultural sector, the community's income would also be negatively affected. In line with this observation, a study in Afghanistan's Badakhshan province found that 73% of respondents experienced a substantial decrease in income due to drought (Cheung & Tai, 2021).

Moreover, the direct effects of drought on the community's livelihoods are significant, as supported by the current study's findings, which show that 66.1% of respondents strongly agreed that drought hazards have direct effects on the community's livelihoods. The effects of drought are not limited to the agricultural sector; they also affect animal growth.

***Table 5**: Economic Impacts of Drought in Jaghori*
Strongly Agree(SA), Agree(A), Strongly Disagreed(SD), Disagreed (DA)

No	Items	SD%	DA %	A%	SA%
1	To what extent do you agree that Drought cause economic losses?	.5	0.0	38.6	60.9
2	Drought has negative effects on agriculture	0.0	.5	23.3	76.2
3	Drought has negative effect on incomes	.3	2.6	47.9	49.2
4	Drought has direct effects on employee earnings in Jaghori.	.8	6.2	49.2	43.8
5	To what extent is livestock growth is affected by drought in Jaghori	.5	1.8	31.6	66.1

Social Impacts

According to the research, 31.6% of respondents strongly agreed that the Jaghori district is prone to drought, 43.3% agreed, 21.8% were neutral, 2.8% were opposed, and 0.3% strongly disagreed. 26.4% of respondents strongly agreed that residents had mental health issues linked to drought risks, 45.3% agreed, 23.8% were neutral, 3.6% disagreed, and 0.8%

strongly disagreed. Every year, as a result of conflict and natural calamities, Afghans relocate, which affects their mental health (Social et al., 2022). 15.0% of respondents strongly agreed that drought is a major driver of migration, while 34.2% agreed, 35.2% were neutral, 12.4% disagreed, and 3.1% strongly disagreed. 14.5% of respondents agree that drought is the primary cause of the conflict; 26.4% agree; 32.6% are neutral; 22.5% are opposed; and 3.9% are extremely opposed.

Over 13.5 million Afghans faced heightened food insecurity in 2018, including lost livelihoods, livestock mortality, and forced displacement into urban areas, due to the drought (Kochhar & Knippenberg, 2023). 22.0% of participants in the research strongly agreed that drought influenced food security, while 24.6% agreed, 26.2% were neutral, 21.5% were opposed, and 5.7% were extremely opposed. 18.1% of respondents are completely in agreement that drought has increased disease, 29.3% agree, 27.2% are neutral, 16.3% disagree, and 9.1% are strongly opposed.

***Table 6**: Social Impacts*

No	Items	SD %	DA %	N%	A %	SA %
1	Is Jaghori district is vulnerable to drought?	0.3	2.8	21.8	43.3	31.6
2	Does drought hazard lead to mental problems in the community?	.8	3.6	23.8	45.3	26.4
3	Do you agree that drought caused migration in Jaghori?	3.1	12.4	35.2	34.2	15.0
4	Do you believe drought hazards contribute to conflict occurred over water resource?	3.9	22.5	32.6	26.4	14.5
5	Do you think drought effect on food security?	5.7	21.5	26.2	24.6	22.0
6	During Drought hazard diseases level are increasing	9.1	16.3	27.2	29.3	18.1

Strongly Agree(SA), Disagreed (DA), Neutral(N), Agree(A) and Strongly Disagreed(SD)

Summary of Key Fndings

The research conducted in Ghazni, Gaghori district, reveals that a significant proportion of residents (88.71%) is aware of drought risks, causes, and effects. This aligns with previous studies indicating that

drought awareness positively influences individuals' proactive response to drought hazards (Switzer & Vedlitz, 2017). The involvement of social networks, such as family and friends, is crucial for increasing drought awareness and promoting conservation behaviors. To address the negative impacts of drought, it is imperative to enhance community awareness of drought risk, encourage the adoption of water-saving planting practices, and promote sustainable use of water resources (H. Guo et al., 2022). Additionally, effective communication can improve public awareness in Ireland (Antwi et al., 2022).

Furthermore, the study findings indicate that a considerable percentage of respondents experience social effects (46.63%), while the majority (95.70%) suffer economic impacts due to drought hazards. Droughts have complex, multidimensional economic consequences, affecting sectors such as agriculture, industry, energy, tourism, and human health (Ding et al., 2011). Economic analysis is crucial in understanding the regional variations and severity-dependent impacts of drought. It provides policymakers with valuable information to inform decisions, considering the direct and indirect effects on consumer behavior and market dynamics (Freire-gonzález et al., 2017).

The correlation coefficient of -0.117 suggests a weak negative correlation between community Awareness and drought economic impacts. This means that there is a small tendency for higher levels of community Awareness to be associated with slightly lower levels of drought economic impacts. Furthermore, the correlation coefficient of 0.022 indicates a very weak positive correlation between community Awareness and drought's Social impacts.

This implies that there is a minimal tendency for higher levels of community Awareness to be associated with slightly higher levels of drought's Social impacts, or vice versa. Moreover, the correlation coefficient of 0.289 indicates a moderate positive correlation between drought's Economic and Social impacts. This suggests that as the economic impacts of the drought increase, the social impacts tend to increase to a greater extent (see Table 5).

Table 7*. Correlations*

Variables	Awareness	Economic Impacts	Social Impacts
Awareness	1	-.117	.022
Economic		1	.289
Social			1

Conclusion

This research assessed the socio-economic impacts of drought in the Gaghori District of the Ghazni Province. The level of public awareness among residents regarding the risks posed by the drought has also been examined. The research was carried out using a quantitative research approach, based on a questionnaire. According to the study's results, 84% of respondents are aware of the risks associated with drought, its consequences, and the variables that trigger it. In addition, 82 percent of respondents have experienced the social impacts of drought, including the spread of disease, migration, and increased conflicts over water resources. In addition, 97 percent of citizens were economically devastated by the risks posed by drought, given that 70 percent of Afghans are engaged in the agricultural sector. People are more economically than socially affected by drought. This is because agriculture is the primary source of income and livelihood for the majority of the population. Agriculture, on the other hand, contributes 24 percent to Afghanistan's national economic growth. It has been discovered that agriculture is the primary source of economic activity for the local people, who are vulnerable to the risks posed by drought. This study reveals a weak negative correlation between community awareness and the economic impacts of drought. Furthermore, a very weak positive correlation is found between community awareness and drought's social impacts, indicating a minimal association with slightly higher social consequences. Additionally, a moderate positive correlation is observed between drought's economic and social impacts, suggesting that worsening economic effects tend to amplify social impacts.

Given the significant social and economic impacts of the drought in the Gaghori district of Ghazni province, it is recommended that communities, local governments, and non-governmental organizations work together to

highlight appropriate measures and drought adaptation strategies to reduce their impacts. This is because these impacts have been caused by the drought. In addition, there is a compelling need for further research on drought risk assessment and monitoring to enhance preparedness, based on research that identifies a practical strategy to apply in the study area.

Author Contributions

Mohammad Rafiq Mangal conceptualized the study, designed the methodology, conducted data collection, and prepared the original draft of the manuscript. Hayatullah Mushwani contributed to data analysis, result interpretation, and manuscript revision. Abidullah Arabzai supported questionnaire design, validation, and literature review. Hayat Ullah provided technical guidance, methodological support, and a critical review of the manuscript. All authors read and approved the final manuscript.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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