Bi-Annual Research Journal "BALOCHISTAN REVIEW" ISSN 1810-2174 Balochistan Study Centre, University of Balochistan, Quetta (Pakistan) VOL. XXXVI NO. 1, 2017

Socio-economic Impacts of Drought in Nushki District, Balochistan

Social Sciences and Humanities

Tehmoor Rehman[1], Dr. Syed Ainuddin[2] & Shabana Faiz[3]

Abstract

Drought is a recurrent phenomenon in Balochistan and has affected every sector of life. One of the most affected and more prone to drought is Nushki district where persistent drought has affected people severally. This study has been carried out to assess socio-economic impacts of drought in Nushki district, Balochistan. For this study both primary and secondary data were used. Questionnaire was the main tool used for data collection. Research results illustrated that drought has socio-economically affected people. Agriculture production has declined and cultivated areas are damaged. Livestock are malnourished and many have perished. Children and women are more vulnerable and lack of water for human use. To assess the magnitude of the situation, it is suggested that a detailed survey needs to be conducted for drought management and mitigation.

Key words: Drought, Socio-economic, Livelihood, Nushki, Balochistan

1. Introduction

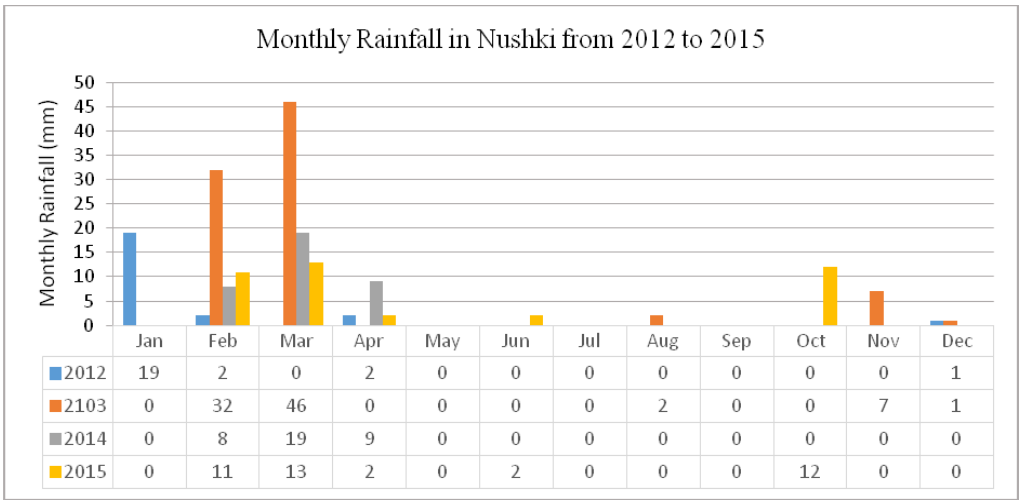
Disasters adversely affect ecosystems and human populations. When a hazard affects vulnerable population, it causes a disaster, which can cause damage and casualties to community (Anjum et al., 2012). Among natural hazards, drought is one of the significant threats to people's livelihood and socio-economic development of community. Every year, drought affect tens of millions of people, as well as play a role to starvation and famine among millions of people (UNISDR, 2007). Drought is considered to be the most complex but least understood of all-natural hazards, affecting more people

[1] M.Phil. Scholar, Department of Geography, University of Balochistan, Quetta.
[2] Research Supervisor and Chairperson, Department of Disaster Management & Development Studies, University of Balochistan, Quetta.
[3] Lecturer, Department of Pakistan Studies, SBK Women's University, Quetta.

than any other hazard (Hagman, 1984). Drought has greater impacts on people as compare to other natural disasters because almost all aspects of society can be affected by drought. Drought's occurrence is unavoidable as it is a normal feature of climate (Wilhite, 2000).

Drought is a creeping phenomenon (Wilhite & Glantz, 1985) and may have a number of social, economic and environmental impacts (UNDP, 2012). A few areas are more prone to drought, and each nation has its own ability to effectively plan for and counter to the impacts of drought. Consequently, the quantity of individuals which are influenced by drought will differ by region alongside effects of drought (UNISDR, 2007).

The climate of Pakistan is arid and hyper-arid in lower southern half. Some areas remain very dry and are continuously vulnerable to drought. Due to its hyper-arid climate, Balochistan suffers frequently from drought. The continued drought, especially in Balochistan, has completely crushed the nourishment security of countless. (Anjum et al., 2010). Balochistan is among the most drought-prone areas of Pakistan where harsh drought events have been recorded in 1967-1969, 1971, 1973-1975, 1994, 1998-2002, and 2009-2015 (UNDP, 2015). Repetitive drought is one of the main challenges faced by Balochistan. Nushki is one of the worst-affected areas, which had not seen any drizzle for years. (Anjum et al., 2012). Agriculture and livestock are main source of livelihoods of people in Nushki district. The area is already deprived of many services and when rainfall is below than average, this will increase their miseries (UNDP, 2015). This research study is an effort to understand the socio-economic impacts of drought in Nushki district.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	19	2	0	2	0	0	0	0	0	0	0	1
2103	0	32	46	0	0	0	0	2	0	0	7	1
2014	0	8	19	9	0	0	0	0	0	0	0	0
2015	0	11	13	2	0	2	0	0	0	12	0	0

Figure 1: Monthly rainfall in Nushki District from 2012-2015

(Source: Pakistan Meteorological Department, 2016)

2. Study Area and Methodology

District Nushki is an administrative district of Balochistan and lies in south-west of Quetta. Geographically it lies between 65°07'42"- 66°18'45" East longitudes and 29°01'51"-29°52'37"North latitudes. Administratively it is divided into ten union councils and it has an area of 5,797 square kilometers.

The study employs both qualitative and quantitative methodologies, where both the primary as well as secondary data and information were collected. For primary data collection different means were used, namely, household questionnaire survey, interviews of key informants and field observations. While for collection of secondary data published research journals articles, books, analysis of government and NGOs annual reports and policy documents were used to get information.

Multistage sampling technique was used to collect data. Four most affected union councils Ahmed Wal, Anam Bostan, Daak and Kishingi were selected for the household survey. Proportionate stratified sampling technique was used to select 198 samples from the selected union councils. Villages were selected through Purposive sampling technique and at the last stage household were selected by random sampling technique. Location of sampled villages are shown in the figure below.

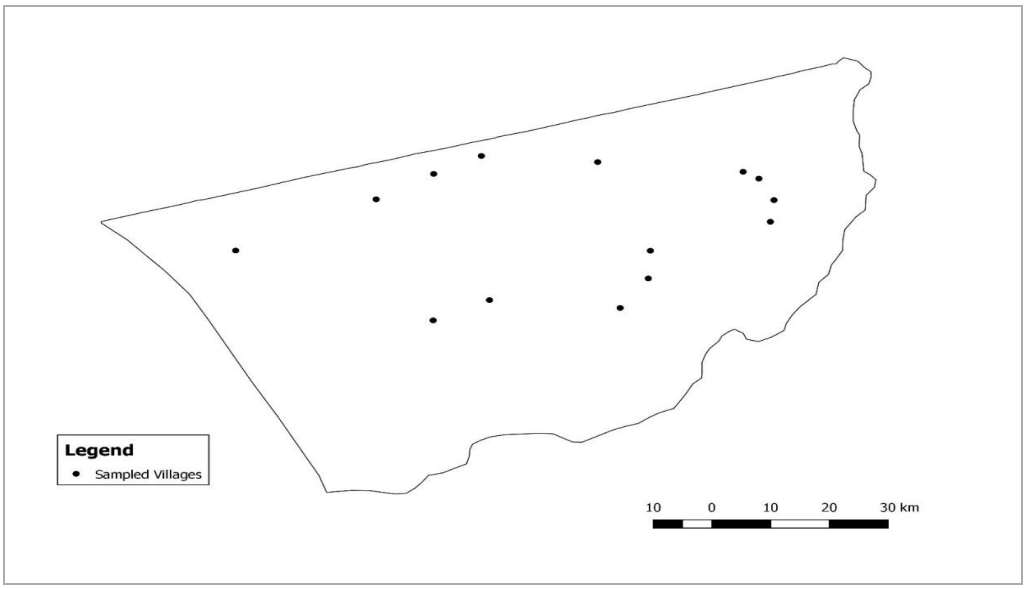


Figure 2: Location of sampled villages

3. Socio-economic Characteristics of Respondent Households

For analysis of socio-economic impacts of drought, 198 household respondents were interviewed from four most affected union councils of Nushki district. Salient characteristics of respondents are given in the table below.

Table 1: Respondents Profile

		Frequency	Percent
Age	≤ 40	33	16.6
	41-50	85	43
	51-60	39	19.7
	> 60	41	20.7
	Total	198	100
Literacy level	Illiterate	63	31.8
	Primary school	53	26.8
	High school	39	18.2
	College/University	46	23.2
	Total	198	100

Majority of households depend on agriculture and livestock of their livelihood. Figure below shows occupational structure of households.

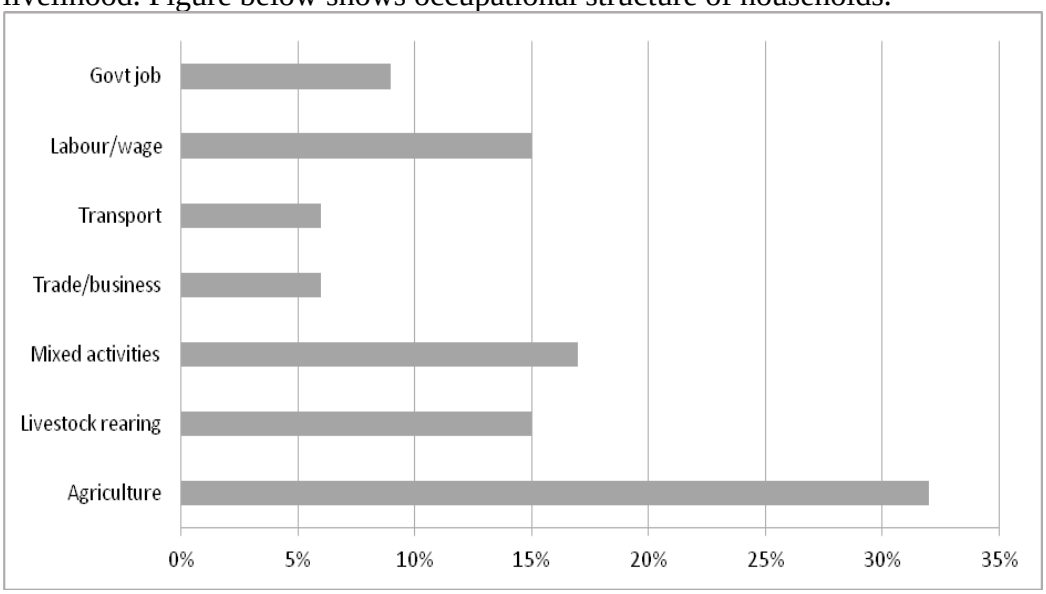


Figure 3: Occupation of respondent households

4. Socio-economic Impacts of Drought

With most of households depending on agriculture and livestock for their source of income, reduction in rainfall has affected their livelihood and socio-economically affected them. Socio-economic impacts of drought are discussed below.

4.1 Agriculture

Agriculture in Nushki district still largely depends on rainfall despite growing number of tube wells. Almost all of union council Anam Bostan and Daak are rain-fed areas. Whereas in Kishingi and Ahmed Wal union councils tube wells, karazes and rain water are source of agriculture, where most of karazes are now dried due to drought. Farmers in Daak plains totally depend on rain for their agriculture. Drought affected the area significantly, the effects include damaged to cultivated areas and reduction in crop yields. Truly, extreme deficiency of food-grains had been knowledgeable about the area amid past droughts (UNDP, 2015). This reduction in agricultural production may continue to further effect household incomes and fodder for livestock. Cultivated areas in different union councils are damaged and in rain-fed areas almost no agriculture is possible.

Wheat and barley production has significantly reduced due to less rainfall. Farm incomes have been reduced due to reduced crop yields. 67.2% respondents were in view that revenue from agricultural products has been reduced.

Table 2: Revenue decline of Agricultural products

Revenue decline of agricultural products	Percentage
Yes	67.2%
No	20.2%
Undecided	12.6%

Source: Primary Data, 2016

4.2 Livestock

The rural community of Balochistan for the most part relies on domesticated animals that normally include sheep and goat (UNDP, 2015). Drought has badly affected Livestock health in Nushki district because due to drought grazing opportunities has been reduced. Further there is less water for livestock in this arid area, particularly in rain-fed areas. This resulted in revenue decline of livestock production and loss of livestock.

Table 3: Revenue Decline of Livestock Production

Revenue decline of livestock production	Percentage
Yes	68.5%
No	28%
Undecided	3.5%

Source: Primary Data, 2016

According to research results, 20% animals have been perished. Whereas a survey was conducted by UNDP (2015) in Nushki district, and according to which mortality rate recorded in livestock population is around 30%.

People have sold their animals as they had no other option because persistent drought in the area has cause damage to rangelands and no water, especially in rain-fed areas where earthen ponds (*Nawars*) are almost totally dried. Poor health of livestock also affected market prices and people sell their animals at throw away prices. Camel price has dropped to 40% and small ruminants (sheep/goats) has reduced to 28%.

4.3 Income losses

As most of rural households depend on agriculture and livestock as their source of income so that recent drought has affected household income. Effects of drought cannot be felt only on agricultural households but it has affected all sectors and thus reduced income levels. Because agriculture and livestock are backbone of the economy of the district. When asked about income loss, 70% respondents reported income loss while average household income loss was 22%.

Table 4: Reduction in Household Income

Reduction in household income	Percentage
Yes	70%
No	30%

Source: Primary Data, 2016

4.4 Effects on Health and Nutritional Status

Drought has seriously affected the health status of the people. Eye infection, skin diseases, gastro and diarrhea among children were common reported incidences. Most of respondents specified tuberculosis as medical issue because of drought. According to health officials, increase rate of illnesses has been reported related to water and malnutrition. Poor quality of drinking water in rain-fed areas has caused gastro and diarrhea among children. 73% respondents were of the view that health status of their family members declined due to drought.

Table 5: Drought effect on health

Drought effect on health	Percentage
Yes	73%
No	27%

Source: Primary Data, 2016

As mentioned earlier, decline in milk production and milk products caused malnutrition in children. According to World Food Programme (2014), Nushki is highly food insecure.

4.5 Impacts on Women and Children

In drought affected areas, every population class has been affected. Though, due to their socio-cultural and economic positioning, women are awfully affected by drought. The study comes about demonstrate that women and children are most vulnerable to drought. Due to poor nutrition and poor sanitation they become more susceptible to diseases.

Women fetch water from longer distances in rain-fed areas as water sources in the villages are dried due to drought. Apart from gathering water for domestic use women also do other works such as harvesting and livestock feeding. Drought has increased their miseries and thus affected them severally.

4.6 Migration

Lack of water and fodder and grazing opportunities in rangelands is forcing people to migrate to irrigated areas. From research results it was found that in rain-fed areas, 20% respondent households' family member have migrated due to drought. The failure of rains and scarcity of water was described as the primary reason for migration. Loss of employment, search for alternate employment opportunities, lack of pasture for livestock and food scarcity were the other important reasons for migrating to other areas.

4.7 Lack of Water for Human Use

One of the serious limiting factor in arid desert environment of Nushki is water (Jamali, 2006). As water sources have dried because of drought, people suffered heavily especially in rain-fed areas. 56.6% respondents reported that there is lack of water for human use. It is also important to know that in rain-fed villages of union council Daak and Anam Bostan more than 80% respondents said that they are facing water deficiency for daily usage.

Table 6: Lack of water for human use

Lack of water for human use	Percent response
Yes	56.6%
No	43.4%

Source: Primary Data, 2016

5.8 Disturbing Schooling of Children

As drought caused loss of household income and other social facilities this in turn resulted in affecting education of children. Drought has negative effect on the education of children. When asked about drought effect on child education, 59.6% respondents indicated that the education of their children was not affected while 40.4% indicated that it was affected.

Table 7: Drought effect on schooling of children

Drought effect on children education	Percentage
Education affected	40.4%
Education not affected	59.6%

Source: Primary Data, 2016

4.9 Decrease in Recreational Activities

Drought has caused frustration and anxiety among local population and decreased recreational activities. Due to loss of livelihoods people are seeking alternate source of income and engaged in daily wages and labour work. This all created a situation where opportunities for enjoyment are less. It is interesting to note that 76.8% respondents indicated that recreational activities have been decreased due to drought.

Table 8: Decrease in Recreational Activities due to Drought

Decrease in recreational activities	Percentage
Yes	76.8%
No	20.2%
Undecided	3%

Source: Primary Data, 2016

5. Conclusion

One of the most important disaster, affecting socio-economic condition of community, is drought. Drought is common feature in Balochistan and one of the most affected district is Nushki. Drought has caused considerable social and economic effects and threatened the livelihoods of inhabitants in the area. Cultivated areas are damaged and production is less. This has caused revenue decline from agriculture. Livestock are perished and revenue decline of livestock production has been reduced. In rain-fed areas, no farming activity is possible due to water deficiency for the last four years. This paper finds out that rain-fed areas are severally affected and people who depend on agriculture and livestock are more vulnerable as compare to those who has permanent source of income like those in government job. Based on the findings of the study, it is recommended that government should conduct an urgent detailed survey of the population so that to assess the magnitude of the situation and to respond accordingly.

References

Anjum, S. A., Wang, L. C., Salhab, J., Khan, I., & Saleem, M. (2010). An assessment of drought extent and impacts in agriculture sector in Pakistan. *Journal of Food, Agriculture & Environment, 8*(3&4), 1359-1363.

Anjum, S. A., Saleem, M. F., Cheema, M., Bilal, M., & Khaliq, T. (2012). An assessment to vulnerability, extent, characteristics and severity of drought hazard in Pakistan. *Pakistan Journal of Science*, *64*(2), 138-143.

Hagman, G. (1984). *Prevention Better than Cure: Report on Human and Natural Disasters in the Third World.* Swedish Red Cross, Stockholm.

Jamali, H. (2006). *Drought coping strategies in Nushki District, Pakistan and their policy implications.* University of Victoria.

UNDP. (2012). *Drought risk management: Practitioner's perspectives from Africa and Asia.* United Nations Development Programme, New York

UNDP. (2015). *Drought risk assessment in province of Balochistan, Pakistan.* United Nations Development Programme. Retrieved from http://www.pk.undp.org/content/pakistan/en/home/library/crises_prevention_and_recovery/drought-risk-assessment-in-balochistan-province-pakistan.html

UNISDR. (2007). *Drought risk reduction framework and practices: Contributing to the implementation of the Hyogo Framework for Action.* Geneva: United Nations secretariat of the International Strategy for Disaster Reduction.

WFP (2014). *Pakistan Food Security Bulletin, issue 2 December*. World Food Progeamme

Wilhite, D. A. (2000). Drought as a Natural Hazard: Concepts and definitions. In D. A. Wilhite (Ed.), *Drought: A Global Assessment* (Vol. 1, pp. 3-18). London, UK: Routledge Publishers.

Wilhite, D. A., & Glantz, M. H. (1985). Understanding the drought phenomenon: The role of definitions. *Water International, 10*(3), 111-120.