

Sindh Drought 2014 – Pakistan: Was It a Natural or a Man-Made Disaster

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Abstract

Since start of this century Pakistan is experiencing a drastic surge in the frequency and intensity of both natural and manmade disasters causing enormous losses to human and animal life, adversely affecting the social and psychological fiber of society, badly damaging property, infrastructure, services and environment thus setting back the development and increasing the poverty levels. Droughts are the most frequented natural disasters causing wide spread devastation in the province of Sindh in Pakistan. District Thar was struck by drought in February 2014, which caused over 167 fatalities. Thar is the eight largest desert of the world and biggest desert of Pakistan. District Thar is declared most food insecure regions of Pakistan by World Food Programme. The paper is based on secondary data, extracted through extensive review of newspapers, magazines, and research articles. Primary data was obtained through conducting interviews people involved in relief operations. The study has concluded that Sindh drought-2014 in Pakistan was caused by famine like situation due to lack of precipitation for a prolonged duration in the Thar Desert. Low average annual rainfall is a common and a regular phenomenon being experienced in the region and drought like situation develops almost every year. However the extra ordinary destruction caused by the drought in 2014, were due to sheer negligence of administrative authorities and Sindh government. The study recommends construction of small water reservoirs, wide spread plantation of trees in the country and preparation of comprehensive drought management strategy.

Keywords

Disasters, Natural Disasters, Man-Made Disasters, Floods, Pakistan

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1. Introduction

The magnitude and frequency of man-made and natural disasters have amplified significantly since the beginning of the third millennium resulting in substantial losses to human/ animal life, infrastructure and environment further reversing back the economic growth and raising the poverty levels. Asian Disaster Reduction Center defines disaster as “*A serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope on its own resources.*” [1]. The above referred definition describes disasters by what they do to the human beings. People in the

earlier period believed that natural hazards like droughts, epidemics, hurricanes, floods and earthquakes were mandated by Gods, but now the scientists argue that these catastrophes are not the Act of Nature or Act of God, rather they are induced by the Acts of humans [2]. In the aftermath of recent disasters in last decade, mostly the causes are attributed to some human action. Supreme Court of Pakistan took suo moto notice on the number of deaths caused by the drought in February 2014 in district Tharparker of Sindh. Drought refers to the state of dryness caused by prolonged lack of precipitation. Drought in simple words is defined as a

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sustained period of unusual low precipitation, resulting into absence of water. Although the phenomenon of drought is a less frequented natural hazard in Pakistan yet it has caused considerable number of losses in terms of human and animal lives. Droughts mostly affects the southern parts of Pakistan. Decline in precipitation is a main characteristic of drought [3]. Reduced rainfall for a prolonged timeframe result in water deficiency thus disrupting natural ecosystem and human activities. Two distinct seasons cause rainfall in Pakistan i.e. winter rains from December to March and monsoon rains from June to September. If there is no precipitation or average rainfall is low in these two seasons, the chances of drought conditions amplify in Southern Punjab, Sindh, and Balochistan during these periods. A drought can prevail for months or years. Researchers have divided droughts in following seven different types basing on their socio economic impacts and physical characteristics.

- Metrological droughts caused by insufficient and mal distribution of precipitation.
- Hydrological droughts resulting from low stream flow and drying up of water reservoirs.
- Soil moisture drought caused by insufficient level of moisture in the soil which does not facilitate plant growth mostly in rain fed regions.
- Agricultural droughts causing collapse of crops due to insufficient water supply.
- Socio Economic drought causing food and social insecurity due to crop failure and income loss.
- Ecological drought caused due to alarming decline in the productivity of natural eco system.
- Famines are caused by large scale collapse of access to food, further leading to starvation of population without timely intervention.

Droughts are referred to as creeping disasters and can be predicted well in time and accurately in the presence of reliable early warning system based on advanced technology. Pakistan Meteorological department is the agency responsible for forecasting and early-warning.

The aim of this paper is to investigate the causes of Sindh drought 2014 and ascertain whether it was a natural disaster or a manmade disaster.

2. Overview of Droughts in Pakistan

Pakistan is situated in South Asia and positioned between Latitudes of 240N and 370N and Longitudes of 620E and

750E, bordering Afghanistan and Iran to the west, Arabian sea in the South, India to the east and China to the north. The country comprises of 796,095 sq km of land area and is geologically divided into three distinct zones, the Balochistan plateau, Indus river plains and the northern highlands. The land of diverse climatic variations and great topography, Pakistan is blessed with forests, plains, deserts, Karakoram Range having world's highest mountains in the north, and 650 miles of coastline along Arabian Sea in the south. Estimated population of Pakistan in 2010 was 177,276,594, which is sixth largest population in the world.

Pakistan has experienced total of three droughts of severe intensity since its inception. Mostly the southern part of Pakistan comprising Sindh and Baluchistan provinces is affected by droughts when the annual precipitation is low or there is no rainfall at all in affected areas. Drought in 2000 was the worst ever drought in the history of Pakistan in terms of the duration, population and area affected. Although it started off in 1998 due to development of El-Nino gaining intensity by year 2000 and gradually subsiding in year 2002. Baluchistan was the worst hit province where over 100 deaths were recorded due to dehydration, thousands of animals perished and over 1.2 million people were affected. Noshki a town bordering Afghanistan which did not had rain for five years was the worst hit town. In March 2001 the drought caused by the same El-Nino started affecting the impoverished people of Sindh gradually gaining the intensity and resulted in mass migration of over 60% of the population. Over 100 deaths were reported due to water shortage and dehydration; thousands of animals were also starved to death.

In 2014 a severe intensity drought again struck the southeastern part of Pakistan comprising of Sindh province. Sindh spread over 88071.25 sq miles and can be longitudinally distributed into three distinct regions; Hilly tract in west comprising of 14375 sq miles, is known as Kohistan; the central fertile portion along Indus river stretched over 14375 sq miles is known as Nara and the Thar Desert region in the East stretched over 13750 sq miles. District Tharparker comprising of 2400 villages located in Thar Desert region is considered the most backward areas of Pakistan. Thar Desert is the eight largest desert of the world and the biggest desert of Pakistan. Impoverished people of this district were devastated by an intense drought which resulted in over 167 deaths due to dehydration, malnutrition, and spread of diseases like diarrhea, dysentery and Malaria. Huge numbers of people were also affected by skin diseases, Eye infection, ARI and other diseases. Detail of the three major droughts is given in the table-1 below.

Table 1. The various drought events in Pakistan

Year	Affected Province	District / Location	Deaths	People Affected	Livestock Perished
2000	Sindh, Baluchistan	Qila Saifullah, Zhob, Loralai, Pishin, Khuzdar, Kharan	127	2,200,000	30,000
2001	Sindh, Baluchistan	Thar, Cholistan, Dera Ghazi Khan, Tharparkar, Kohistan, Dadu, Chagai, Kharan, Lasbella and Awaran	100		
2014	Sindh	Mithi, Chachro, Dahli, Diplo, Islamkot, and Nargarparkar	166*		15,000
Total			393	2,200,000	45,000

*including 99 children

3. Methodology

The paper is primarily based on secondary data, extracted through extensive review of newspapers, magazines, web articles, reports generated by various national and international agencies working in the field and already published research on the subject. Primary data was obtained through conducting interviews of affected people and people involved in relief operations, the data collected helped in identifying the actual causes of devastating effects of floods.

4. Causes of Drought and Analysis

Pakistan experiences two well defined seasons of rain in a year i.e. from July to September is the monsoon and from December to March is the western depressions, however thunderstorms and local convections also causes small amount of precipitation in the intervening timeframe.

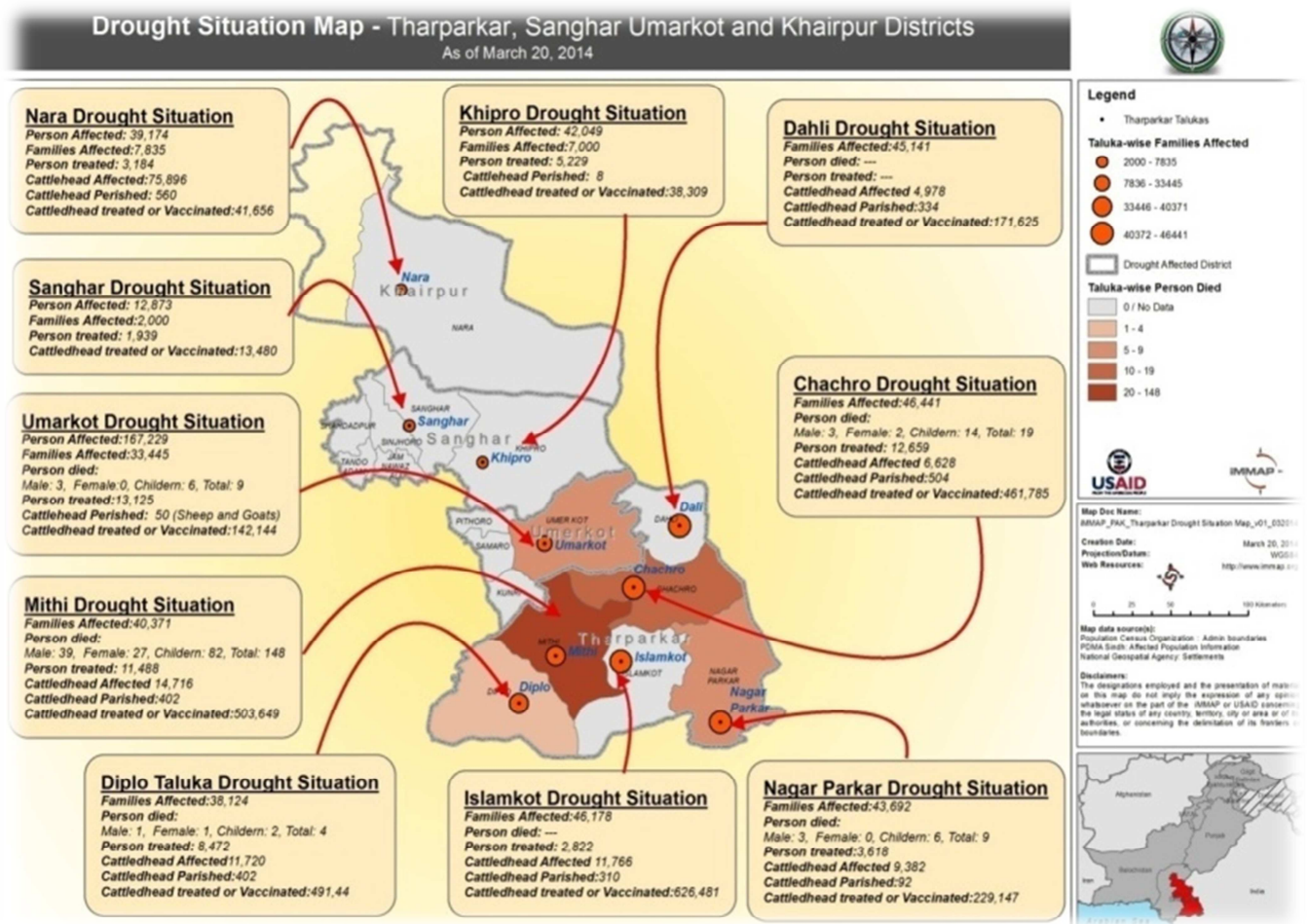


Fig 2. Google map of various drought location of Pakistan

4.1. Natural Causes

Most of the scientists agree that the droughts occur when the average rainfall in a particular region is *below average*[7]. Most parts of Tharparker did not receive rains in 2013 resulting into famine like situation. The district was declared as calamity affected area in February 2014 by the Sindh relief department due to rising number of human and animal fatalities. Survival of maximum population consisting of nomads solely depends on rain water to feed their animals and agriculture.

4.2. Lack of Early Warning

Lack of rains in the monsoon season significantly lowered the subsurface water level. Even drought of negligible intensity adversely affects the impoverished communities in terms of livestock fatalities and crop failure. Scientists have recommended development of a Global Drought Information System, which will result in development of maps pinpointing the figures regarding decline in monthly precipitation all over the world [8]. The term creeping disaster is often used for the phenomenon of droughts, as the adverse effects of droughts mount up over a significantly longer time frame.

4.3. Failure of Administration

No early warning was issued prior to 2014 droughts, although it is a fact that the affected region did not receive the rain fall in 2013 yet the administration and the Sindh government miserably failed act in time. If the Sindh government would have taken timely mitigation measures the losses could have been considerably reduced. Most National newspaper held responsible the absence of adequate facilities, resources and criminal negligence of the selected top level district administration officers that consumed 167 innocent lives. When the fatalities were at the peak the government posted 24 doctors to the affected area only eight reported. In one instance Commissioner of Mirpurkhas Sindh stated that due to non-availability of funds 60,000 bags of wheat could not be distributed among the impoverished masses [9,10].

4.4. Height of Non Seriousness at Provincial Government Level

The Indifferent approach of the ruling elite of Sind to rescue the impoverished citizens from the catastrophic effects of drought can be ascertained from the fact that on one side the people of Thar were dying of malnutrition, dehydration and diseases and on the other hand the government of Sind was spending millions of rupees on celebration the Sind Cultural

week. The politicians elected from this starved constituency donot allow any development in the area which may raise the cost of the votes in elections, which is normally the price of one or two time meals.

4.5. Deep Rooted Corruption

Most of the deaths reported were due to malnutrition and dehydration, although wheat was abundantly stored in the warehouses being controlled of the mighty influential, yet the people were dying. When a senior civil judge raided a warehouse, he was told that only 200 bags were present, but during the physical search 600 bags of wheat were recovered. Even after much of media hype when the affected area started receiving the aid supplies the local administration and elected legislature tried to resist [11].

4.6. Lack of Facilities and Resources

Due to absence of development work there was no proper hospital or medical care facility in the area, which could have helped in timely provision of medical treatment. Lack of such facilities, staff, medicines and ambulance services aggravated the situation.

4.7. Lack of Structural Development and Mitigation Measures

Although most part of Thar Desert is located in India but the population in that part did not felt the brunt of drought because of proper structural mitigation measures were adopted well in time [12]. Absence of water catchment areas, deep water pumping stations and storing capacity, maintenance of food security and special programs for livestock survival resulted in the wide spread losses.

5. Conclusion

It appears from the study that Sindh drought in 2014, were caused by prolonged lack of rainfall. Low average annual rainfall is a common and a regular phenomenon being experienced in the region and drought like situation develops almost every year. However the unprecedented devastation caused by the drought in 2014, were due to sheer negligence of administrative authorities and Sindh government. Following recommendations are proffered to avoid repetition of such events in future.

- Development of comprehensive drought management strategies.
- Development of early warning system and timely mitigation measures
- Construct small large water reservoirs.

- Extensive reforestation be carried out.

References

- [1] Asian Disaster Reduction Center, 2003. "Glossary on natural disasters", available at: www.adrc.org.
- [2] Quarantelli E L, 2001. Disaster planning emergency management and civil protection: the historical development of organized efforts to plan for and to respond to disasters unpublished manuscript held at Research Center University of Delaware, Newark DE.
- [3] Beran M. A. and Rodier J.A., 1985: Hydrological aspects of drought. Studies and Reports in Hydrology 39. UNESCO-WMO.
- [4] Agnew CT., 1989: Sahel drought, meteorological or agricultural? International Journal of Climatology 9: 371-382.
- [5] The United Nations office for Disaster Risk Reduction, "Terminology on DRR", available at: www.unisdr.org/we/inform/terminology.
- [6] Shaluf, 2007. Disaster Prevention and Management, Vol 16 No 5. Pp.704-717.
- [7] M.P. Applewhite, L.S. Standage, C.D. Thomas. (1997). The Army Dietitian's Role in Humanitarian Assistance. *Journal of the American Dietetic Association, Volume 97, Issue 9, Supplement, September 1997, Page A87*
- [8] Edward A. Downing. (1994). Force provider: An emergency response system. *Desalination, Volume 99, Issues 2-3, Pages 409-421*
- [9] S. Hassan, M. Murtaza. (2012). Malaria, dynamic epidemiology in flood affected area of District Muzafar Garh, Punjab, Pakistan in 2010. *International Journal of Infectious Diseases, Volume 16, Supplement 1, Page346*
- [10] Bruins H.J. and Berliner, P.R., 1998: Biocimatic aridity, climatic variability, drought and desertification: Definitions and management options. In: Bruins H.J. and Lithwick (eds), *The Arid Frontier*. Kluwer Academic Publishers, Dordrecht, pp. 97-116.
- [11] Bettio,L.,Nunez,L.,vanBeek,R.,Bierkens,M.,GoncalvesdeGoncalves,L.,Zellde
- [12] Mattos,J.,Lawford,R.,2013.Towardglobaldroughtearlywarning capability: expandinginternationalcooperationforthedevelopmentofaframeworkfor monitoringandforecasting.Bull.Am.Meteorol.Soc.94,776–785.