

EXTENDED ABSTRACT

LIVING WITH DROUGHT: A SOCIOLOGICAL ANALYSIS

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Abstract

Drought is one of the challenges because of climate change in Sri Lanka. This study is to identify the socio-economic impacts of the drought. It makes use of secondary data collection techniques as well as thematic analysis. The findings of the research mainly focused on social, economic, environmental and psychosocial impacts of drought in the society. Such as: affected farmers in the drought period, loss of quality of land, searching for water for farming, increasing suicide rates, poverty, increasing demands on government aid programmes and community impacts, impact on children's education, microfinance and other bank loans, depression, stress, stigma, and psychosocial issues worsen their values and status, late marriages, chronic kidney diseases, water needs negatively impact on women. Therefore, a sustainable development process, and a change from a tradition of responding to a culture of resilience, should be commenced to implement mitigation programmes that would reduce these climate change impacts.

Keywords: Drought, climate change, impacts, socio-economic, farmers

1. Introduction

In today's world of technology, climate change is a major challenge. Climate is the generalization of a set of atmospheric conditions that occur over a period of time over a given area (Balachandran S, 1998). "Climate change is the most obvious, observable change in the structure of the global atmosphere caused by direct or indirect actions of man" (United Nations Framework, 1990). In comparison to 1880 AD, the current average temperature has increased by one degree Celsius. Global warming is defined as a rise in the earth's average temperature. Global warming has resulted in several natural calamities. Drought is a major calamity caused primarily by human activity.

Drought is defined in detail as the precipitation that is normally available over a period of time does not occur. Natural disasters are generally the most unusual and unpredictable events in the world. But drought is not like that. This is a gradual transition (Istiqar M.A.M, 2013). Significant dehydration occurs when continuous deficient rainfall results in dehydration crop failure, declining outdoor water levels, depletion of lakes, groundwater levels, and soil moisture depletion. Changes in temperature and rainfall are caused by natural factors and human activities. Drought conditions are caused by declining rainfall and changing seasons when rainfall is available and rising temperatures. Drought is one of the most important natural disasters in the North as a dry zone today.

The North, North-central, South-eastern, and North-western parts of the country are the most exposed to drought. This is due primarily to low rainfall. Serious droughts used to occur every 3-4 years, and a severe drought of national significance every 10 years or so (DMC, 2005); now there are

more droughts, and of greater severity (Aadharand Mishra,2017). Climate change has led to longer periods of consecutive days without rain (Filho, 2013).

2. Objective of the research

Main objective of this study is to identify the socio-economic impacts of drought on farmers. The sub objectives of the research are to examine the reasons behind drought in Sri Lanka and to explore the direct and indirect impacts of drought on farmers.

3. Research methodology

The Northern Province of Sri Lanka is the subject of this study. Secondary data was collected for this investigation. In this investigation, ten different literatures were used. Thematic analysis was used to examine it.

4. Findings and discussion

Drought is a major natural disaster. It can have a negative impact on socio-economic status. Prolonged drought leads to famine and poverty. Further dehydration and instability of development are caused by drought. Furthermore, the country's national income and per capita income, as expected by the government, are declining due to the drought (Sector Vulnerability Profile: Agriculture and Fisheries, 2010).

Poverty is the main impact to the farmers when they experience drought. Poverty, restrained both in terms of monetary and non-monetary dimensions, continues in Sri Lanka (Joshi, 2011). Also, poverty as "a deprivation of essential assets and opportunities to which every human is entitled" (Asian Development Bank, 2018). According to the government data, four out of five districts in the North coped poorly. Mullaitivu is 28.8%, Kilinochchi is 12.7%, Jaffna is 8.3% and Mannar is 20.1% of higher poverty data recorded (Perera A, 2014). The vast majority of the residents in these districts are post war resettled people. As well as being primarily a rural province over half of the people depend on agriculturally based income. In addition to that, in Kilinochchi district 74,000 people and in the Mullaitivu district over 56,000 people are severely affected by the drought and above 100,000 farmers are facing challenges of the inadequate rainfall.

When it comes to the suicide rate in Sri Lanka, men (22.9 per 100,000) have a greater rate than women (6.3 per 100,000), and the Northern Province has a higher incidence of suicide. The suicide rate in Kilinochchi was the highest (32.8 per 100,000) (Duleeka W.K, 2017). Studies have shown that farmers have the highest rate because of many reasons behind. Such as, drought causes rigid hardship to poor farmers, dry weather pushes them to loan, increase micro finance and low income annually. Women face big challenges in climate change. From sinking islands to drought in the global warming crisis. The reason behind this is gender inequality. In the North, women are the breadwinner of their family and caregivers. They play traditional roles within their family and community. They are prominent to give fuel and food therefore, they affect drought. Generally, women are change makers. They are uniquely situated to be agents of change, to help find ways to mitigate the causes of global warming and to adapt to its impacts on the ground level.

Due to a combination of political, geographic, and social factors, Sri Lanka is recognized as vulnerable to climate change impacts, ranked 100th out of 181 countries in the world. Source from Notre Dame Global Adaptation Initiative Country Index (ND-GAIN Index, 2017). There are five types of droughts, these are: meteorological, hydrological, agricultural, ecological and socio-economic drought. There are two primary types of droughts that may affect in the North, Sri Lanka. These are:

1. Meteorological - usually associated with a precipitation deficit.
2. Hydrological - usually associated with a deficit in surface and subsurface water flow, potentially originating in the region's wider river basins.

Severe droughts in many parts of the world are expected to increase the world's desert areas by 7 percent by 2050, according to the IPCC. Rainfall in Jaffna Bay has been declining every year since the 1930s. It is said that the seasons change as wet, subtropical, intermittent, and drought, and such conditions result in the destruction of livestock farms and the transformation of agricultural lands into barren lands (Pratheeparajah N, 2007).

NARA reports that the salinity of the Nandi Sea is increasing due to the ongoing drought in the Mullaitivu district of Sri Lanka and that a large number of fish are dying due to declining oxygen levels in the water. Most of the drought victims are people living below the poverty line. Most of the people of Northern Province depend on agriculture. It is noteworthy that the poor are facing economic crisis as agricultural activities are facing major challenges due to the drought. (Climate Change Vulnerability Data Book, 2011).

Drought occurs when water is not available to the crop at the required time. Hence, affecting the yield. Thus, this study is important as it relates to the impact of drought on the agricultural land use that sustains the livelihood and trade of the people. Numerous croplands are affected each year by severe drought worldwide. Such conditions are rare in Sri Lanka. However, the recent drought has had an impact on agricultural activities in the North.

Paddy cultivation is carried out in two stages. Most are dependent on rainwater and the rest are dependent on irrigation. Paddy production has declined in 2009 compared to 2008. This is due to the post-monsoon rainfall and dehydration. Climate change is causing changes in groundwater, surface water levels, coastal areas, and land use. In areas of the Northern Province, the state of agriculture is a major problem due to the continuous drought (Climate Change Vulnerability Data Book, 2011).

Farmers face challenges in their livelihood to overcome from these agricultural major issues. For example, Vavuniya DS Division has paddy cultivation as the main activity, also occupying over 60% of the agricultural land. In 2004-2005 total paddy production in the Maha season was 47.5 million rupees but the Yala season limited production because of water shortage. It is included chili, onion, brinjal, urad bean, sea same seeds. Also, ponds fill up with soil is happened directly impact on the livestock, aquacultural and raw water fishing activities.

Also, in the Northern Province, which is dependent on the agrarian economy, animal husbandry is next to paddy cultivation. Extreme drought increases heat stress on livestock. Thus, reducing milk-based production. Drought increases water demand. Also, Drought and declining rainfall are affecting paddy and livestock and the production is declining. The Northern Province is experiencing severe drought. Also, Drought is causing sea levels to drop and other freshwater reservoirs to dry up. Thus, the living creatures in these waters and the endangered conditions are in critical conditions.

Most of the farmers in 11 villages in the Kilinochchi, Kandawala DS Division were engaged in paddy cultivation. It is said that about 2000 acres of paddy fields have been destroyed due to the continuous drought and the main reason for this is the unavailability of monsoon rains in a timely manner. Due to the continuous drought, the agricultural lands of the village of Tattuvankotti under the Kandawala Divisional Secretariat are said to be becoming saline and most of the lands are becoming barren. Therefore, lost their land quality, low income and its effect on the community.

When discussing the several unknown diseases affecting agricultural workers. CKD (chronic kidney disease) is the contemporary disease among the North farmers. Between 2009 and 2018, Mullaitivu has 12.5% and Vavuniya has 16.67% kidney disease patients of at least one member diagnosed with CKD who resided in the household. There is unknown etiology for this and also found the reason behind drinking water drawn from wells and use of pesticides with proteinuria nephropathy. Also, found protein-energy malnutrition, poor oral hygiene, and respiratory disease symptoms as some drought-related health issues. And, psychosocial problems emerged in the North.

Those are stress, anxiety, depression, fear, stigma, and various trauma.

5. Conclusion

The severe drought in Northern Sri Lanka has wreaked havoc on farmers, both directly and indirectly. Drought continues to be a problem for agricultural workers. Drought has a significant economic impact in the North, with annual and recurring crop losses, crop yield reductions, quality degradation of output, revenue loss, difficulties getting and repaying loans, and insufficiency of rice for consumption. Furthermore, because their livelihood is heavily reliant on agriculture and they rely on groundwater for household needs, these people are particularly vulnerable to drought in rural areas.

6. Recommendations

The implementation of mitigation programmes, the study of major river basins and reservoirs for drought management policy making, and the maintenance of a framework for preserving water resources are all suggested as part of the sustainable development process. It should be commenced from the individual persons and family that would be reduced these drought impacts.

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