

SPATIAL PATTERN OF DROUGHTS (2010 TO 2014) IN THE VANNI REGION OF SRI LANKA

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Introduction

Climatic Hazards are causing barriers in the development of the economic sectors of Sri Lanka especially in the agriculture sector. Much concern has been paid to the mitigation measures to reduce the climatic hazard impacts in Sri Lanka (Rajendram, 2005). Every year, government of Sri Lanka is spending large amount of money for the relief of the people who are affected by the climatic hazards (Piratheeparajah and Rajendram, 2014). Drought has made impacts in many places of Sri Lanka.

In Vanni region all the people are getting well now, after thirty years of the war. But still they have some problems in developing their economy. Drought has caused more impacts in Vanni region, every year, compared to other climatic hazards. Major economic activity of the Vanni people is agriculture (Planning Branch of Northern Provincial Council, 2012). More than 70% of the people are involved directly or indirectly in agricultural activities. Their life depends on the success of the agricultural activity. Fully or partially, annual or seasonal drought will make

many problems in the development of agricultural activities of Vanni region (Provincial Agriculture Department, 2013). In this situation this study is concerned with the spatial pattern of the seasonal drought in the Vanni region during the last five years.

Study area

The study area is Vanni region, which consists of four districts Kilinochchi, Mullaitivu, Mannar and Vavuniya. There are thirty-three divisional secretariat divisions and 912 grama niladhari divisions in this region. Total area of the Vanni area is 8884 sqkm and land area is 8290 sqkm. Population of the Vanni region is 1056762 in 2013.

Objective

The major objective of this study is to identify the spatial pattern of the drought impact in the Vanni region during the last four years from 2010 to 2014.

Methodology

Primary and secondary data were used to develop this study. Primary data was collected using interviews and field observation. 100 samples have been

collected from each district for the interviews. Unstructured questions were asked from the interviewees regarding the spatial pattern of drought. Direct observations also were carried out to observe the drought impact and the drought prone areas.

Secondary data was collected from District secretariats, Divisional Secretariats and District Disaster Management Units of every district.

GIS techniques have been used to analyze the data and to obtain spatial pattern of the drought in the Vanni region in 2012, 2013 and 2014. According to the primary and secondary data, drought affected areas have been mapped using Gridding Method of GIS

Results

Results have been obtained from the data analysis using GIS techniques. In the years of 2010, 2011, 2012, 2013 and 2014 there were drought in Northern Province of Sri Lanka. A severe drought occurred in the latter parts of the South West Monsoon Season (SWMS) in 2012 and 2013. This drought impact was felt in all the four districts of the study area. But in three years, drought impact was identified in the following areas. Special attentions need to be on these places, because during the last five years, following areas were affected by drought.

1 Drought Affected Areas in Mannar District from 2010 to 2014

In the Mannar district following areas were identified as most vulnerable areas to the drought. These are Vellankulam, Kalmadu, Moondampitti,

Iluppaikkadavai, Muthaliyankamam, Pampetti, Thikalai, Murungaipitti, karaveddi vembu, Kurunthankulam, Kannaddi, Kaddadi vayal, Kalliyadi, Aaththimoddi, Savirikkulam, Puthukkulam, Vidaththaltheevu, Pallamadu, Keeriththalvu, Paappamoddi, Periyamadu, Kandal, Salamapan, Vannakulam, Nedunkandal, Adkaddiveli, Adampan, Akaththikulam, Annamma kulam, Kompansainthakulam, Periyamurippu, Andankulam, Eliyankulam, Narikalaichchan, Palaiyadiikkulam, Thampanaikkulam, Madhu, Sinnarasankulam, Iranaiiluppaikkulam, Vilaththikulam, Sinna valaiyankulam, Ujilankulam, Adaikkalamoddi, Manthai, Thalladi, Erukkalamapiddi, Kollankulam, Cheddiyar kadal, and Naruvilikkulam

2 Drought Affected Areas in Vavuniya District from 2010 to 2014

Following areas were identified as drought prone areas in Vavuniya district. Nedunkulam, Koomankulam, Thonikkal, Vairavapuliyankulam, Bandarikkulam, Neriyaikulam, Paraiyanalankulam, Sooduventhapulavu, Poovarasnkulam, Periyathampanai, Sekkaddippulavu and Andiyarpuliyankulam

3 Drought Affected Areas in Mullaitivu District from 2010 to 2014

In the Mullaitivu District, areas such Kalvilan, Ujilankulam, Thunukkai, Koththampiyakulam, Valanagar, Thirunagar, Palaiyadi, Yogapuram, Kollavilankulam, Vannivilankulam, Amaithipuram, Alankulam, palaiya murikandi, Thenniyankulam, Therankanadal, Iyankankulam, Puththuvedduvan, Selvapuram, Pandiyankula, Naddankandal,

Panankamam, Siraddikulam, Kidaipidichcha kulam, Oddankulam, Oddaruththakulam, Ponnagar, Vinayagapuram, Mankulam,

Karippadda Thachchadampan, Pullavayal

murippu, Thekkankadu,

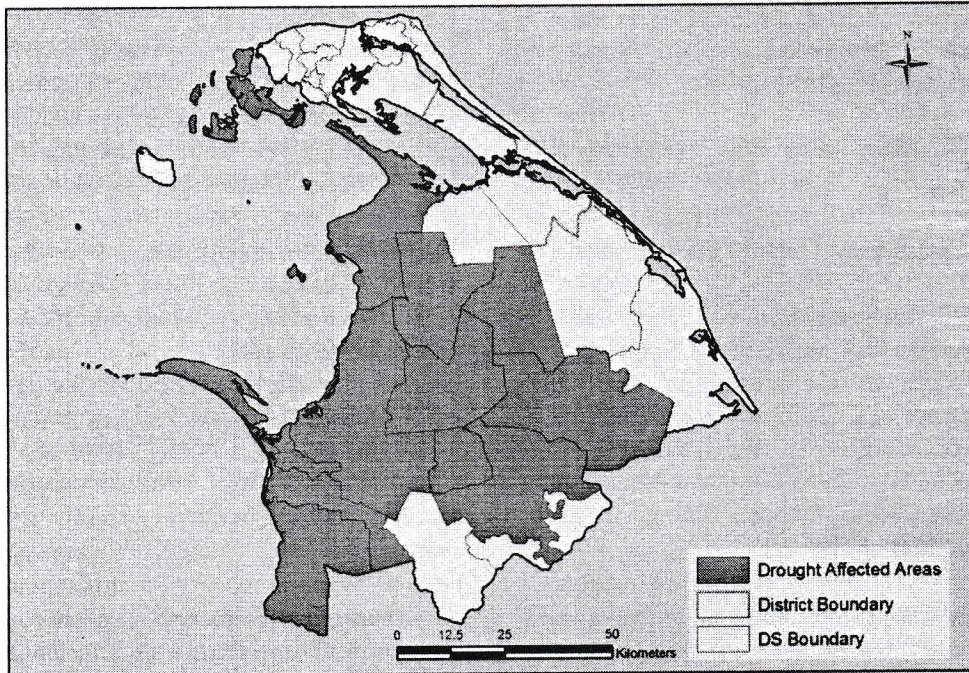


Figure: 1.1 Spatial Pattern of Drought in Vanni Region in the years from 2010 to 2014

4 Drought Affected Areas in Kilinochchi District from 2010 to 2014

In the Kilinochchi district following areas were identified as drought impact areas. These are Nallur, Alankerny, Kallankurichchi, Seddiyakurichchi, Gnanimadam, Madduvilnadu, Pallikkuda, Paramankirai, Pallavarayankaddu, Kariyalai Nagapaduwan, Kiranchi, Jeyapuram, Ponnaveli, Kurakkankaddu, Choranpattu, Thadduvankoddi, Ooriyan, Anaivilunthan, Navaladi and Chempankundu

Above areas in the Vanni region have been identified as drought prone areas,

because all the above areas were affected often by drought during the last five years.

During drought, most of the tanks, ponds and wells dried up due to high rate of evaporation. People were moved to distant places to get water especially the drinking water. Particularly people in the Manthai West divisional secretariat division had to go 09 km to get the drinking water. In every year, more than 175000 people were affected, due to drought in the Northern Region of Sri Lanka directly. Drought impacts are most eye-catching in the agricultural sector. Dried crops, abandoned farmland, and withered and

yellow pastureland are the common signs of drought.

Using the interviews and direct observation during the drought, various drought impacts were identified in the study area. 42% of the farmers stated that they lost their crop farming and 19% stated that their livestock died due to drought. 27% of the People, who are from Moondampiddi, Thevanpiddi, Iluppaikkadavai and Naachchikkuda, expressed their views, that they had spent more than three hours a day to get water for their domestic use. Also 59% of the people in the Northern Region mentioned that, they lost their home gardens during drought.

2012,2013 and 2014 droughts badly affected the areas, in the Mannar and the Vavuniya district in this similar pattern. In the Mannar district more than 1/3 areas were severely affected by the drought in 2012. Nanaddan, Manthai West, Musali and Madu divisional secretariat divisions were affected severely. In the Thunukkai divisional secretariat divisions, 83% of farmers pointed that their agriculture was partially damaged and 71% farmers stated that their subsidiary crops were partially damaged due to the drought. 67% of the people in Manthai East divisional secretariat division expressed that, during the drought they faced the drinking water problems and their agricultural activities were damaged and, they were affected by illnesses like scrap on the

skin and headache and they experienced uncomfortable weathers. In the Thunukkai and Manthai East divisional secretariat divisions, more than 40% of the wells were without water. National Water Supply and Drainage Board (NWSDB) had to supply more water to these drought prone areas.

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