

Extended Abstract

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Relationship between the Climate changes and Human adaptive strategies in Sri Lanka with special reference to Puttalam District

1.1 Introduction to the Research

The principle objective of my research is to examine the relationship between the Climate changes and the Human adaptive strategies in Sri Lanka with special reference to Puttalam district in 1980s to contemporary period. Studying the climate changes in Sri Lanka can be identified, previous 40 years of period main component of climate has been changed. When considering the rainfall it could be identified seasonal rainfall has been transform and also temperature. Annual rainfall in Sri lanka has not be change dramatically but studying the last 40 years type of rain is in extreme levels. So that droughts and flood were occurred regarding that extreme climate changes.

So that the area called Puttalam is situated in Dry zone has to face natural hazards. Specially I paid my attention to Anamaduwa GN division to identify the adaptive strategies of human, because this area can be categorized the one of poorest areas and also marginalized area in Sri Lanka (according to census and statistics in Sri Lanka).

However these extremist situation (climate changes and environmental hazard) the people those who are living in this area has no enthusiastic to migrate for other areas. They can't cultivate that what they want and also people are in under development but they loved and adaptive for the environment. In my research I try to identify the socio- economic, cultural ecological and political ecological factors that underlying this adaptation and I'd try to make a conceptual framework on that regards.

1.2 Research Problem

What are the adaptive strategies that human use for the changes of climate?

1.3. Study Area

Puttlam is a district situated near to the West coast of Sri Lanka. It has an area of 2,976 km² (1149 sqmi). It is formulated the North western province of Sri Lanka (Map No: 01). It is disseminated by climatology classification as a Dry Zone because of variety of climate, Landscape and forest types. Temperature of this district is considered relatively along with the rainfall it is follows,

Table No : 01 **Annual Rainfall and Temperature in Puttlam District**

Name of DSD	Sq K.m.	Inland water Area Hec.	Annual Temperature C ⁰	Annual Rainfall m.m.
Anamaduwa	134	1630	31.1	1299
Arachchikattuwa	72	1200	24.5	1521
Dankotuwa	74.6	40.2	22.2	1582.4
Chilaw	91	1635	32.8	1676.5
Kalpitiya	94.3	46.7	29.2	662.6
Karuwalagaswewa	490.4	450	28.2	903
Madampe	91.1	183	27.8	1450.7
Mahakubukkadawala	107.2	1162.9	26	52.4
Mahawewa	96.3	2020	25.6	1451
Mundalama	202.5	320.6	31.4	1521
Naththandiya	71.9	181.2	27.3	1384
Nawagathhegama	163.7	690	31.2	1227
Pallama	120.5	250.5	29	1303.8
Puttlam	113.6	981	27.7	818.3
Wanathwilluwa	710.4	304	30.2	1060
Wennappuwa	24	148.4	27.4	1384

Source: Sampath Pathikda, Divisional Secretariat of Puttlam, 2013

Puttlam Could be reckoned as an area the minimum annual rainfall 52 m.m. which rises up to 1700 m.m. and generally the area is treated as a dry region. The rainfall figures for all DSDs in the area indicate that the average, at least less than 2000 m.m. The average temperature exists from 22 C⁰ to 32 C⁰. This area could be treated as a region which a high priority is given to length of droughts.

The extent of internal water ways is 11243.5 hectares. The water is mostly salty and it is very difficult to carry out paddy cultivation from rain water. The area is cultivated from water

provided by major and minor irrigational projects. Paddy and coconuts plantations are the key crops in the district. In relation to the other parts of Sri Lanka, the extend of land in this area is limited.

Table No:02 The extent of Land available for paddy cultivation in Puttlam district

Name of DSD	Major Irrigation	Minor Irrigation	Rain water	Total
Anamaduwa	1593.6	5580.2	359.6	7533.4
Arachchikattuwa	823	874	222	1919
Dankotuwa	0	2119.2	0	2119.2
Chilaw	1428.6	1153.2	911.4	3493.2
Kalpitiya	0	0	0	0
Karuwalagaswewa	6350	5038	86.4	11474.4
Madampe	217.75	427.2	194.6	839.4
Mahakubukkadawala	899	1399.8	187	2485.8
Mahawewa	143	1171	57	1371
Mundalama	123	874	222	1219
Naththandiya	1111.5	6972.8	506.3	8590.6
Nawagaththegama	819.5	7928	4974	21097
Pallama	0	5742	913.6	6655.6
Puttlam	511	667	99	1277
Wanathwilluwa	1074	237	4.9	1315.9
Wennappuwa	0	6.9	0.4	7.3
Total	22 469.45	40 190.27	8738.16	71397.88

As this situation is very unfavorable for agriculture, people of the area have taken to livestock farming.

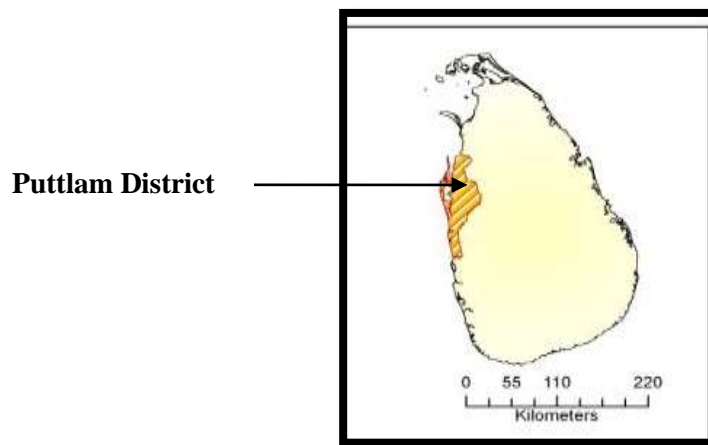
Table No: 03 Livestock Farming in Puttlam district

Name of DSD	Hens	Pigs	Goats	Cow
Anamaduwa	31 600	720	3100	10950
Arachchikattuwa	280 300	6250	24050	11500
Dankotuwa	62090	320	273	2082
Chilaw	120000	2400	1000	4682
Kalpitiya	8058	868	1241	673
Karuwalagaswewa	22349	966	2290	8000
Madampe	56000	3056	278	30080
Mahakubukkadawala	32003	1095	3796	7640
Mahawewa	74250	2324	2232	2420
Mundalama	280300	6250	24050	11500

Naththandiya	900300	6185	910735	300
Nawagaththegama	3560	235	125	2350
Pallama	73400	1000	2100	7665
Puttlam	27550	5042	2550	6749
Wanathwilluwa	2537	650	1325	2810
Wennappuwa	55000	1500	500	1000
Total	2029297	38861	979645	110401

The geological structure represents a complex of Miocene limestone. The Jaffna Peninsula and surrounding island in the extreme north and the north- western coastal strip extending to Puttlam are underlain by the mannar Sandstone and the Vanathawillu limestone of Miocene age. The latter is mostly a partly crystalline, indistinctly bedded, creamy coloured rock, richly fossiliferous in parts and mostly flat- bedded. As regards the soil structure of the area, it could be abundantly seen that Red yellow latosols, Regosols, Alluvial soil and Solodized solonetz soil is available (Kure,2003). Also the soil medium, being a dry paste of soils. This Alluvial soil intergrated with quality of bed rocks. Therefore, genaraly the grasses or the holomorphic plants cover the area.

Map No: 01 Study Area



1.4 Research Methodology

In this research has equal impotence of both primary and secondary data. I am try to understand the climate changes in entire Sri Lanka through the secondary date that were collected by the Meteological Department in Sri Lanka. In order to examine the patterns of climate changes, 1980 to 2015 monthly and

annual rainfall and temperature data will be map using the geographical information system called SP Line. Instead one division, Puttlam district select to the micro scale study.

In the other hand the study of relationship between climate changes and adoptive strategies of human is a physical and Socio- economical geographic factor analysis. Majority of the objective of the research cannot be comprehended and explain using by statistical methods. A qualitative data collection like case studies and life history methods will be restricted explanatory prospects in such situation. Based on that, I hope to collect the primary data through case studies as deep interview and genealogical studies.