

Analysis of Drainage System of West Bengal

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Abstract: The word Drainage is the natural or artificial removal and system of a surface in water and sub –surface water are drained from an area. West Bengal is the most densely and populated and land of river state of India. The West Bengal, an area (88752 km²) is the only Indian state that from the Himalaya in the north to the Bay of Bengal in the south. West Bengal is known as the land of rivers. The development of the Drainage system of West Bengal was largely governed by technique evolution of the eastern Himalaya and Western edges of the Bengal basin. The characteristics of the rivers as well as a number of aspect of water resources of the state can be linked to its physiographic regions. It is estimate that the western and eastern parts of the state are the most water stressed regions due to climate and human factors respectively. Data used in this study are collected from various government agencies. Present study attempts to portray a clear concept of Drainage system of West Bengal.

Key Words:- West Bengal, Drainage System, tributaries river, Himalaya, Bay of Bengal, Physiographic region, snow fed rivers , Rain fed river, Tidal fed River

Introduction:-

Drainage systems are the patterns formed by the streams and rivers in a particular Drainage basin. They are governed by the topography of the land, where there a particular region is dominated by hard or soft rocks and the gradient of the land. West Bengal is known as the land of rivers. The drainage system of West Bengal is constituted by the tributaries and distributaries of the Ganga and the Brahmaputra along with some significant system of rivers from Chotanagpur plateau such as Damodar, Ajay, Mayarakshi, Kasai and Subamarekha. In other words, rivers blowing through the state have two different sources. One source is from Himalaya and the rivers are snowfed while other source is from the plateau of Chotanagpur and rivers are rain fed. Apart from these two there are some rivers which are called tidal rivers. The general direction of flow of rivers are from north to south and from west to east. Its middle and southern parts is flat alluvial plain brought down by the river Ganga and its tributaries , This Vast alluvial plain land has been bisected by river Bhagirathi- Hooghly . The flat plain land on western bank of the river Hooghly is largely formed by the deposits brought down by rivers rising in the western hills. That pour their water into the Hooghly river and form part of Genetic delta.

Objective of the study:-

To study attempts to portray a comprehensive and holistic profile of Drainage system of West Bengal and their evolution characteristics and distribution.

Study of area:

Almost after 200 years of English rule on 15th August 1947, a free Indian came into being and with this west Bengal got its existence . At the time of partition of the country West Bengal was declared as one of the states of Indian republic . It is bounded by Bangladesh and Assam in the east , Nepal ,Bihar and Jharkhand in the west, Bhutan and Sikkim in the north and by Bay of Bengal and Orissa in the south. The total area of west Bengal is 88752 km² Sharing about 3% area of the country supporting 802,21,171 persons according to census of India 2001. West Bengal lies the between the Latitude of 21°38' north to 27°15' north and longitude 86°0' East to 90°04' East. The west Bengal is a state of the eastern Zone of the Indian republic.

Source of Data :

Various quantitative and qualitative information about Drainage system have been collected from the office of the department of irrigation and Water ways, Govt. Of west Bengal (2014) Annual flood report for the year of 2013. National library , Kolkata servay of Indian, Kolkata The study is well supported by the intensive field work and adequate appraise of the prevailing situations supported by map photography , Collected information and data have been evaluated to exhibit the spatial pattern of Drainage of West Bengal. Their characteristics with the help of maps and text.

Methodology of the study :

Various methods and techniques has been used to evaluate the Drainage system of West Bengal at spatial and temporal level, suitable maps has been prepared after making necessary calculation from the data.

Analysis the Drainage system of the West Bengal:

The drainage of the state can be classified into three categories:

- i) Snow-fed rivers
- ii) Rain fed rivers and
- iii) Tidal fed rivers

Snow-fed rivers: A host of rivers which originate from the snow peaks and glaciers of the Himalaya, perennial in nature, are important rivers of West Bengal. Further, they are categorised into two:

- a) The river Ganga and its tributaries, and
- b) Rivers of North-West Bengal.

River Ganga and its tributaries: River Ganga is the most important rivers of West Bengal which originates from the Gangetic glaciers of Garhwal Himalaya after flowing through Uttaranchal, Uttar Pradesh, Bihar and Jharkhand enters into West Bengal at the Western edge of

Maldah district. In Murshidabad district river Ganga is divided into two segments created a fork like feature. One segment enters into Bangladesh as river Padma and another one is known as Bhagirathi - Hooghly. River Ganga flows from west to east dividing the state into North Bengal and South Bengal. The northern part of Bhagirathi-Hooghly segment is known as Bhagirathi and the southern part is called Hooghly. The area between Bhagirathi - Hooghly and Padma - Meghna is known as the Delta of Ganga.

Rivers of North - West Bengal: The rivers of this part of the state also originate from the snowy peaks of Himalaya and are perennial in nature. Among them Tista, Torsa, Mahananda, Jaldhaka, Riadak are important. They flows from north to south and become more ferocious during monsoon. River Mahananda is the longest in north Bengal and ultimately joins rivers Ganga as its left bank tributary river. Lalddhaka is longest district. Rivers Tista, Jaldhaka, Torsa, and Raidak flows through Darjeeling, Jalpaiguri and Cooch-Behar to join the Brahmaputra river in Bangladesh. The river of north Bengal runs very swiftly in its upper reaches and has developed much water falls. During monsoon after receiving heavy rainfall inundate their catchment area.

Rain-fed rivers: Rain fed rivers of West Bengal take their origin in the Chotanagpur plateau and flows east-ward to join Bhagirathi-Hooghly river as its major right-bank tributaries. As these rivers are rain-fed so majority of them are seasonal in nature. For major part of the year they either remain dry or thin layer of water flows through their channel. Among rain- fed rivers Damodar Mayurakshi, Ajay, Darakeshwar, Silai, Kasai are important.

Tidal Rivers: The rivers flowing through the deltaic plain of the Sundarban area of South 24-Parganas district are fed by tidal waters and are called tidal rivers. These rivers are actually the distributaries of the Hooghly river which include Matla, Jamera, Vidyadhari, Bartala, Sapotmukhi, Gosaba, piyali, Harinbhingha, Raimangal and others. These rivers flow very slowly and deposit heavy still in their course and sometimes use to change their old course by cutting way through the deposited silt.

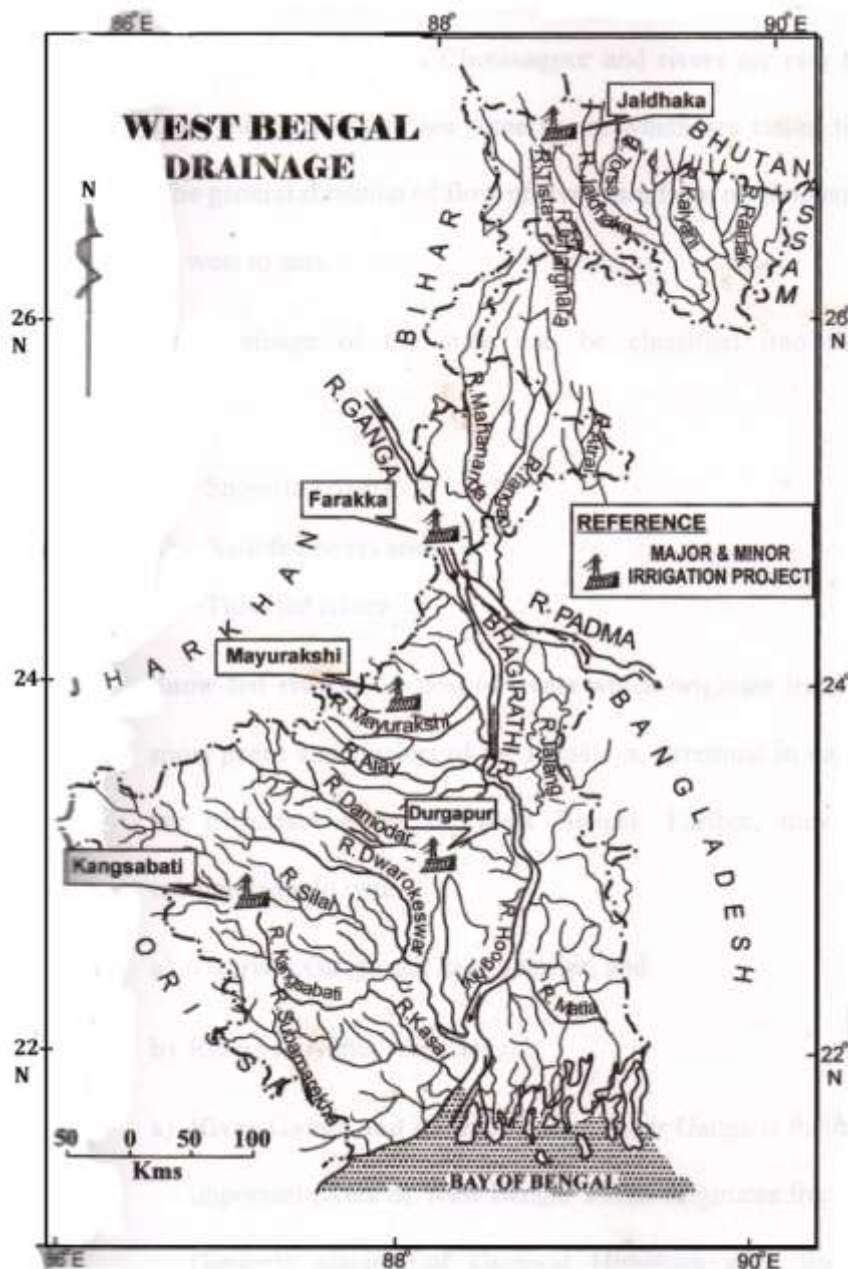


Fig: 1

Conclusion:

The Drainage of the West Bengal have been categories into snow fed, rain fed and tidal fed rivers. River Ganga and Tista are the example of snow fed rivers while river Damodar and Ajay are the example of rain fed rivers and tidal fed rivers are matla and jamera. The Vast alluvial plain of the state spreads from Jalpaiguri and Siliguri or from the foot hills of the Darjeeling Himalaya to the soures of the Bay of Bengal excluding the western plateau and upland area. The majority of the district of the state falls with in the jurisdiction of this physical unit. This

monotonies surface is dissected by the tributaries and distributaries of the river Ganga and Brahmaputra.

References :-

- 1) **Bagchi, k .(1949)** : Gangus Dutta , Calcutta university
- 2) **Bose, s.c (1978)** : The Geography of West Bengal National Book trust India , New Delhi
- 3) **Bordhopahy , T.K.2 shil, A.K(1990)** ; modern Geography of Indian (Bhoo-porichay), University of Calcutta.
- 4) **Bhattacharya ,H.N and CHAKRABARTI, s (2011)**: Incidence of fluoride in thr ground water of purulia District West Bengal ; w geoenvironmental lppraisal, curr. V 101(2),pp 152-155
- 5) **Chakraborty, s.(1970)**; Some consideration on the evolution of physiography of Bengal(ed) Chatterjee A.B.2 Alou, Firmk, K.L. Mukhopadhyay Calcutta University pp16-29
- 6) **Dlow –Gowb**: Department of irrigation and water ways , Govt. Of West Bengal (2014) . Annual flood report for the year 2013. Directout of Advance planning project Evaluation monitoring cell Kolkata 112 p.
- 7) **Singh. R.L (1971)** : (ed) Indian A Regional Geography National Geographycal society of India , Varanasi.

