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Evolution of Water Policy and Water Management in Darjeeling: A Historical Perspective

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ABSTRACT

Springs are the source of water to the mountain communities for centuries and the revival & proper maintenance of this traditional source of water is very significant for the region's sustainable growth. Nearly every single river in India has its origins in springs, with the origins bearing not only a hydrological significance but also representing culture and heritage around spring water as the origin of the revered Himalayan Rivers. So, springs and rivers have a very intimate relationship that is reflected in innumerable ways. Any modification in spring-hydrology has clear unwelcome consequence on river hydrology. Darjeeling's water policy objective is to control the existing water resources in an efficient way and to address the issue of water shortages, mainly during the dry season due to the non-occurrence of rainfall. Darjeeling town relies mostly on the Senchal lakes and natural springs, but face challenges on account of deforestation, illegal construction, and inadequate infrastructure related to water supply. The Water policy in Darjeeling focuses on improving water supply, infrastructure of Darjeeling town, promoting rainwater harvesting, and implementation of sustainable water management practices. This paper reflects the "evolution of Water Policy" in Darjeeling from a historical point.

Keywords: spring water, springs, water policy, Darjeeling, population

INTRODUCTION

Water is among the most prevalent substances on Earth. It encompasses seventy percent of the Earth's surface. Water is the sole substance that naturally exists in all three states: solid (ice), liquid, and gas (water vapor and steam). Water falls as various types of precipitation—rain, hail, sleet, snow—and collects on the surface in glaciers, lakes, marshes, rivers, and oceans. It can be suspended in the air or found deep underground. Its presence helps regulate Earth's temperature.

Water is vital for all living organisms. Humans consume water and utilize it for agriculture, industry, and enjoyment. It is esteemed for its aesthetic and spiritual significance. In the majority of the world's principal faiths, water holds significant symbolic or ceremonial importance. The advancement of human civilization has been intricately connected to the availability of water. Historically, individuals established settlements or migrated to locations abundant in potable water. The quantity and quality of water persist in influencing our utilization, management, and discourse regarding water in contemporary times.

Currently, global water supplies are facing heightened strain due to population expansion and humanity's demand for increased water availability across diverse locations and applications. The World Health Organization (WHO) reports that over 1.1 billion individuals globally lack access to safe drinking water, while 2.4 billion individuals lack proper sanitation facilities. In 2003, water quality-related disorders resulted in the deaths of over six thousand children daily. Furthermore, around 3,800 cubic kilometers of freshwater is extracted annually from the world's lakes, rivers, and aquifers—double the volume drained fifty years prior.

The Darjeeling district is classified agriculturally under the Eastern Himalayan Region - Zone II. The district receives an average annual precipitation of 2300 mm to 3200 mm, with 80% occurring between June and September. Suboptimal temperature, elevated humidity, and insufficient sunlight hours hinder agricultural output. The district's climate is ideal to the development of mandarin oranges, pineapples, and temperate fruits such as peaches and plums. The district encompasses a net sown area of 114,446 hectares, constituting 52% of the total geographical area, and a net irrigated area of 24,052 hectares.

Darjeeling experiences a persistent water scarcity issue despite substantial rainfall, primarily attributable to its inadequate infrastructure and dependence on a restricted number of springs. The city's water supply is mostly derived from springs in the Senchal catchment area, while the current water infrastructure, established during the British era, is inadequate to satisfy the increasing demand.

Limited Water Sources:

- Darjeeling depends heavily on a few springs and rainwater as its primary water sources.
- The twin Senchal lakes, North and South, are the main source of storage, but their capacity is not unlimited.
- Only 14 out of the original 26 springs in the Senchal catchment area are in active mode, controlling the overall water supply.

Aging Infrastructure and Growing Demand:

- The existing water supply process has the capacity to serve a smaller portion of the population, hence challenging to cater the needs of the growing population, which also includes tourists and other sectors like colleges and schools.
- The Municipality provide a small portion of the daily water demand mainly during the dry season.
- Hence a significant gap between demand and supply of water, has resulted many residents of Darjeeling without access to public water.

Reason behind Scarcity of Water:

- **Decline in spring sources:**

Deforestation and Illegal construction are the main reasons behind the decline in Spring sources. The decline in spring sources, or "springs dying," is a major problem in this region like the Himalayas, where they are a main source of water for population & tourists. This is on account several factors like climate change, unsustainable land use practices, and infrastructure development.

- **Population growth:**

Darjeeling's population has been increasing, putting a pressure on supply of water resources.

- **Deforestation:**

Loss of forest cover influence water infiltration and reduces the available water supply.

- **Lacuna in Water Management:**

The existing infrastructure is not properly maintained, and there are problems with water distribution and leakages.

- **Dynamic-Ness of Climate:**

Changes in rainfall patterns and global warming reducing water availability.
Consequences of Water Scarcity:

- **Water rationing:**

Very challenging for the Municipality to supply water to all residents of Darjeeling, which has resulted rationing and inconsistent water delivery.

- **Reliance on Private water sources:**

Many residents depend on private water suppliers and rainwater harvesting to meet their requirements.

- **Environmental Degradation:**

The strain on water resources can lead to further degradation of the surrounding environment, including the Senchal catchment area.

Water has major contribution in our life. At residence, it is used for cooking, washing, drinking, plantation, and removing daily wastes. Outside the residence, water is used similarly in schools and the working place. We use water for swimming, fishing and boating. Also, water is used for several purposes like harvesting, industrial use, agriculture etc. Same is partly applicable in Hilly region like Darjeeling.

EVOLUTION OF WATER POLICY IN DARJEELING

Water Policy in Darjeeling is a complex in nature characterised by reliance on spring water from past, rapid urbanization, and the challenges of water scarcity. Previous water systems were implemented during the colonial period which was depend on natural springs. But, with growth of Population and changing pattern of land use, these systems had faced few challenges leading to water shortages and the growth of private water providers in Darjeeling.

Previous Centralized System:

- **Foundation:**
  Darjeeling's water supply system was founded during the British period, between the year 1910 and 1932 which was mainly based on 26 perennial springs in the Senchal Catchments Area.
- **Infrastructure:**

Two twin lakes, North and South was designed to store water from the springs as a part of this infrastructure.

- **Limited Capacity:**
  The system was initially developed considering population of only 10,000 residents, while the current population is significantly larger, approaching 120,000.
  Challenges and Shifts:
- **Growing Demand:**
  The rapid increase in population and presence of tourist throughout the Year have put pressure on the infrastructure of Water Supply.
- **Water Scarcity:**
  The centralized system fails to meet the demand of Darjeeling, resulted to water scarcity even during the rainy season.
- **Water Quality:**

The quality of water supplied by the Darjeeling Municipality is also not up to the mark considering the taste and quality of water as per the feedback of residents.

- **Lack of Efficiency of Governance:**

Ineffective water management policy, in addition to lacuna in maintaining the infrastructure and not having adequate investment, has accelerated the problem.

Growth of Private Sources:

Lacuna of the centralized system has resulted to the emergence of private water suppliers in addition to private water tankers, pipelines, and manual carts.

- **Privatization:**
  Traditional springs that were previously freely accessible have been privatized by landowners, and they sell water to the public on a commercial basis.

Decentralization:

Shifting of decentralization has resulted private water sources a more lucrative option for residents of Darjeeling.

Present Situation:

- **Dual System:**
  Residents of Hilltown presently depend on a dual system of water supply: the public system and the growing private sector, which includes private water suppliers.
- **Inequitable Access:**

The privatization of water resources has made water access uneven, with the wealthy often able to afford private suppliers while the urban poor continue to rely on unreliable and often unsafe public sources.

- **Environmental Concerns:**

The increasing dependency on private sources, in addition to the degradation of the Senchal Catchments Area, has raised the issue of environmental concerns with respect to water quality and sustainability.

Various issues in relation to the "Evolution of Water Policy of Darjeeling" are mentioned below:

1. Early Infrastructure of Water during Colonial Period:

Water supply system in Darjeeling was initially developed during the British Raj, mostly was depend on natural springs within the Senchal Forest and wildlife sanctuary.

- These systems were developed to fulfil to a smaller population, but the system faced several challenges on account of population growth in Darjeeling town. keep pace

2. **Challenges after Independence:**
   - Population increase and urbanization have developed significant pressure on existing water sources, which has led to water scarcity, especially during the dry season.
   - The municipal water supply system is based on old infrastructure, has faced several challenges to cater increasing demand.
3. **Presence of Private Water Suppliers:**
   - The gap between demand and municipal water supply has accelerated the growth of Presence of private Water Suppliers categorised private water market.
   - Private Water Suppliers have emerged as an alternative option, but a major portion of population (those who are poor) is not getting the flavour of this service on account of high costs especially in Hilly region, Darjeeling.
4. **Require for Sustainable Management:**
   - Growing recognition of the need for sustainable water management practices, including:
     - **Rainwater harvesting:** Applying rooftop rainwater conservation as a supplementary water source.
     - **Spring water conservation:** Protection and Manage the natural springs within the Senchal catchment area.
     - **Awareness on Water Conservation:** To create awareness among the common people regarding the water consumption and minimise wastage for saving this resource.
     - **Participation of Community:** Involving local communities in water management decision-making.

5. **Addressing Inequalities:**
   - The water crisis affects groups of people excluded from the mainstream of society, who may not have the opportunity to access water.
   - There's a need for policies that should give priority and justice to in water resource management.
6. **Decentralization and Community-Based Management:**
   - Some policies focus on devolving decision-making and management to the community level, allowing local communities to better manage their water resources.
   - This approach can be beneficial for fostering local ownership and ensuring that water management needs are met at the grassroots level.
7. **Future Directions:**
   - **Integrated water resource management:**

Implementation of a holistic approach to water management that considers all aspects of the water cycle, including conservation, use, and quality.

- **Adaptation of Climate change:**

Addressing the impacts of climate change on water resources like changes in rainfall patterns.

- **Sustainable Urban planning:**

Integrating water management principles into urban planning and development to guarantee that new infrastructure is p lanned to minimize water use and maximize water usage efficiency. In summary, the evolution of water policy in Darjeeling shows a transition from a colonial system of centralized water supply to a more complex environment where community-based initiatives, private providers, and government agencies all play a role in water management. Moving forward, an emphasis on sustainability, fairness, and community participation will be vital in providing a stable and equitable water supply for the town's citizens.

In connection with “Evolution of Water Policy of Darjeeling”, Water Management related issue of Post Colonial period in Darjeeling is given below.

Water Management Policy in Darjeeling:

Urban springs of Darjeeling municipalities were selected for studying community adaptive practices around water and climate change. With proper care consideration was taken for ensuring geographical representation within all the visible features of an area of land while studying the springs.

In Darjeeling town Water is supplied from the Sinchel Catchment Area and water is collected from 26 number springs of the Sinchel wildlife Sanctuary and is preserved in an arrestor tank which supply water on gravity to the ground storage reservoir at Sinchel (North Sinchel and South Sinchel Lake). Water from the two Sinchel lakes are then filtered through the pressure filter of Jorbunglow filter house and from there the water is supplied to the reservoirs situated at St. Paul Tank where the capacity of 2,35,812 galloon and the Rock Valle Tank with the capacity of 56,651 galloon and 58,012 gallons. From these reservoirs water is distributed all over the Darjeeling town with the support of subsidiary tanks located at various places. Water from another catchment is Rambi catchment area, has 10 numbers of springs also passes through the Jorbunglow Filter House and is brought to the water tank in Rockville.

System of this water supply in Darjeeling Town was developed at the time of British regime with the target of fulfilling requirements of 10,000 population but today the population of Darjeeling has increased to 1,20,414 as per Census of India 2011.

The Himalayan network of hills and valleys exhibits a dendritic design, with the slopes of the hills being long and steep. Due to the steep landscape, groundwater gradually flows to adjacent springs and jhoras, and can sometimes discharge suddenly in substantial volumes from joints and cracks as springs.

Darjeeling area has adequate number of perennial and semi perennial water bodies in the form of hilly springs. These springs are seen in and around the town & are the main sources of water in Darjeeling.

Source : https://darjeeling.gov.in/tourist-place/senchal-lake-wild-life-sanctuary/

Sinchel Catchment Area

Sinchel Wildlife sanctuary is the primary water harvesting area for the Municipal Water Supply (MWS) in Darjeeling town and the natural springs, originate from Sinchel range & provider of the major source of water supply in Darjeeling Town.

Sinchel range plays as a significant "life line" of water supply for the people of Darjeeling and villages located in its geographical boundary. 26 numbers of springs originated from the northern and the southern part of Sinchel Range. Water from these springs is kept in a tank and is fed to the Masonry conduit line (approximately 8 km in length) that bring water on gravity to the ground storage reservoir namely North Sinchel Lake and South Sinchel Lake. To control the nature and pattern of discharge of each of these springs, Water Work Department of Darjeeling Municipality has allocated number to each of these springs.

In this system, springs numbered 1 to 4 are situated between Jorbonglow and North Lake, whereas springs numbered 5 to 22 are located between South Sinchel Lake and Kong Khola. The masonry conduit line is the sole system that gathers water from all perennial springs and directs it to the twin Sinchel Lake. The town largely depends on these two lakes-North Sinchel Lake and South Sinchel Lake for supplying water. These lakes were constructed during the British period for providing adequate amount of water to the small population during that period of time. North Sinchel Lake and South Sinchel Lake.

These lakes play significant role for municipal water supply in the town. The North Sinchel Lake was constructed in the year 1910 and is situated at an altitude of 7444.50 ft above the sea level. The lake is 25 ft 6 inch deep and it has a capacity to hold 20 million gallons of water . The South Sinchel Lake was constructed in the year 1932 and has a capacity to hold13.5 million gallons of water. The South Lake has a depth of 22 ft.

The flow of water through the open conduit, conveying water from the 26 springs located within the Sinchel range feed both these lakes. Darjeeling Municipality report of the Year 2010 reflect that the average discharge of water through the open conduit is 14000 gallons per hour (3.36 lakh gallon) per day during the Off-Season and during the "peak-season" the average discharge through the open conduit is 80,000 gallons per hour and 19.2 lakh gallons per day respectively.

Sindhap Lake

Sindhap Lake is another significant source that discharge water for the town. This lake is also located within the Sinchel range.

This lake had the capacity to hold 15 million gallons of water, but on account of the inferior quality of reservoir and multiple leakages Sindhap Lake is unable to give the satisfactory result. Sindhap Lake can store 50 percent of the water of its total capacity. Water here is mainly pumped from Bangla khola and Khong khola , very close to the lake and also from the perennial springs near the lake. The lake gives excess water to the twin Sinchel Lake during dry period. Objective of this lake is storing water from different sources during the lean period and provide water to the twin Sinchel Lake during the dry period. This Lake is operated usually operated during the dry period.

Khong Khola
Khong Khola is a small perennial river near the Darjeeling town. During dry season when the springs are not sufficient to fill up the lakes to cater the total requirement in the town, water is sometimes pumped from Khong Khola. As per the Municipality Report of the year 2010 about 75,000 gallons of water is pumped per day from the Khong Khola to Sinchel Lake.

Rambi Catchment Area
Water from the Rambi catchment area is another significant source through which water is supplied to the Darjeeling area. It is approximately 20 km from Darjeeling Town. Rambi catchment area have streams like Rambi khola, Kalikhola and eleven number of natural springs that support water to the town during lean period. Water from these springs is stored in a cast iron pipe for the Jorbunglow filter house. Main transmission line is 10 km in length from Rambi source to Jorbunglow filter house. As per the 2010 Report of Municipality this catchment area has a total capacity of 1, 50,000 gallons of water per day. Often at the time of the peak water scarcity period Municipality accumulate water in a taker and cater the demand of the town.

Extensive water supply initiatives from the Rambi catchment region were devised and executed by the Public Health Engineering Department and Darjeeling Municipality to accommodate the growing water demand in the town. The initial water supply project from the Rambi catchment area commenced between 1969 and 1972 by the PHE Department; due to unsatisfactory outcomes, the subsequent phase, termed the "Darjeeling Water Supply Improvement Scheme," was launched by the Darjeeling Municipality in 1993, later assumed by the PHE. Although this project was ultimately finished, it did not yield adequate results due to several technical issues. The projected water extraction from the Rambi catchment to the Jorbonglow filter house was 200,000 gallons per day; however, the actual output was just 70 to 80 gallons per day. Currently, around 60 percent of the water from Rambi is primarily allocated to the Army cantonment area, while the remainder is utilized by the Darjeeling Municipality. Consequently, the Rambi catchment area can be regarded as another vital resource for the inhabitants of Darjeeling, providing supplementary water supply.

Natural Springs Located within the Municipal Area
In addition to the municipal water supply via pipelines, natural springs situated within the town are another significant source of water for the community. Darjeeling town possesses a significant number of perennial and semi perennial natural springs owing to its elevated terrain and steep gradient. Certain areas in Darjeeling town, particularly the urban periphery, lack connection to the municipal water delivery system and rely solely on spring water for their sustenance. There are over 32 natural springs located within the Darjeeling municipal area. These springs provide an average of around 20,000 gallons of water daily. Despite being situated inside municipal boundaries, these perennial springs remain outside the municipality's jurisdiction.

Nevertheless, the majority of these springs are administered by the local communities or Samaj situated in the surrounding region. The Samaj assumes responsibility for the management and maintenance of the springs, as well as determining the capacity or average volume of water that individuals may extract, ensuring equitable distribution, particularly during arid seasons when water availability diminishes significantly. Religions and social groups significantly influence the purity.

Multiple social institutions are involved in the management and allocation of water services in Darjeeling. The Darjeeling Municipality is primarily accountable for the infrastructure and management of the municipal water supply. The municipality is also responsible for managing the springs within the Sinchel Wildlife Sanctuary, which serves as the primary water supply source for the town. The community-based organization, referred to as Gaon Samaj, oversees the majority of the springs situated within the municipality. Despite the perennial springs being located within the municipal boundaries, they remain outside the municipality's responsibility. The Gown Samaj predominantly oversees the management of these springs. The third category comprises local water vendors, who play a crucial role in supplying water to the residents of Darjeeling in recent times.

Role of Municipality in Water Supply Service
Darjeeling Municipality was founded on July 1, 1850, and is regarded as one of the oldest municipal administrations in the nation. The municipality primarily oversees the civic administration of Darjeeling; a significant civic amenity given by the Darjeeling Municipality is the supply of Drinking water. In West Bengal, the Public Health Engineering (PHE) department of the West Bengal government oversees water supply in other municipal areas. The Darjeeling municipality independently manages its water supply, encompassing both augmentation and distribution, without any designated budgetary allocation from the government.

Planning at the Municipal Level and implementation of water resource supply and management for Darjeeling town is structured according to a hierarchical system. The Darjeeling municipality relies on its own economic sources for sustenance. It receives supplementary funds from the state government for several programs through specific allocations.

Water Distribution Network in Darjeeling Municipal Town

The entire water distribution system in Darjeeling town falls under the authority of the Darjeeling municipality. Water distribution in the municipal area is facilitated through a network of tanks and pipelines across the town, as well as by operating valves situated in various locations. If the valve is not opened synchronously by the valve operator at various locations, numerous areas in the town would lack water. In the dry season, when water volume diminishes, the municipality distributes water to the people via tanker.

The water supply system of Darjeeling town comprises around 35 km of transmission mains, 83 km of distribution mains (excluding service lines and public hydrants), 14 pipeline bridges along the transmission mains, and 90 valves distributed throughout the town (Annual Report, 2010). Water collected at Sinchel Lake from several springs flows by gravity to the filter house in Jorbonglow via 10-inch and 8-inch pipelines. Water from the Rambi catchment region enters the filter house via the main transmission line, which extends 10 kilometers. The water undergoes treatment via a sand filter unit situated in Jorbonglow. Water filtration occurs via five pressure filters, each capable of processing 16,000 gallons of water per hour. Rapid sand filters employ relatively coarse sand and other granular media to eliminate particles and contaminants captured in the floc using flocculation chemicals, primarily aluminium or iron salts. Water and flocs traverse the filter medium under pressure, with the flocculated material being retained within the sand matrix.

Water is conveyed from the filter house through large mains to two storage reservoirs located at St. Paul, which has a c apacity of 235,812 gallons, and Rock Vail storage tank with a capacity of 56,651 gallons and other with a capacity of 58,012 gallons.

Water is transmitted from the filter house to the Rock Vail storage tank via 200 mm and 150 mm diameter cast iron pip es, extending 4344 m in length. Transmission to the Saint Paul storage tank occurs through a 200 mm diameter cast iro n pipe, which stretches 3379 m.

Water from these reservoirs is subsequently allocated to residents of various wards, either directly from the reservoirs or via subsidiary tanks located throughout the municipality. Twenty-seven distribution main and subsidiary tanks receive water from the Saint Paul storage tank. Water is provided from the Rock Vail tank to thirty-nine distribution mains and auxiliary tanks.

The existing water supply infrastructure was installed during the first quarter of 20th century to cater the demand of small population during that period of time and the civic amenities and infrastructure were installed accordingly. In the recent time this civic amenity and the infrastructure is supporting the population of 1, 20,414. About 95 percent of the pipelines and the valves were laid during the introduction of water supply system in Darjeeling. Due to this the pipelines and valves have become old and dilapidated. Very little work has been done till date for the replacement and restoration of these old pipelines, as a result of this large volume of water are wasted due to leakage of pipelines and valves adversely affecting the general water supply. Further illegal tapping of water and unscientific connections have added much more problems to the existing distribution system ultimately leading to scarcity of water in the town. Water is also supplied through water tanker trucks by the municipality during the dry season to cater the need of people.

The current water supply infrastructure was established in the early 20th century to meet the needs of a small population at that time, with civic amenities and infrastructure developed correspondingly.

Recently, this civic amenity and infrastructure sustain a population of 120,414. Approximately 95 percent of the pipelines and valves were installed during the implementation of the water delivery system in Darjeeling. Consequently, the pipelines and valves have deteriorated and become decrepit. Minimal efforts have been undertaken to replace and restore these antiquated pipelines, resulting in significant water wastage owing to leaks in the pipelines and valves, which negatively impacts the overall water supply. Continued illicit water tapping and unscientific connections have exacerbated issues within the existing distribution system, ultimately resulting in water scarcity in the town. The municipality also provides water via tanker trucks during the dry season to meet the needs of the population.

Balasun River Project

In light of the water scarcity issues in Darjeeling town and to address the water shortage faced by the Darjeeling Municipality, the Public Health Engineering (PHE) department of the Government of West Bengal has recently initiated a surface water supply project at the Balasun River, termed the "Balasun River Project." The River Balasun is situated at the intersection of Rangmuk and Ceder Tea Estates, roughly 13 km from Sinchel Lake. The Balasan River Project is a high-budget initiative financed by the government of West Bengal, with a total expenditure of Rs 55.86 crore. The Balasun Project was initially proposed in the early 1990s to alleviate water constraint in Darjeeling.

The foundation stone of the project was laid on 19th February 2006 by the then Chief Minister of West Bengal, Buddhadeb Bhattacharjee. While the project was expected to be completed by 2009, on account of several external issues it has faced delays and not yet completed.

Besides Balasun River Project, seven other big and small water supply schemes and projects have been undertaken by the state government between 1962 and 2001 in Darjeeling with the aim to meet the demand of water in Darjeeling. Out of seven water projects, only one which is known as Boksi Jhora project has been fully successful in giving the fruitful result. Other projects like Rambi Khola water Project whose foundation was laid by Sir Joti Basu in 1995 could not come out with the successful result. Similarly, Rungdung Khola Water Project, Khong Khola Water Project, Sinchel Lake and distribution System Renovation Project were some of the projects that were planned to solve the problem of scarcity but were totally unsuccessful.

In addition to the Balasun River Project, the state government has initiated seven other significant and minor water deli very schemes and projects in Darjeeling from 1962 to 2001 to address the region's water demand.

Of the seven water projects, only the Boksi Jhora project has achieved complete success in yielding positive results. Other initiatives, such as the Rambi Khola Water Project, which was inaugurated by Sir Joti Basu in 1995, have not yie lded successful outcomes.

Likewise, the Rungdung Khola Water Project, Khong Khola Water Project, Sinchel Lake, and the Distribution System Renovation Project were initiatives intended to address the issue of scarcity but ultimately proved to be entirely ineffect ive.

CONCLUSION

Despite receiving significant rainfall, Darjeeling consistently struggles with water scarcity. While the town is reliant on the Senchal Lake and springs, the existing infrastructure and water management practices are struggling to meet the demands of the growing population. Factors such as deforestation and illegal construction near the catchment areas further exacerbate the situation, resulting in a decline in the number of springs. Although the Water Policy of Darjeeling and Water Management Policy have mostly solved the water supply problem in Darjeeling on account of population growth, the water supply problem still prevails in this area. Although the Water Policy of Darjeeling and the Water Management Policy have mostly addressed the water supply issues caused by population growth, these problems persist in this area.

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