

Using Drinking Water and Human Behavior : A case study on Raiganj Municipality, India

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Abstract:

The time has come when we need to study the conservation of fresh drinking water. Most of the people are abusing and wasting drinking water. It is not only in India, rather observed in most of the countries. Raiganj Municipality of West Bengal is an urban area and this article will highlight the present scenario of wasting fresh drinking water and the human behavior of Raiganj town about the using of drinking water in their daily life. The Raiganj municipality and Chairman Sandip Biswas are doing lots of good work to save drinking water. We have only 1 % fresh water in Earth. If you don't care about that 1 % then your position will be like Dead Sea. Our birth is related with water. At the womb is filled by Amniotic fluid and in this fluid 98% is water. Personally, Dr. Tapas Pal, one of the permanent resident of this town do maintain 1 bucket water for bath / day from his early childhood. Again during the buildup of Dr. Tapas Pal's house, he had done a very novel job like : he used daily-used water for construction of the concrete house. Again there are some Restaurant are using 'save water' concept at the site of hand wash zone. So, human behavior is vital to save water. Key words: Drinking water.

Introduction

Dr. Tapas Pal (2019); an Assistant Professor of Raiganj University, India has said in GEITEC (Brazil) 'Thinking of Sustainability is important to enjoy the SUSTAINABLE FUTURE' and he said in his lecture 'you won't know the importance of water unless you have to walk miles in the heat for a pot of water'. After the water used it is returned to be environment in a different condition likely dirty water or waste water. Water plays as important role in the World Economy. In India 70% fresh water used in agriculture purpose. The whole world accepts that alternatively water is known as life. Life can't be sustained without water. Scientists calculated that there are one billion cubic kilometers of water are available on this earth means one fourth of the earth's surface are covered by water. But today useful fresh water are availability less than one percent which is found lake, pond. Rivers, ground water etc. There are many causes of fresh water are declined but directly and indirectly human being are the main causes of wasting of fresh water. On a planet where water scarcity affects over 40% of the world's population reducing unnecessary water usage is imperative to meet the sixth sustainable development goal. Many people don't understand about how much water they waste on a daily basis. Although earth constitutes 71% of water, only 2.5% of its fresh water that we use, and we are wasting that too. Water is therefore important resource in our planet so it must be save.

Background of the study

Fresh water in our daily life is most important phenomenon. Water is one of the most important substances on earth. Yet freshwater is essential for life. Plants, animals and humans all need freshwater to survive. We use fresh water for drinking; irrigate crops as part of sanitation systems and industrial factories. Fresh water study: A brief history of water and health from ancient civilization to modern times. Our whole civilization is built on the use of water. From ancient times civilization have depend on fresh water bodies-Fresh water is essential not only to sustain human life but also to support the activities that from the basis for thriving economies. Water resources are essential to human societies. Activities of these societies can pollute and degrade water resources, limiting their beneficial uses. Water bodies are essential to humans not only drinking but also for transportation, agriculture, energy production, industry and waste disposal. Fresh water is an important nutrient in our cells like as muscle cell and postponing muscle cells etc. fresh water essential for kidneys function. Fresh water provides efficient way to transfer substances from a cell. Fresh water helps regulate and maintained the other body functions. Body loses water through breathing, sweating, and digestion, it's important to rehydrate by drinking fluids and eating foods that contain water. Apart from drinking it to survive, people have many other uses for water. Fifteen benefits of drinking water. Keeping hydrated is crucial for health and well-being, but many people do not consume enough fluids each day. Water is essential for the kidneys and other bodily functions. When dehydrated, the skin can become more vulnerable to skin disorders and wrinkling. It's importance in human body such as:

Emergence of the problems

Today fresh water used in people mainly waste purpose. In the study of drink fresh water in urban culture such as emergence problem:

- ❖ Bad maintenance of Municipal fresh water supply tapping.
- ❖ Lack of People consciousness about fresh water.
- ❖ Fresh water uses to temple, kitchen, public toilet etc

Objectives

- To find out the use of fresh drinking water and the human behavior of Raiganj town.
- To give some measures to save the water

Research question

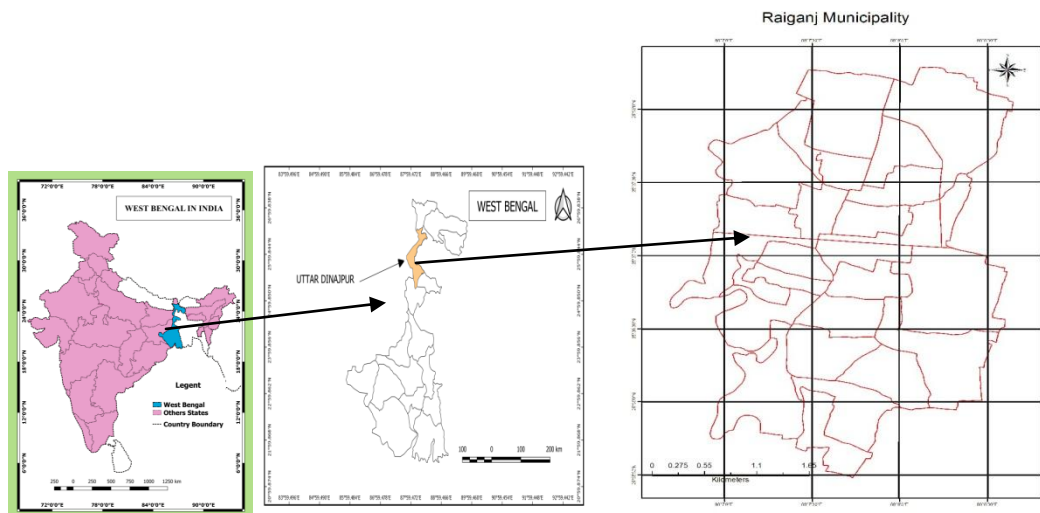
- ❖ What is the scenario of use of fresh water in Raiganj Municipality?

Delimitations

- ✓ Sustainability of expanding access to drinking water while preserving environment.
- ✓ There is poor integration among actors to solve water related problems.
- ✓ Even if access to water and water education is provided to the residents of the study area.
- ✓ First and foremost, a crisis of governance.

About The study area:

Geographical outline of the study area



Raiganj municipality is located on the south western part of Uttar Dinajpur district and river Kulik (a tributary of river Nagor) bound from north waste to south east The town has obtain the municipal status August 1951 is also known for Raiganj wildlife sanctuary (popularly known as Kulik bird sanctuary). The area of the municipality is 10.75sq km consisting 25wards situated 425km from the state capital Kolkata. Total population of the area is 183682 out of which 96565 are male and 87092 are female including a rapid growth according to 2011census record.

Methodology:

1. PRE FIELD WORK: Before going to the field some primary information must be collect from the source like published & unpublished work of the organization concerned(census data, journal etc.),topographical map of the selected area, meteorological data, geological map etc.

2. FIELD WORK: In order to complete my project report i.e., the population of geographical analysis I have chosen Uttar Dinajpur district (Raiganj municipality) of west Bengal. Researcher has chosen statistical method of systematic sampling. In this way I have collected the data about my topic population of geographical analysis. Besides regarding to the investigation of my field work I have gone in different place & offices.

3. POST FIELD WORK: In the post field work collected data have been computed for making the maps on different aspects in a proper cartographic representation for the efficiency way to data structure.

STATISTICAL TOOLS: Surveyor collected data and calculate data to use mean, tally etc.

GEOGRAPHICAL TECHNIQUES TO DATA REPRESENT: surveyor collected data and represents the data to use pie diagram and bar histogram etc.

Used RANDOM SAMPLING: Random sampling is a way of selecting a sample of observations from a population in order to make inferences about the population. Random sampling is also known as probability sampling.

SOURCES OF DATA

PRIMARY SOURCES: primary data sources are mainly house hold survey, restaurant survey, market survey etc. surveyor survey different places to survey purpose and collected data. Surveyor observations and uses questionnaires’.

SECONDARY SOURCES: secondary data sources are mainly collected newspaper clipping, and secondary medium sources such as social media such as facebook.

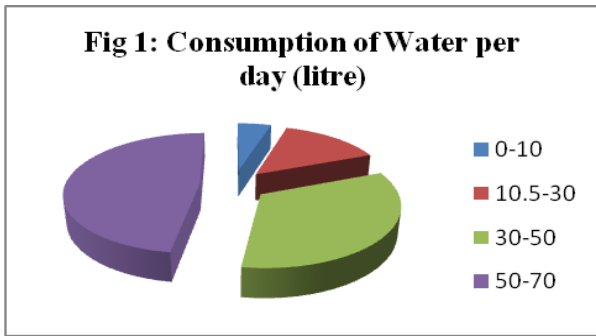
Data Analysis and Interpretation

Drinking water consumption scenario in Raiganj Municipality

Table 1: Consumption of Drinking water

Age Group	Water per day (litre)
0-10	1
11-30	3
30-50	7
50-70	10

Source: Field survey, 2019



In the above image showing to water consumption per day in Raiganj Municipality area. In the above table shows 50-70 age group huge consumption.

Table 2:Source of Drinking water:

Source	Percentage
Tubewell	13
Municipality pipeline	37
Branded bottle water	5
Drum water	45

Source: Field survey,2019.

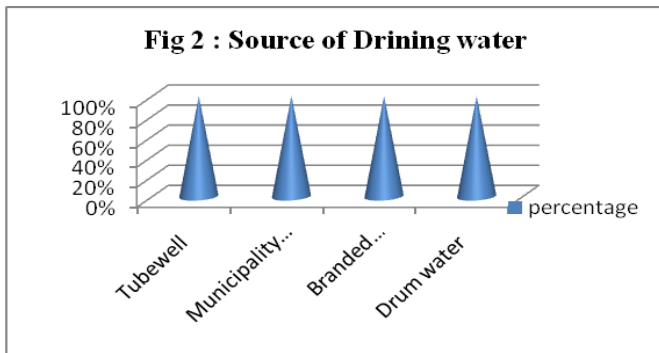


Table 3:Use of Water in Toilet (For House)

Toilet Pattern	Use Of Water(Per Day Lt)
Indian Style	18
American Style	27

Source: Field survey, 2019.

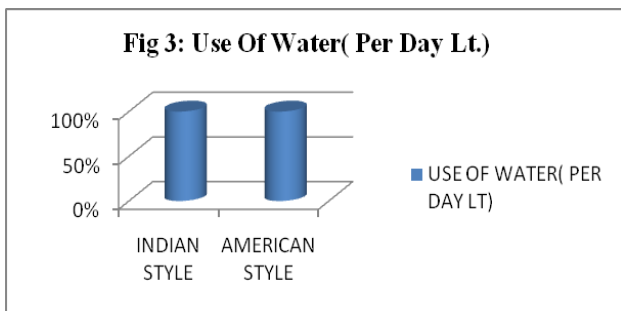
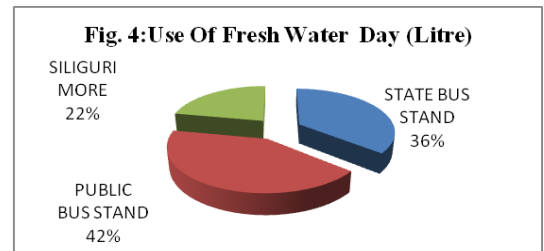


Table 4: Use of Water in Toilet (Public Place)

Public Places(Raiganj Area)	Use Of Water /per Day (Litre)
State Bus Stand	36
Public Bus Stand	42

Siliguri More	22
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Source: Field survey, 2019



Central public health and engineering organization shows to: fresh water management in urban areaand its uses to urban people to daily life. Gidey in his research on: managing of scare resource (fresh water) and its uses in urban governance.



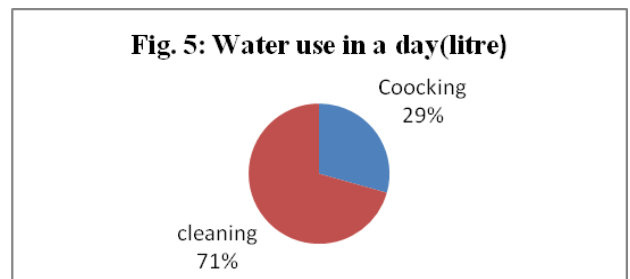
Plate 1: Wasting the Fresh Water at Ukilpara.

Source: Field survey,2019.

Table 5: Use of Water in Kitchen

Purpose	Water use in a day(litre)
Cooking	5
cleaning	12

Source: Field survey, 2019.



Source: Household survey,2019

Table 6: Uses of Water in Households

Purpose	Percentage (%)
Car washing	0.7
Cloths washing	14
Toilet	25
Garden watering	6.1
Dish washing	7.7
Miscellaneous	13.1
Personal washing	33.3
Direct health system	0.1

Source: Field survey, 2019.

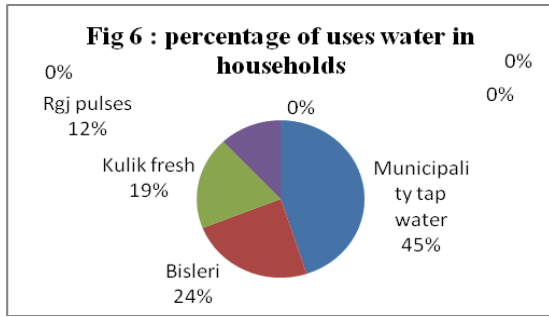


Table 7: Tap Drinking Water Vs Bottled Drinking Water.

Fresh water type	Percentage
Municipality tap water	45
Bisleri	24
Kulik fresh	19
Rgj pulses	12

Source: Field survey, 2019.



Plate 3: Advertisement for consumption of fresh water. Source: Field survey, 2019

In the above picture showing that municipality fresh water van mention to our people do not waste fresh water because it is very necessary to our future generation. So, municipal advertisement to people conscious for save water plan.

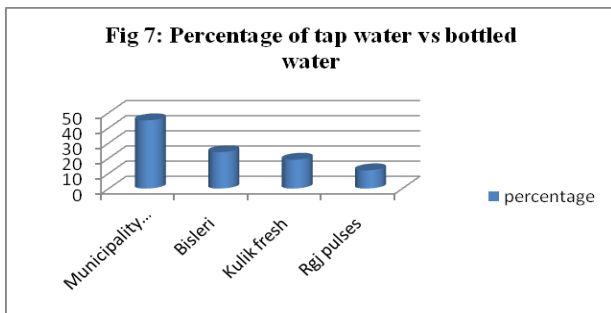


Plate 2: Raiganj Municipality fresh water van.

When surveyor travelling for survey purpose then surveyor see that Raiganj municipality fresh water waste in the road in the area of Raiganj town (Hospital more). In that case it is a very dangerous for our future generation. Because fresh water is rapidly low to the earth surface. So, quickly its consumption to our Raiganj municipality people and take necessary action to our respected chairman in Raiganj Municipality.



Plate 4: Fresh water wasting scenario in Raiganj Municipality. Source: Bartamnews paper, 2019.

Our public tapping water supply system is basically so poor. In the above image have proved water supply tapping system. In the above image have shown one small people save water and consumption fresh water in a bottle. But our local government and municipality have quickly take action to water supply tapping system upgrade quickly.



Plate5: waste of fresh water in Raiganj municipality area.

In the Raiganj Municipality area municipality water supply system is extremely bad condition. In the above image showing that fresh water fall in the place day by day but people have no influxes its impact. Municipal advisory and technical management have quickly take action and save Fresh water supply system. In the above report showing that fresh water in our life very important phenomenon. But our own purpose people its waste and then our earth have decreased there fresh water. Then this time came when people fight again only the purpose of fresh water. In the area of Raiganj Municipality east Ukilpara two people have fight against for the purpose of deposit of water and result that one people fire the another people. It is such a very dangerous issue to our society.



Plate 6: Problem faced by the local people due to lack of drinking water near Raiganj hospital
Source: Ananda Bazar Patrika, 16 June, 2019

In the 2019 16 June Anandabazar Patrika showing that Raiganj Medical College & Hospital arrogate in the front of child department a hand pump system poor condition system. In the result of illness people family members have many problems and they have report their own problems.



Plate7: People waste fresh water (Source: Field survey, 2019)

In the above image showing that people waste of fresh drinking water for their own purpose. In the above image show that how people use fresh water to their own activity purpose.



Plate8: Use of fresh water in new building purpose. Source: Field survey,2019

In the above image showing that people have use new buildings to use fresh water in the purpose of: Bricks, Masala mixing and Wall concrete purpose. In the above purpose people waste fresh water day by day and result to our environment lack of fresh water.

Table 12: Use of Fresh Water in New Building Set Up

Purpose	Water use in a day(per litre)
Bricks	8
Masala mixing	23
New wall	11

Source: Field survey,2019.

Fig 8 : Water use in a day(per litre)

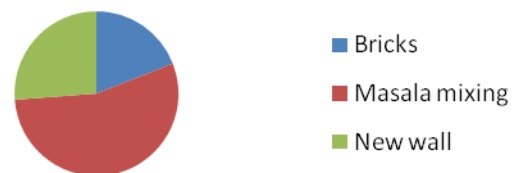


Plate: Fresh water use in new set up buildings.

In the above diagram showing that fresh water use in new buildings such as use of a lot of masala mixing purpose. In the urban area its use such as big issue.

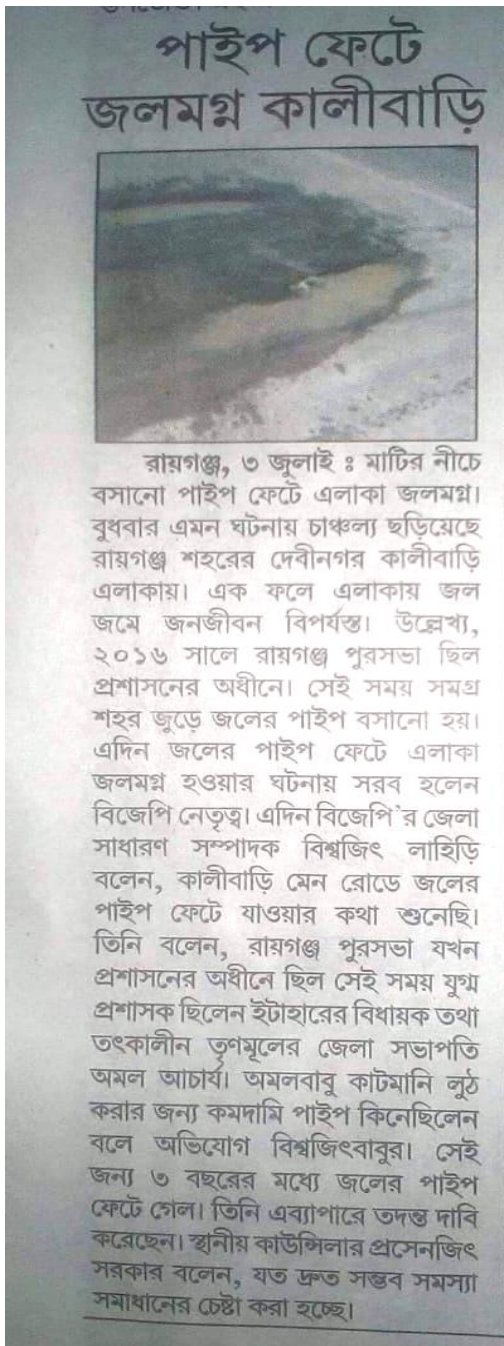


Plate 9 : Destroying the pipes and waste of fresh water at DebinagarKalibari.

Source: *Pratidinpaper*, 3rd July 2019

In the above report showing that our water supplies bad condition system. In the year of 2016 Raiganj area water supply process growing up and pipe system are available in the area. 3rd July 2019 suddenly Raiganj municipality kalibari area municipality pipe blast and fresh water are waste. In that case this area peoples lack their life facility. In the above image showing that people use fresh water in drinking purpose and some times it's use hand cleaning , and others activities. But people don't understand fresh water is one kind of resources to our society. It's never wrong purpose uses.



Plate 10: Drawing of fresh water.
Source: *The express news paper*, 2019

In the above image show to us murder for over collection of water. One day came our society when people against another people just for fresh water purpose. On Friday when people came from water collected some women stop this people because of collected water.



Plate11: Use of fresh water in different purpose.

In the above images showing that fresh water uses purpose in people different ways. Some people its uses bathing, cloth washing, car washing etc. and some people its use drinking purpose. In the about study area fresh water resources here many problems founds such as: Deforestation, Increased population, Lack of People consciousness to fresh water, Municipal fresh water supply tapping bad condition and Fresh water uses to temple, kitchen, public toilet etc.

Fresh Water Management in Raiganj Municipality

In the above image showing that now only human use water. Every animal have own life positive effects in fresh water.



Plate 12: Awareness about water save through wall messages at Arabinda Sporting club



Plate 14 : Way to save water at house. Source: Field survey, 2019

We know to all 12 July water save day. Fresh water is most important phenomenon in our daily life. But today people waste of fresh water in daily life and day by day it's geometrically waste. Its main cause's people have less consciousness to fresh water. So, in Raiganj Municipality area college Para Arabindo sporting club have present there theme SAVE WATER to the medium of wall writing and showing the people to the present day or future day fresh water important criteria. Fresh water such as value able thing in our daily life .But we waste fresh water in different daily works. Today we don't understand fresh water is more important human life function as well as plant life or Earth life. Today our sociologist approaches fresh water demand and it's important to our society. Then our sociologist have arranged different seminar to protect our valuable fresh water.

In the above image show to us water harvesting system. In this above image show to us fresh water recycling and reuse process. In this process water storage and uses in different purpose such as: Cleaning, Car washing, Garden purpose, Toilet purpose, Kitchen purpose etc. Water harvesting is scientific method to reuse in water. But Raiganj Municipality area in this scientific method is not available. Seminars on River water management within Raiganj Municipality to Aware about Water



Plate15: Seminar in water rejuvenation (Source:<http://raiganjblockseminariamge.in>)



Plate 13:Govt of India and political party is giving light on water conservation . Source: *Statesman news paper*,23rd july,2019

In the 'Statesman News Paper' have report water conservation topic. In the BJP parliamentary party discussed the issue of water conservation. Decreased in fresh water is not just a state problem as well as it is all over country problem .Now we see that Chennai city have a very poor condition to fresh water. In Chennai city water bottle price rate as 400 Rs/-. In that case waste of fresh water in our country or society has major issue. So our PMO and home minister and others central minister have discussed conservation of fresh water and better utilization of water in different states.

In the year 2017 Uttar Dinajpur district administration have organized water rejuvenation. In the seminar have main goals is kulik river water rejuvenation.



Plate 16 :Fresh Water is using to clean the fish market of college para bazaar. Source: Field survey, 2019.

In the above image is Raiganj municipality area college Para bazaar market. Here every day when fish markets are closing then two laborers clean this market to use tube well fresh water. When surveyor survey the market then labor says everyday 35 -40 liter fresh water uses cleaning purpose.

Recommendation to save the water and Conclusion:

When surveyor survey the different places then he findings some basic things such as:

- ❖ Today fresh water high rate use in agriculture and landscape irrigation purpose (70.80%).
- ❖ In the survey area huge quantities fresh water use in industrial sector.
- ❖ In the survey area fresh water use in human health concerns purpose.
- ❖ Restaurant, households kitchen, gardening, hospitals are so many area have used huge quantum fresh water used.
- ❖ In this survey area people some people is irresponsible for the Fresh water consciousness.
- ❖ Water harvesting system is not available in the survey area.
- ❖ In the Raiganj urban area huge population growth to declined fresh water recharge system.
- ❖ People used fresh water not only drinking purpose its use car washing, gardening, cleaning, bathing etc.

In the Raiganj urban area fresh water declined day by day. When the surveyor surveys the Municipal fresh water supply tapping bad condition are found such as:

- ✓ Artificial recharged with impaired water quality.
- ✓ Municipality creates advisory committee to purpose of fresh water.
- ✓ Disinfection of treated municipal waste water prior to recharge should be managed.
- ✓ Recovered waste water should be carefully monitored.
- ✓ Assessment of the feasibility of any research technology how to reuse waste fresh water.
- ✓ Ensuring to relate the protection of public health related to the consumption of recovered water.
- ✓ Government should be leadership to fresh water recycle process.

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Plate 17: Message of Save Water at site of handwash zone of Restaurant of Raiganj town.



Plate 18: UN-SDG Goal number 6 for clean water which is important for save water.

Fresh water is a finite and limited resources on earth and increasingly it's polluted day by day. Human demand for fresh water to increasingly use for agriculture, kitchen, car washing, bathing etc. but today municipal waste water treatment facilities have poorly. Today on earth no fresh water are no life found. But our own purpose people increasingly used fresh water and its waste .so when fresh water declined environment imbalanced are formed. Today fresh water declined then Bio-diversity is lack. So our study area municipal administrator have take action and necessary law declared no fresh water waste and just drinking purposes its uses. Now our sustainable development has achieved 17 goals and 6 no goals are clean water. As soon as possible Raiganj municipality has achieved sustainable development goals to fresh water purpose.