KERALA AGRICULTURAL UNIVERSITY
COLLEGE OF HORTICULTURE

In collaboration with Wadakkanchery municipality

"PUNARJANI"

Citizens survey report

of Wadakanchery river, done as part of Rural Agricultural Work Experience Program

Prepared by: 2014 BSc. [Hons.] Agri. Students

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PREFACE

Kerala's aquatic ecosystem is very rich, blessed with a number of rivers, streams, backwaters and wetlands. Although we boast of having 44 rivers, we are equally alarmed by the human activities that alter the balance of this ecosystem. Many streamlets and streams joining the tributaries and rivers have disappeared. Deteriorating width of the streams, landslides along the banks, and pollution of water sources have compounded the already grim situation.

Numerous studies on conservation of rivers have been conducted in the past. However, when a study of rivers is done by agricultural graduates, it acquires a special status. They could easily conduct a study on river and environment and come out with meaningful results. It is in this backdrop that the students of BSc(Hons)Agriculture decided to conduct a detailed study on Wadakkanchery river, the foremost part of the Kecheri river, as part of their Rural Agricultural Work Experience programme.

Originating from the Machad hills and joining thereafter with Choondal river, the river then joins with the *Kecheri Kole* lands at Mathukara and reaches Enamakal lake. It continues its journey, joins the Chetuva lake and finally empties into the Arabian sea. Kecheri river, besides influencing the environment of those places through which it traverses, also significantly impact the *Kole* ecosystem. Hopefully, the study report prepared by the students using state-of-the-art technologies will indeed help in rectifying the mistakes and move forward.

I would like to congratulate the teachers and the students who have shown the courage to take up this formidable task. I acknowledge with thanks the Wadakanchery municipality and the local people whose support and cooperation were indispensable for the success of this great initiative. I dedicate this report to the people of Wadakanchery.

Dr. C. George. Thomas
Associate Dean
College of Horticulture, Vellanikkara

COURTESY

Mr. Anoop Kishor
Vice chairman, Wadakkanchery Municipality

The motivating force that led us to the river study. A people's person, whose sincerity, unstinted support and encouragement which strengthened us.

Mr. Vinod Kumar
Director- Maithry, Muthalamada

The expert trainer, who empowered us to follow the numerous, diverse flowing streams by ourselves, using GIS technology. The technocrat, who lead and streamlined our paths.

Contents

Introduction

The Wadakkanchery river, which originates from the Mechaad hills, after bifurcating itself into many streams and streamlets finally reaches the *kole* land of Enamavu. This serene and beautiful river is an invaluable resource for the life around it. It has a great history to tell about its relationship with people of Wadakkanchery.

The greatest specialty of the river is that, it does not join the sea; like other rivers do. Instead, the whole fresh water of the river serves in contributing to the water table of the areas around it and gives life to the flora and fauna.

Presently the river is moving towards a grave condition due to abuse, misuse and neglect. The municipality of Wadakkanchery is well aware of it and is planning to protect it and try and restore its old glory.

The 2014 B.Sc (Ag) batch students of Kerala Agriculture University have also taken part in this great initiative. The important observations of the citizens survey conducted by the students are delineated in the following pages of this report.

The students surveyed the whole Wadakkanchery river and its 368 tributaries covering an area of 227 km by using advanced technologies like GIS and captured pictures using the app Open Camera which they uploaded and carried out geotagging. They observed the whole river and tributaries closely to feel the pulse of the river, to listen to its woes, to know about its past, present and finally to let its dreams come true.

This report is dedicated to the people of Wadakkanchery, to the able leaders who took the right decisions at the right time. It is a gift for Wadakkanchery from the teachers and students of College of Horticulture. And a rich culmination to the Rural Agricultural Work Experience Programme 2017-2018.

Dr. Jayasree Krishnanakutty
RAWE Course Teacher

Methodology

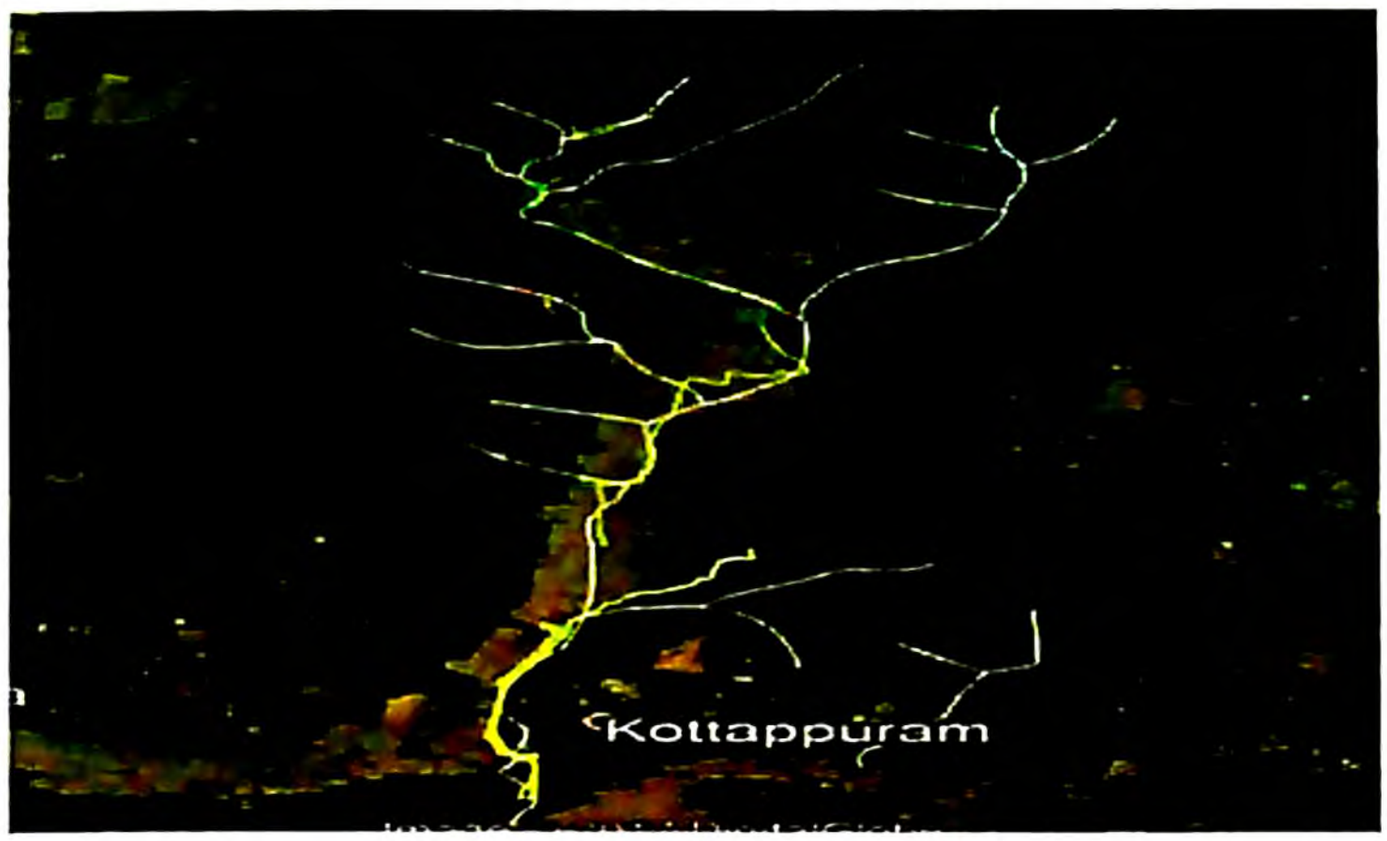
The survey process was held in the Wadakkanchery river for a length of 227 km. the total 58 students were divided into 19 groups each having 3 members for the purpose. The survey was conducted during the first week of January. The app Open Camera was installed in the mobile phone and google earth professional which is a geospatial software was uploaded in the laptop. Shri Vinodkumar, technical coordinator for the river survey communicated the information about route to be taken by each group and area to be covered, via g-mail. With the help of these, the students were able to locate their allotted portion of the river from starting points till the end.

Each group successfully observed the allotted length of 12 km by tracing the path of the river. There were 3 objectives for each group:

- To upload the photos which represent exact condition of the river.
- To observe the flora in and around the river.
- To note down the observations and opinions of nearby inhabitants especially senior citizens about the past and present conditions of the river

The observations and information compiled by the 19 groups with the above objectives are outlined in the succeeding pages. The informations are divided and arranged based on the starting point of each group.

Mangadu



- It is a third order stream
- The stream starts from Vadakkekadu hills and reaches at Aloor River. The stream will be seen in monsoon season only.
- The surrounding has mixed cropping system with banana, rubber, cassava, coconut etc.

Observations

- The streams are well concreted at earliest regions and moving further it was observed that the width is reducing.
- Domestic wastes were dumped at frequent regions.
- There were rectangular weirs and check dams built to manage water flow as required at 8-meter intervals.
- The origin of the stream is from Vadakkekadu hill regions.
- Some of the portions of stream have been encroached by landowners by the sides.

Encroached portions of the stream

1st order and 2nd order streams

Lower order streams from Ayyappanmukku and Cheruchakkichola hills reach the padashekharam to form a third order stream

Observations

- Fragmentation of the stream has been observed in many places.
- Mangad-Chittanda region stream's width get reduced to half metre.
- Only one side of stream was concreated in these portions.
- Some portions have been raised with soil for using as pathway.

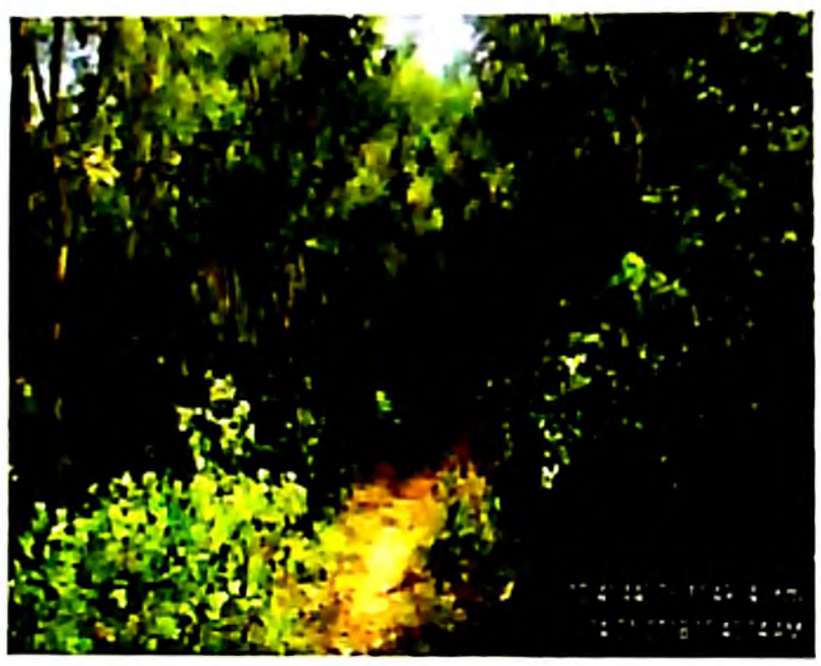
Cheruchakkichola - 1st and 2nd order streams

The second order streams from Ayyappanmukku and Cheruchakkichola hills reach out to the padashekharam.

Observations

The streams from Ayyappanmukku chola reaching padashekharam was protected with concreated wall about 100 metres. And the width was about 1 meter. The stream from Cheruchakkichola hills was protected by concrete walls on both sides. The stream is passing through the acacia plantation.

- Wastes are dumped largely near Cheruchakkichola dam.
- At regular 5 metre intervals the 1st order streams have stone embankment. The streams originate in between the hills of Cheruchakkichola.



Acacia pulpwood plantation

Waste dumping near Cheruchakkichola dam

Third order streams

- The 2nd order stream coming from Mangad-Vadakkumuri region join at Edangazhithodu region.

Observations

- The width of stream passing midway through the padashekharam gets reducing.
- The three ponds (Chaathankulam, Cherankulam, Karamkulam) built for the purpose of water conservation was found near the stream.
- The stream adjacent to the road was only protected along one side.
- The bottles of pesticides used in the rice field are dumped into the stream.

Pesticide bottle found thrown in to the stream

Comments from local people

Satheesan: The water is available from upper portions only. As going a little deeper the rocks are found soon. So, for the purpose of irrigation to the crops, mainly for the paddy the dams are used. The width of stream was only 3 meter in early days and now it's widening to 6 meters. The depth is also increased by panchayat. The maintenance has improved the flooding problem faced in early days.

Subramanian: The possibility of raising the capacity of Cheruchakkichola dam will increase the demand of tourism in future.

Parameswaran: The afforestation with acacia is depleting the water source and is the only reason to reduce the water availability. It should be replaced with dense forest.

Sudhakaran : The water available for irrigation purpose is due to the presence of ponds.

Tresiamma: In this region acute shortage of water has happened in previous years.Wells were fully dried. And this year hopefully the problem will not arise due to the widening and deepening of the stream.

Main crops- Paddy, coconut, arecanut, banana, rubber, cassava etc.

Suggestions

- Strictly avoid the encroachment of streams.
- For preventing siltation vegetation should be promoted in the side wall.
- Avoid dumping wastes in the stream and it should be cleaned at intervals.
- Side wall should be protected.
- Ponds and other water bodies should be conserved.
- Afforestation with healthy and eco-friendly trees.

Chittanda- I

Stream order: Third order type

Observations:

- Many portions of stream seemed to be dried.
- In some area channels were made to paddy fields and other cultivation areas from this stream for the irrigation purpose.
- In some portions of the stream there was deposition of household and plastic wastes which hinders the flow of water through the stream.
- In order to control the flow of water some concrete structures have been made.
- Width of the stream seems to be decreased in some areas due to human interventions.
- Side walls in many areas seemed to be cracked and felled off.
- At both sides of the stream there is tremendous plant growth.

Concrete structure to control the water flow

Stream order: Third order, second order type

Features:

- Poongodu stream flows mostly along the sides of paddy field near to the road.
- The stream flows narrower at places where side walls are constructed.
- Though it has larger flow during rainy seasons, sometimes there is drainage from forests too.

Observations:

- There was high rate of disposal of plastic waste in Poongodu stream.
- Plastic wastes were being dumped to the stream from shops and houses near to it.
- A concrete construction was made in order to control the flow of water at the point where streamlet joins the stream.
- Streamlets from the forests seemed to be dry.
- There were checkdams, constructed by Erumappetti panchayat and sac bundles in the stream.

Sac bundles in the stream

Stream order: 2nd order type – a branch of Cheruthani canal in Chittanda.

Features of the stream:

- Stream is running along the sides of paddy fields and rubber plantations.
- Water emerges from the nearby forest joins this stream.

Observations:

- Plastic wastes have been dumped in the stream from nearby houses.
- Some parts of the stream were completely devoid of water.
- In some drained areas of the stream there were burnt remnants of waste.
- There was great reduction in the depth of the stream due to soil deposition.

Remnants of burned wastes

Stream order: 1st order type- two branches that joins with the Cheruthani canal at Chittanda centre.

Features of the stream: One branch is running along the sides of the paddy field and the other one is along the private plot.

Observations:

- Branches were not clear in some areas.
- Some portions of these branches were levelled by people for their own needs.
- Waste disposal was there.

Streams have disappeared

Comments of people in the locality

Janaki: for a long time now, polluted water flows through the stream. Water flows through it in rainy seasons and get completely dry during summer. Streams are cleaned under the leadership of Panchayat. Though water in the stream is used for washing clothes, mainly it is used for irrigation purpose.

Suma: Width of the stream has decreased gradually. Arrival of rubber plantations and cashew plantations are the reason for this. The part of stream passing near the roads has toilet wastes dumped into it. Paddy fields near to the stream have been leveled. As a

result, water flow in the stream is reduced. Water in the stream is used for irrigation from long time onwards.

Divakaran: There will be a heavy flow of water in the stream during rainy season. Though water coming from the forest is pure it gets polluted due to the disposal of wastes into it.

Prakashan: Streamlets through the paddy fields has now become a part of it. Now water level in the stream has decreased tremendously than before.

Main crops: Rice, coconut, banana, rubber

Suggestions

- Remove wastes from the stream.
- Maintain the normal flow of water.
- Remove the structures that adversely affect the flow of stream.

Chittanda-2

Stream: second order type

Features

- The stream reaches to Aloor river
- It flows through one side of the rice field

Observations

- There was no water in most parts of the stream
- The water from the stream is used for irrigation purpose of the rice field in many places
- In some places, there were ponds near the stream
- The household waste and plastic wastes were deposited in some parts of the stream
- In many parts artificial structures were there to control the flow of water
- Waste water was dumped to the stream in many places
- In some places, the side walls were broken.

Waste water is deposited to the stream through pipes

Stream: second order type

Feature: Stream flows through the rice fields

Observations

- Many houses were built in one side of the stream and in the other side it was converted to rice fields
- There was waste deposition in those parts
- There was a pond connecting the stream in one place
- There was difference in the depth of the stream in different places
- The stream was protected with side walls in one side only in some places.
- The direction of flow of the stream was deviated from the map
- Stream was dry in many places
- Near the rice fields, the width of the stream was less
- There is presence of different flora and fauna in both sides of the stream

Levelled part of the stream near rice field

Waste disposal to the stream

Stream order: second order type

Observations

- There were houses in one side of the stream and rice field in the other side
- One side of the stream was protected with side walls
- In some places, the water was taken for irrigation purpose to the rice field
- The width of the stream was decreased in the rice fields
- Waste deposition was there in some places
- Waste water was dumped in to the stream in some places
- One of the streams reaches to a pond

Stream order: First order

Observations:

- The stream flows in different directions
- The stream gets water from nearby hills and other places through small channels

- During rainy season water passes through roadside and finally reaches the streams, however, they soon get drained.
- Due to encroachment of houses and rubber plantations the width of streams gets reduced.
- The sides of streams are supported by boundary walls of houses
- However, roads have been constructed breaking and filling this steam in places.

Comments from local people

Leela: Earlier the width of stream was larger and sufficient water was there to meet people's requirements. However, due to encroachment of land, the stream gets disappeared. Now small channels are provided to meet agricultural purposes.

Francis: Due to encroachment of houses and rubber plantations the width of stream gets narrowed and there is no flow of water

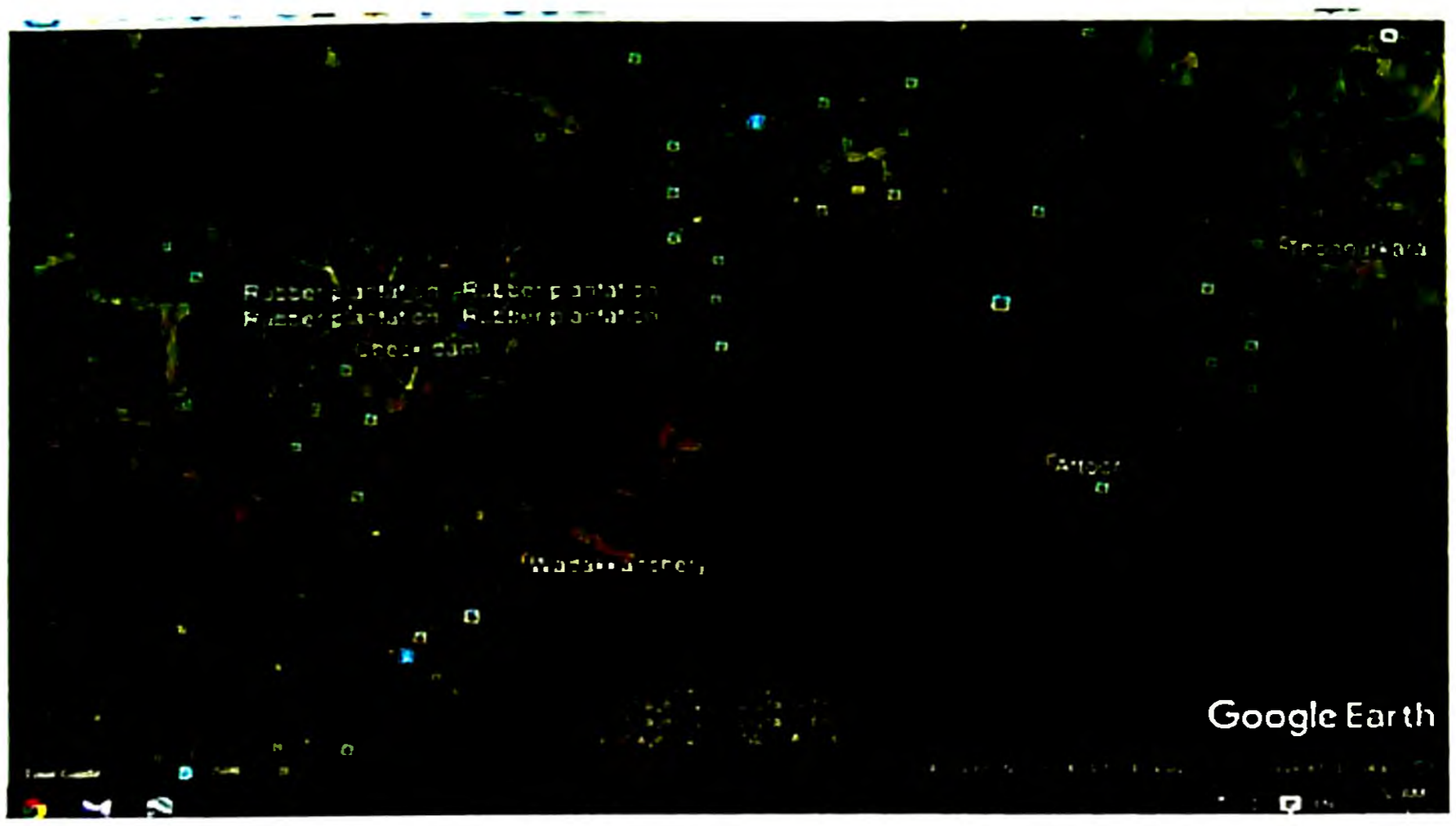
Main crops:

Rice, rubber, banana, arecanut

Suggestions:

- Avoid dumping of waste into streams
- Prevent encroachment of land
- Avoid conversion of streamlets into land

Kanjirakode



- It is a zero-order stream
- The sides of the streams are concreated

Observations

- The streams were very small, zero order.
- Domestic wastes were dumped into this stream
- Water in the stream was dark in color, with a foul smell showing clearly that it was contaminated
- The origin of the stream was a forest
- The bottles of pesticides used in the rice field were dumped into the streams.
- The stream was obstructed in many places by constructions and other human interventions

Rice is cultivated in the stream

Kanjirakkode- Kumaranallor

- It is a first order stream
- No water has been observed in streams
- The width of the stream is 90cm and length of about 2 km

Observations

- Waste dumping into the stream and its waters were contaminated
- Near to the houses the width of the streams was often tapering
- Water flow in the streams very less
- A pulpwood plantation has been observed through which also stream flows

Plastic wastes are dumped into the stream

Wastes are burned in the stream

Kodumbuchathanchira

- It is a first order stream
- Water is the stream is very low

Observations

- The covers of the pesticides have been seen dumped into the streams
- Plastic covers were also observed
- Water flow through streams practically nil
- Check dams built in many places but they were all in poor condition
- The pond near to the road was mainly used for irrigation purposes.

The covers of pesticide

Check dams are constructed

Kumaranellur

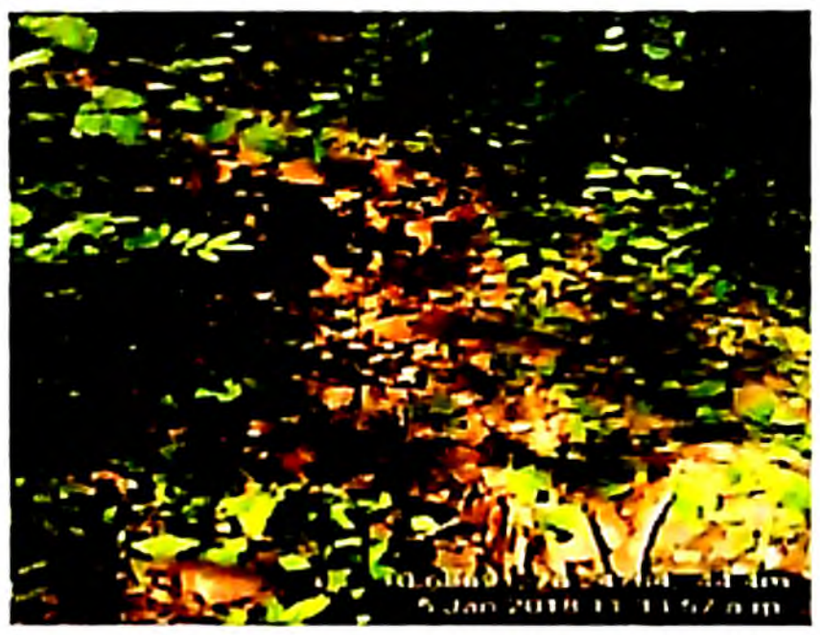
- Stream is first order.
- It has 1m width and 2km length.
- Stream was not protected by constructing sidewall.

- It was situated in the forest area.

Observations

- The stream that was in the map was now replaced by forest
- The team reached a rubber plantation by following the stream. Then they moved to a pulp wood plantation. Stream was not found in both places. But there was a stream moving parallel to the plantation, which was not in the map.
- The stream was fully covered by forest.
- The stream was less polluted but the width was varying.
- The water coming from the higher altitude was conserved there by creating bunds. There pisciculture was practiced by some farmers.
- The conserved water reservoir was the major water resource for the Mullankaragrama panchayat and Erumappetty grama panchayat.

Rubber plantation instead of stream



Unpolluted stream

Pisciculture practiced in the stream

Comments from local people

Sreedharan: The drainage outlet of nearby shops and houses are to the stream. The width of the stream is not uniform due to encroachment by local people.

Sreeja: The stream contains water only in the rainy season.

Dilsha: The stream does not contain any water flow. So, the local people give least priority for stream in their life. Most of the people now use this place for burning the wastes from houses.

Manoharan: The stream is not used for any irrigation purpose. Water flow will be there only in the rainy season.

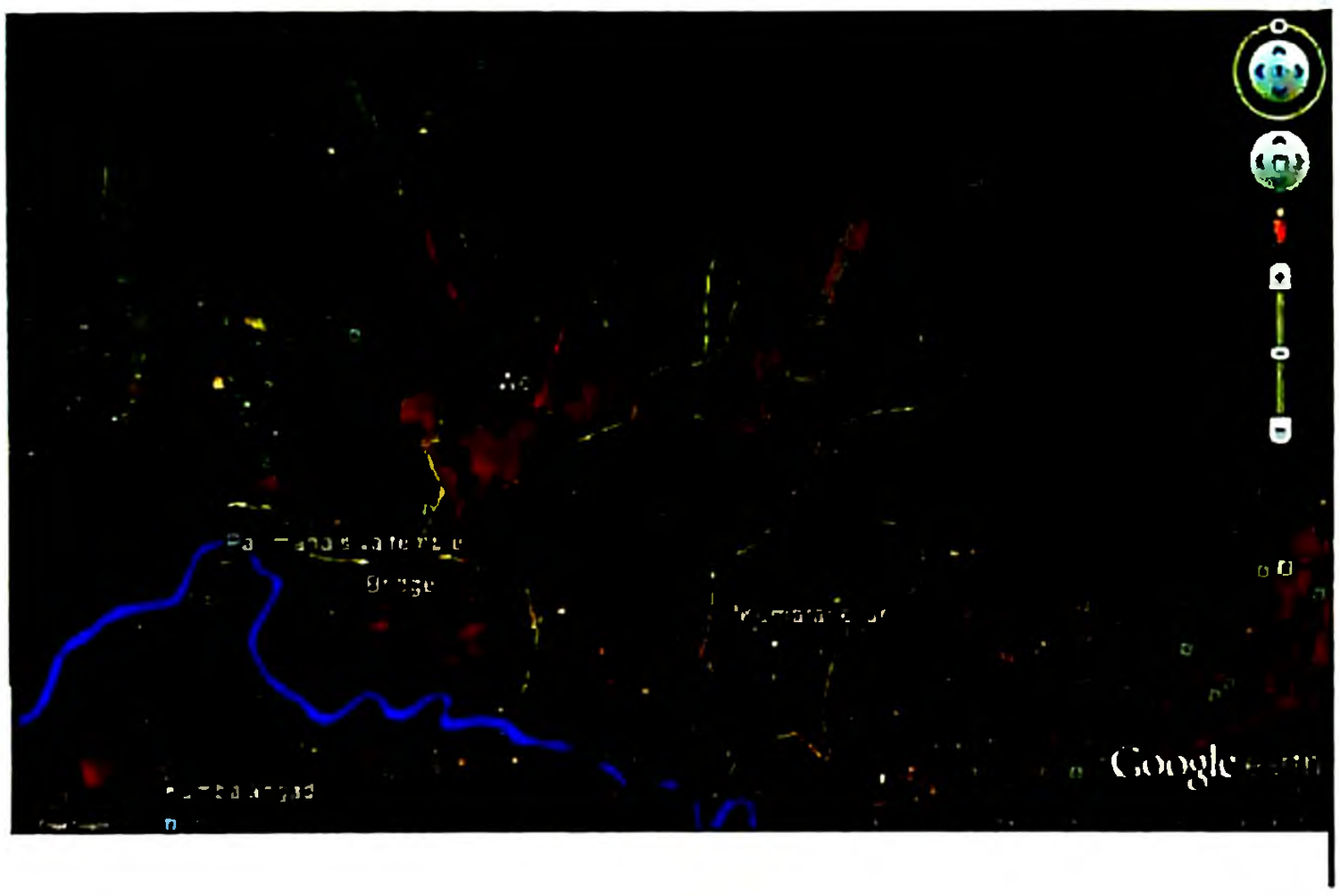
Kuttynarayanan: After the construction of the road the stream was diverted. During his child hood the stream was used for irrigation purpose but now pond is constructed for that.

Murali: During his childhood the stream had a very good water flow and that was surrounded by paddy field but now the area has changed into a forest.

Suggestions

- Dumping of wastes in the stream should be prevented
- For preventing siltation vegetation should be promoted in the side wall
- Wastes in the stream should be cleaned and waste depositing stopped.
- Side wall should be protected.
- People should be educated about the importance of stream.

Kanjirakkodu stream – The third order type



The third order stream reached to the Aloor River. On the right side of the stream there is a marshy land. The banana is cultivated on the left side of the stream. The stream is going through Juma Masjid. Some streamlets are coming in to the stream and their width becoming less.

Observations

- The stream was full of plastic waste and other materials.
- Household wastes dumped in to the stream.
- Nearby houses and buildings completely misused the stream.
- From houses there were four pipes and their outlet were in to the stream.
- After Juma masjid some part of the stream was filled with iron rods.

Kumbalangad stream –the third order type

Survey was started from Kumbalangad. The third order stream was crossing through the Vadakkancherry- Kunnamkulam road.

Observations

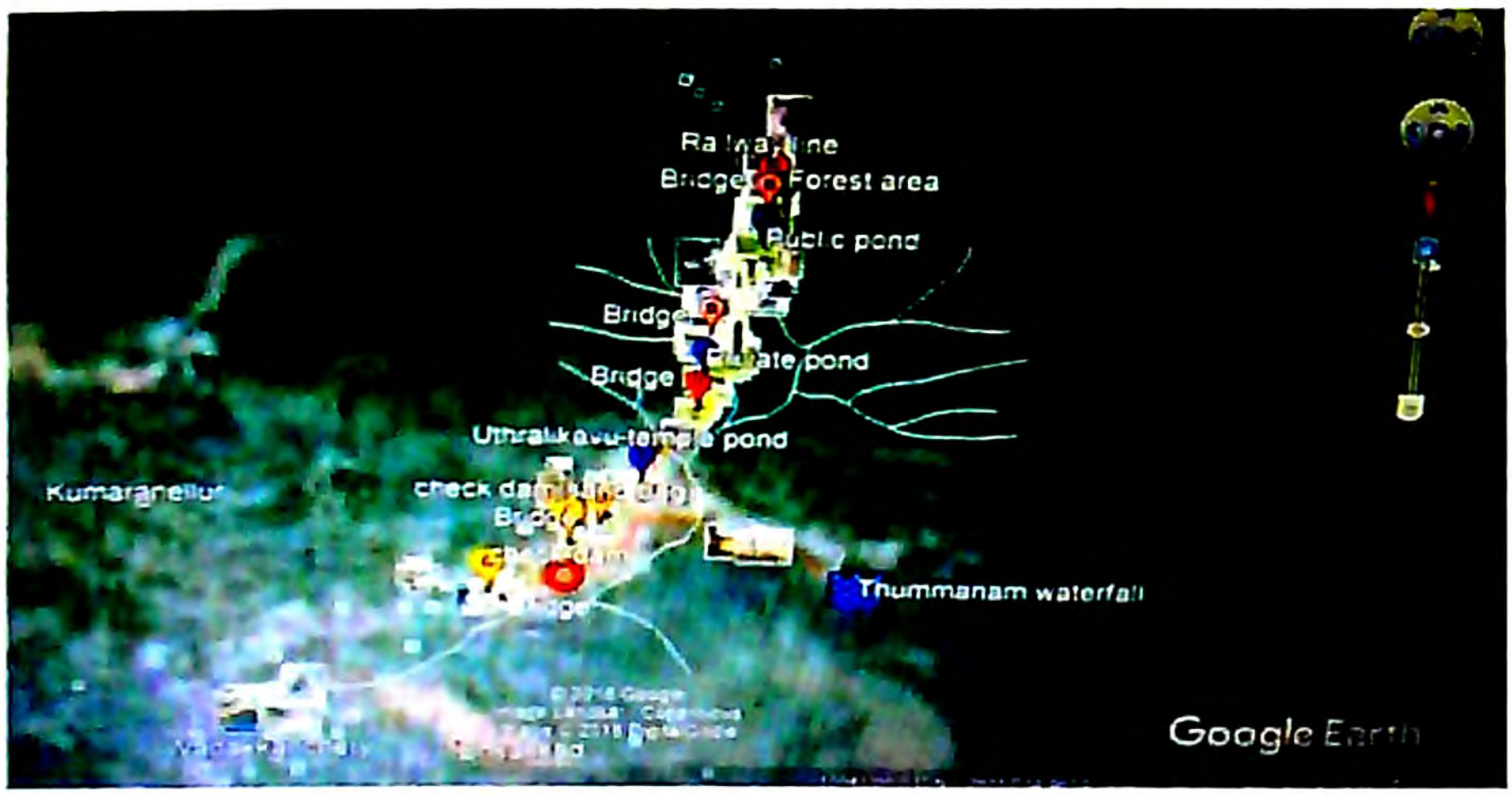
The stream was dry almost thorughout. The stream was full of waste materials. The house hold wastes were separately put in a plastic cover and directly dumped in to the stream. Near Kumbalangad road there was a well, it was used for irrigation purposes. In the stream, some areas were full of weed growth. Check dams could be seen throughout the stream. On the right side of the stream there was non-cultivable land. Check dams were broken in some places by people. The water from the paddy fields was also coming into the stream.

Kanjirakkodu

Observation

- Dumping of waste at night
- Dumping of hospital waste into the river causing skin problems and other health issues among people who use river water in these areas.
- That water was not suitable for drinking purpose.
- In earlier days the water was in flowing condition. Nowadays, the water was comparatively less in rainy season and in summer season the stream became dry.

Ottupara



Stream order number -4

Observations

- There was no sign of stream where it was supposed to start.
- Sides of the stream were concreted.
- Wastes were disposed in the stream

Stream converted to drainage channel

Thummanam

1st order stream

Observations

- Stream was converted into a drainage channel.
- One side of the paddy field was rubber plantation and the other part was mixed cropping. (coconut, arecanut, and banana)
- The origin of the stream was from a nearby forest.
- There were landslides on both sides.
- The water was used for agriculture.

2nd order - Thummanam waterfall

Observations

- The water coming from the waterfall and stream was about 3 meters wide.
- There were landslides on the sides.
- At 10 m, it was found that the stream was made to be blocked by sand bag and the water was diverted to the nearby paddy field.

Dried stream

Akamala temple

Ist order & 2nd order

Observations

- The origin was from the forest.
- 1st order streams originated in the forest and flowed through the bottom of the railway cross and meet in the 2nd order stream.
- A large pool was located near to the temple.
- This 2nd order stream passed near to the right side of Akamala Ayyappa Temple.
- The wastes from the temple were disposed to the stream.
- Then the stream flows across the Shornur- Vadakkancherry road.

Akamala

First and second order

Observations

- Initially, the stream was only one meter wide.
- Waste containing plastic covers were disposed into it.
- After covering half kilometer, a bridge seen across the stream.
- There was sand bag across the stream
- It was found that another stream from opposite side of the rail track was joining to the main stream.

- Then the stream flows through the back side of the Uthralikavu temple.
- Water from the stream was used for rice cultivation.

Water flow blocked using sand bag

Information gathered from nearby local people

- Mrs.Ramani: She told that there was no stream in that area.
- Mr.Vavachan. He said that stream flows only during rainy season in that area, and it dried up in the summer. Water was used only for agricultural purposes.
- Mrs.Mary E.V: She told that drinking water was taken from there. But now there is no water in the stream, and they suffer from sever water scarcity
- Prabhakaran: Previously, the stream was very wide and the water from stream was used in three seasons. But now there is severe water scarcity in summer.

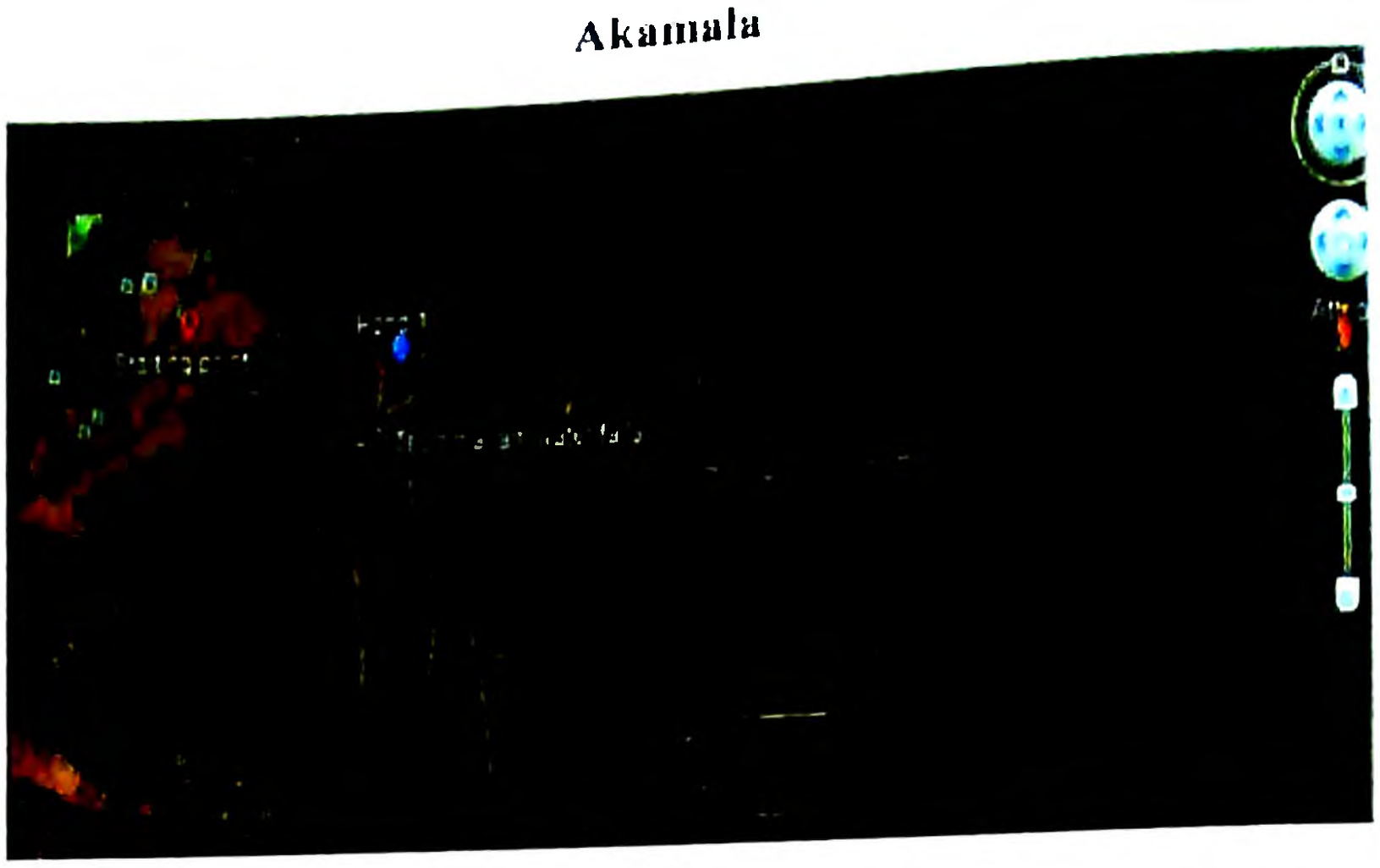
The main crops

- Paddy
- Arecanut
- Banana
- Coconut

Suggestions

- Avoid disposing wastes in the stream
- Protect both sides of the stream
- Construct bunds across the stream for water infiltration

Akamala



Stream–Third order stream starting near Uthralikkavu temple at Akamala.Two second order streams from Thummanam waterfalls join into the stream

Observations

- The stream was flanked by paddy fields at one side and Rubber plantations on other side.
- The sidewalls of the stream passing along the side of main road had been eroded. Plastic dumping was also seen at some parts.
- Water flow was absent in parts where it was directed to Thummanam water falls.
- Human population was very less in this area and both sides of the streams were farm lands.
- Siltation was a major problem in parts near Thummanam water falls.
- Some of the branches of stream marked in the map were not seen.
- In some parts Panchayat have taken initiative to construct side walls.
- Water flow was absent in summer season in these areas. Majority of the water was used for agricultural purpose

Siltation

Waste dumping

Stream- Second order stream (Chepilakkadu)

Observations

- The depth of the stream has been reduced
- Siltation was seen in many parts.
- Water flow was completely absent in summer season.
- Rubber was widely cultivated sin stream-sides
- Human inhabitance was very less hence, pollution was also less.

Stream without water flow

Stream–Second order stream (Akamala)

Observations

- Paddy cultivation at the banks.
- Water flow and depth of the stream was less in this area.
- In some parts Paddy fields have been merged with the stream.
- The overgrowth of the vegetation at the sides has resulted in reduced dimension of the stream.
- As the stream move further Rubber plantation was seen at the banks.
- The stream joins Thummanam waterfalls.

Paddy field merged into the stream

Main crops

- Rubber
- Coconut
- Banana
- Arecanut
- Rice

Comments from local people

Vijayalaxmi Parayil: The depth and dimension of the stream have been reduced in the past years. Conversion of the Paddy lands has also affected the flow of stream.

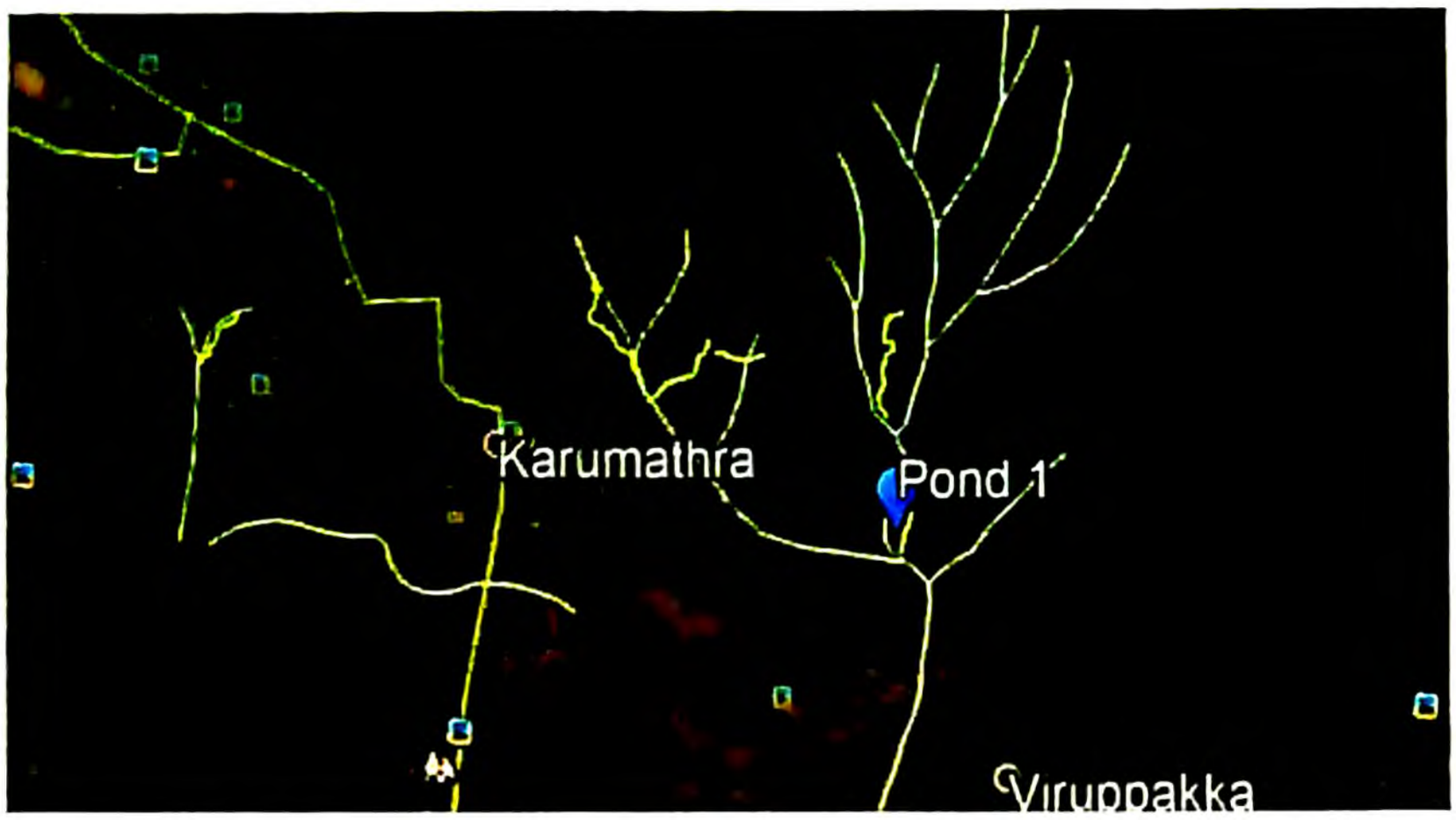
Balan: It has been observed that in the past few years the stream overflows with water in rainy season and dries up in summer.

Mary: The most serious problem faced by the people is water scarcity. Earlier farmers were cultivating 3 seasons of Paddy but, now they are cultivating only two seasons. Severe water scarcity is faced during third season.

Suggestions

- Measures should be taken to clean the plastic waste in stream.
- Erosion resisting plants should be planted in areas where siltation is a problem.
- Scientific construction of bunds should be recommended to conserve water.
- Water conservation measures should be taken at basic level and people should be educated on judicious use of water

Ravipuramangalam



Streamlet–First order type- Mangalam embankment

Observations

- This streamlet originates from Vazhani Dam
- Paddy was the main crop on both sides of the embankment. It was usually cultivated in three seasons.
- Around 10-20 years ago itself the embankment was well protected from landslides using concrete walls.
- These types of walls were found only at a few locations.
- No considerable pollution issues were found due to the lack of human inhabitations.
- Growth of *Salvinia molesta* was found as a menace at some points.
- In some places the protective walls have been torn down.
- The width of stream was found to decrease gradually as we go forward.
- Water was made available to the fields by cutting small water channels from the stream.

Menace of *Salvinia molesta* growth

Viruppakka

Streamlet-First order type- Vattavalappathodu

Observations

- Origin of this channel was from the Perappara dam.
- It was about 1.5 meters wide but found to decrease in width as we go forward.
- There was lot of debris in the channel.
- Water flows through the channel only during rainy season.
- Water in the channel was used for laundry and bathing and was not used for drinking.
- Vattavallappathodu(channel) passes by beneath the Karamatra-Vazhani road and joins the Aloor river.
- Many bunds were constructed across the flow of the channel.
- Only one part of channel was protected with stone lining.
- Wastes from houses were found dumped into this channel.

Water channel with width gradually decreasing

Karumathra

Streamlet- First order type, second order type

Observations

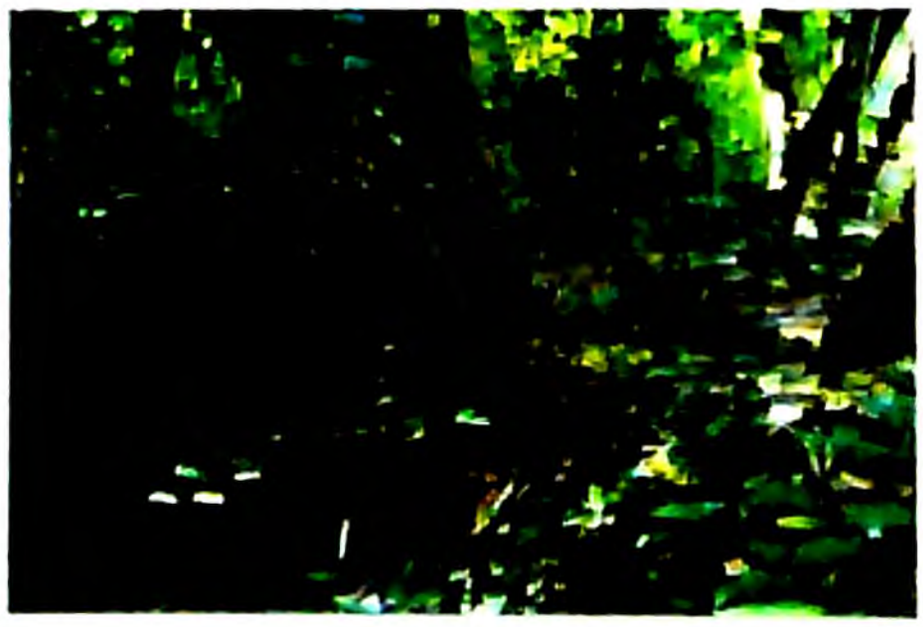
- Stream flows only during rainy season.
- Water mainly comes from the nearby forests.
- Water from the stream was used for the purpose of farming.
- The flow of stream gradually ceases after rainy season.
- Width of the channel was gradually decreasing
- Water was conserved with the help of bunds.
- The broad channel passage is now outraged for road construction.
- Towards the origin of the channel there was a small spring inside a rock mass which was utilized as a drinking water source.

Fountain inside a rock mass

- Encroachment was more as the channel was passing through the front of houses and private fields.
- Channel entering the second streamlet has totally disappeared.
- Towards the end of channel, it flows through the front of houses. There stone walls were seen on either side of the channel.
- Beginning portions of the channel were flowing through a private rubber plantation. The sides of the stream were largely eroded and there was encroachment by private owners.
- At some locations burned wastes from houses were found.

Encroachment of water channels with private walls

Encroachment by construction of road



Water channel passing through private holding

Comments of nearby residents

Suresh: Around 10-30years ago most of the channels had a width of more than three meters. Today encroachments have made the channels disappear. They had underground spouts which ensured plentiful water even during summer seasons. Planting of acacia and eucalyptus plants in mountains have led to decline of natural fountains.

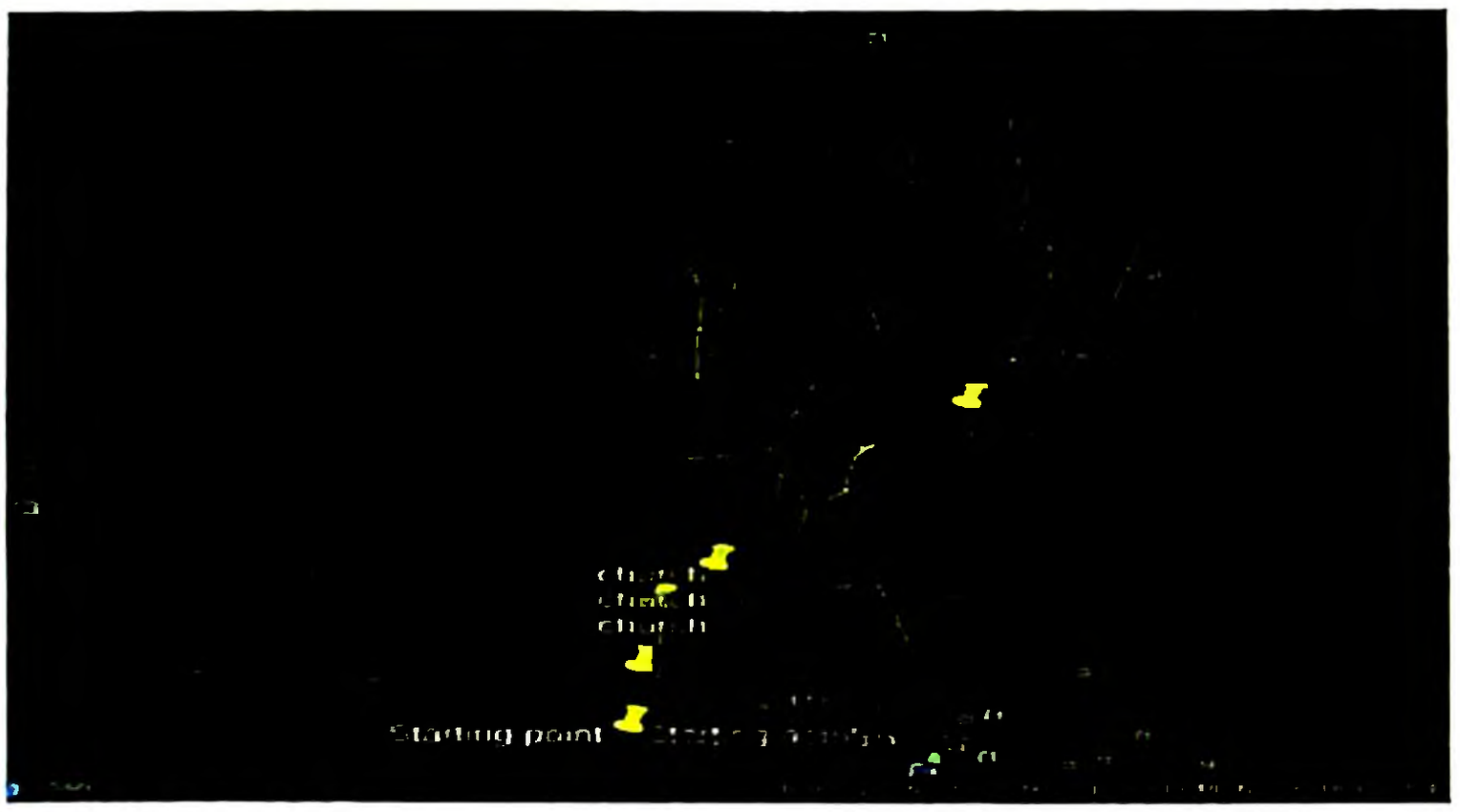
Kuttan: Dumping and burning of wastes in channels lead to water pollution. Water usually flows through channels during rainy season only. Water from channels is only used for cultivation purposes.

Girish: Construction of concrete walls has added to the cleanliness of channels but it has led to the decline of springheads. Fish population has considerably decreased than that of the olden days. Growth of *Salvinia molesta* has become a menace.

Suggestions

- Capture back the encroached portions of channels.
- Clean and increase the width of channels.
- As topography is with slopes it will be better to adopt soil and water conservation strategies to ensure the flow of streams during summer season also.
- Build as much bunds as possible.

Kakinikkad



Streamlet: Fourth order type

Features of streamlet

- The streamlet is about 2 km in length and 2 m in width
- The stream originates from forest and has flowing water only at the time of monsoon

Observations

- The stone walls have worsened the condition of the streamlet
- Drainage pipes containing waste water were diverted into the stream at some places
- Alongside the stream, a well has been constructed from which water was used for irrigating nutmeg
- Plastic wastes were deposited in many places
- Dilapidated walls have led to reducing of the depth of the stream

Streamlet: First order type – Kakinad

Features of the streamlet

- Two small streamlets have joined to form a bigger streamlet
- It originates from forest

Observations

- Embankments have been constructed by blocking the water flow with soil
- Continuous silting has diminished the depth of the stream
- Some streams were completely dried

Streamlet: Third order – kakinikad

Observations

- Streamlet crosses the roads and enters the forest area

- Streamlet originates from forest but loses its strength of flow soon after
- Broken beer bottles and plastic have been observed

Opinions of people from neighbourhood

Shaji: Unlike earlier times, there has been a significant reduction in the quantity of water in the streamlet. The main reason behind this is that most of the water from the hill top is diverted towards Vazhani dam. Also, intermittent droughts have reduced the flow. The regular cleaning of canals by the Kudumbashree unit at proper intervals has prevented pollution of the streams.

Kunjappan: Though the width of the channel has not seen any drastic change over the years, many streamlets have dried. Increasing the construction of dykes will recharge the groundwater

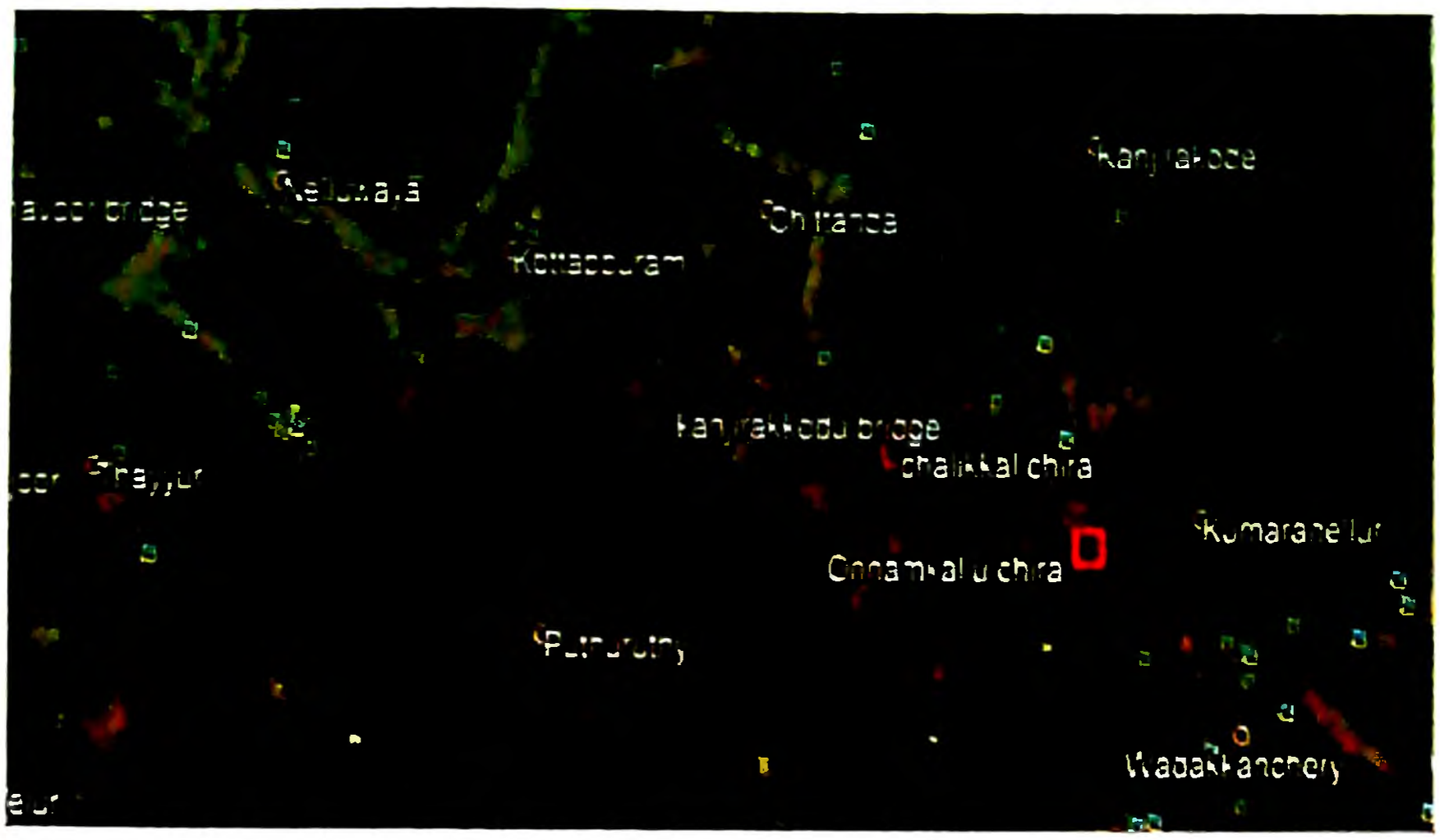
Jose: The width of the canal should be 6 meters. Besides that, rain pits and water storage structures need to be constructed. It would be good if rice cultivation is revamped. Decades ago, this place was replete with rice cultivation which has now been cleared for rubber and cocoa.

Main crops: Coconut, Arecanut, Cocoa and Rubber

Suggestions

- Increase the number of dykes
- Removal of plastics and wastes
- Desilting
- Restoration of lost width of streams

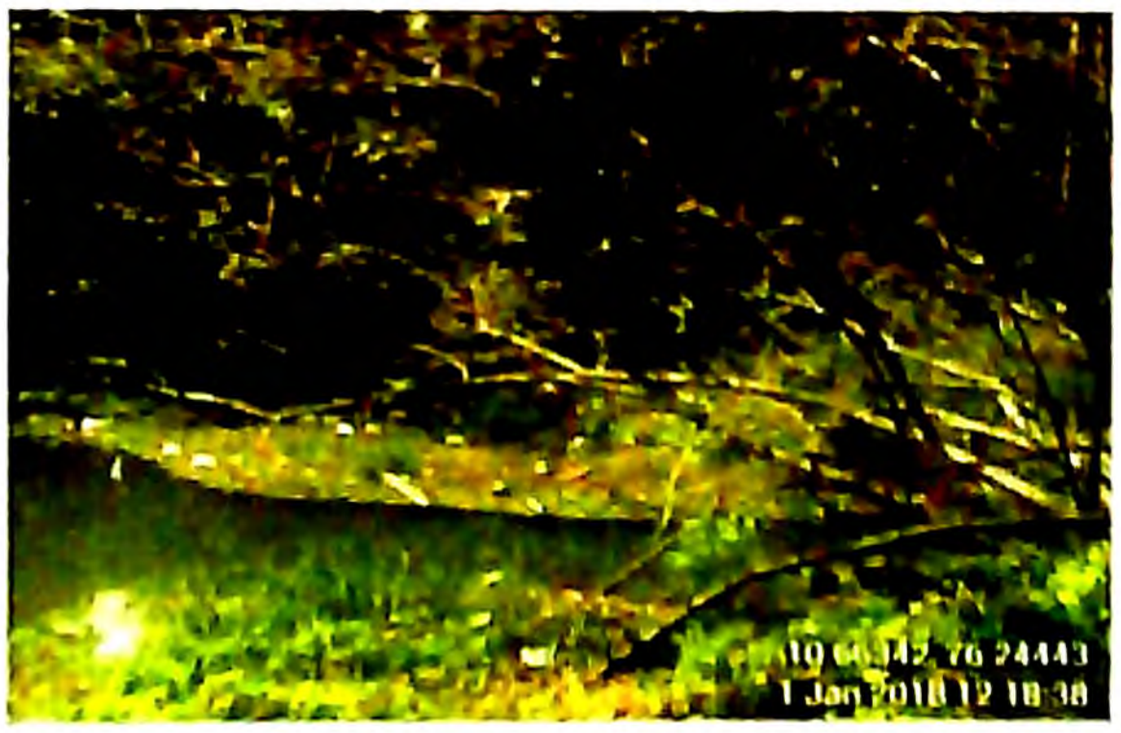
Right side of Kecherry river from Wadakancherry to Nelluvayi



From the backside of the Divine Medical Center in Wadakkanchery to Onnamkallu.

Observations

- The river was bordered on both sides by kallukaiyala near Wadakanchery Shiva Temple.



Accumulation of plastic wastes in the river

- Waste discharges from the hospitals and households were deposited in the river.
- The river was contaminated with plastic bottles and covers.
- In some areas the river becomes shallow due to sedimentation and the flora flourish there.
- As part of Malabar Irrigation Package, Wadakkanchery, water from the river was diverged to farms through the canals
- In the Kumaranalloor part of the river, certain areas were encroached by the residents.

From Onnamkallu to Kanjirakode.

Observations

- Water is used for bathing and laundry.
- The river splits after the Onnamkallu Vented Cross Bar.
- After about two hundred meters the two braches join again.
- As you go forward, the width of the river decreases.
- As we move downwards the density of the population decreases and becomes vast agricultural fields. Hence the waste accumulation in the river decreases.

Water used for bathing and laundry

From Kanjirakkode to Kundannoor.

Observations

- The region near the Kanjirakode bridge was bordered on both sides.
- As we go further, width of the river increases.
- The streams passing through the town area brings polluted water to the river.
- The river was covered with *Salvinia* and other weeds.
- Plastic waste was accumulated in the river.
- As we go ahead depth of the river decreases and eutrophication occurs.
- In the regions of the Challikalchira, people use water to bath, laundry, cultivation of paddy etc.
- Near the regions of the Peringirichira, the sidewalls were damaged.
- Trees were fall into the river. This blocks the waste in the sides of river.

River filled with aquatic weeds

From Wadakancherry-Muttikkalchira to Erumapetty-Nelluvai

Observations

- The sides of the river near Muttikalchira were protected with stonewalls.
- The water in the river was diverged through the canals for the need for cultivation.
- Muttikalchira were founded in 2009-10 as part of Malabar irrigation package.
- On the Nallamkallu region the river was muchnarrower
- The bund was made of sand sacs near the Kottappuram bridge. The cement bund was also present beneath the bridge. The right side of the bund was damaged.
- Plastic waste was deposited at the bottom of the bridge.

Main crops:

- Rice
- Coconut
- Arecanut
- Banana
- Rubber

Comments by the residents

Gangadharan: In the early days, the water could he used to drink and bathe, but now the water is polluted. It is only used for irrigation.

A.Parameswaran: In the past, the area was used for nursery for paddy. Later it was used to cultivate coconut and bananas during the past thirty years. The quality of water is deteriorated due to the hospital waste and toilet waste causing skin irritations and other diseases. This river is replenished from the Vazhani dam. During the summer season, the river is completely dried up.

Ramachandran: The waste water from the town area comes to the river through the streams of Nelluvai. The width of the river is much reduced compared to the previous times. The river over flows in the rainy season. This adversely affects agriculture.

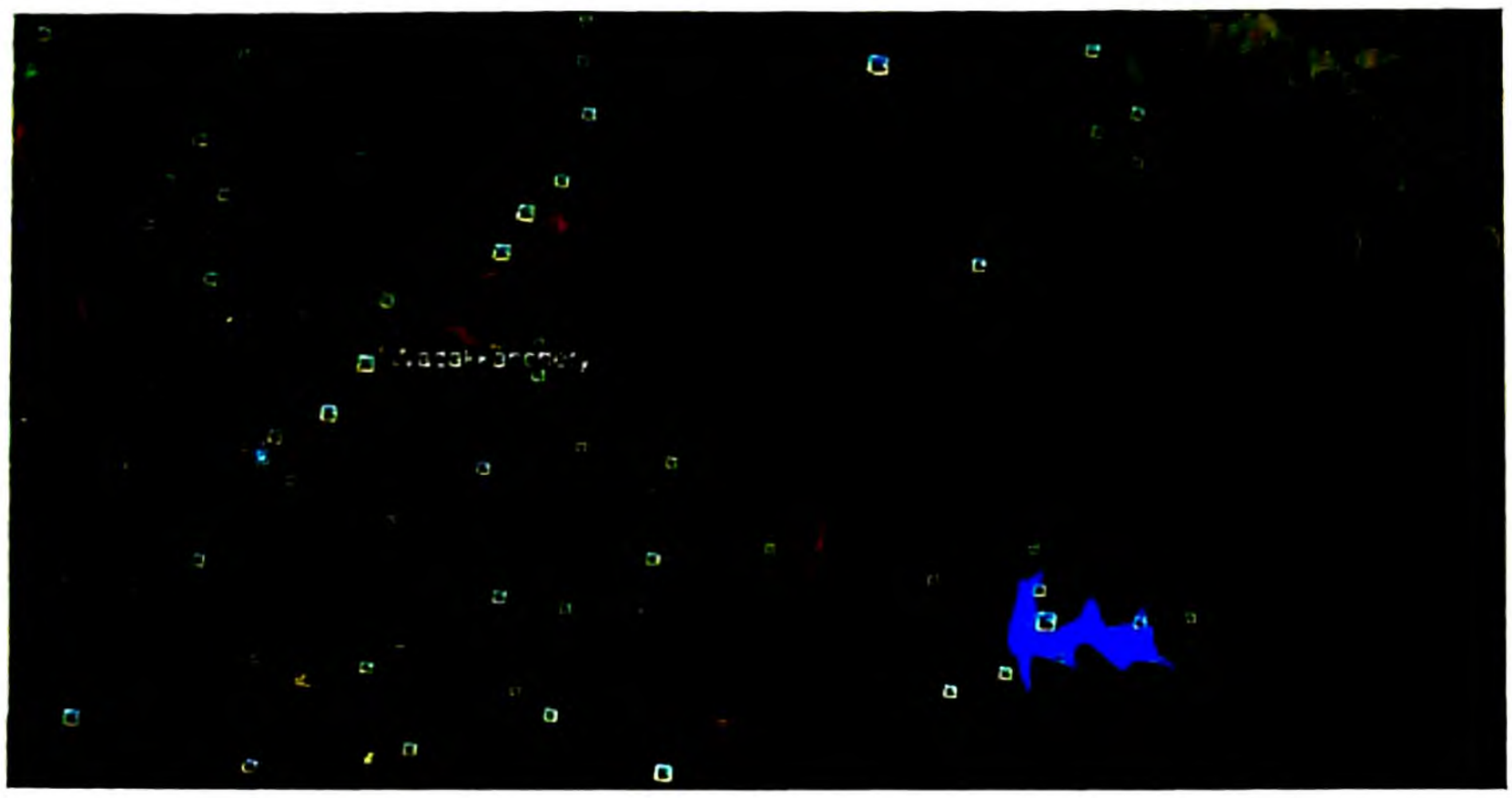
K.Mathukutty: As a fishermen, he spoke about reducing number of fishe in the river.

Jacob: The 91-year-old Jacob who lives near Kottappuram bridge talked at length about the river. In earlier days the river was used for fishing, household purposes and also for mining of sand. These were auctioned through panchayat. The river was very deep and wide in earlier days but now sides are occupied by the local people and depth reduced due to accumulation of soil.

Instructions

- Remove the waste accumulated from the river.
- Remove the soil deposited to increase the depth of the river.
- Remove the aquatic weeds from the river.

Right side of Aloor River- from Vazhani to Wadakkancherry



River survey from Vazhani to Wadakkanjeri up to Divine Medical Center

Ottupara, Wadakkancherry

Observation

- Near Ottuppara, river was highly polluted. There was decrease in the width of river
- There were some encroachment areas where motor pumps were fixed.
- Some places of river basins were fixed with stones.
- From some buildings effluent wastes were discharged in to the river.
- Due to stream bank erosion, depth of river has drastically decreased.

Plastic wastes

Kallankund Bridge

Observation

- One side of river basin was stone pitched due to the construction of bridge in that area.
- Opposite side was eroded and the depth of the river decreased. River water was used for cleaning purpose of clothes, other utensils and livestock animals.

- About 400m away from Kallankund Bridge, there was a small bridge. Near this bridge there were two houses from where toilet wastes are discharging to the river.

Inward flow of river

Small stream joining the river

- About 75m away from the starting point there was a small stream joining to the river. Here the river banks were eroded and the soil from the opposite bank was being pulled inwards to the river. Due to this reason, crop loss was occurring in coconut, arecanut etc.

Mangalam Ayyappankavu

Two small streams joining the river

Observations

- Here the river has a width of about 30m.
- River basins were eroded drastically near the turning points.
- There were trees and shrubs which were planted illegally by the people after the deposition of soil. There was a chira named Neeliyara chira and in this area, the river has a width of about 10 m width and the banks were concreted.
- From there onwards the width was decreasing gradually and about 700 m away two small steams were joining with the river.

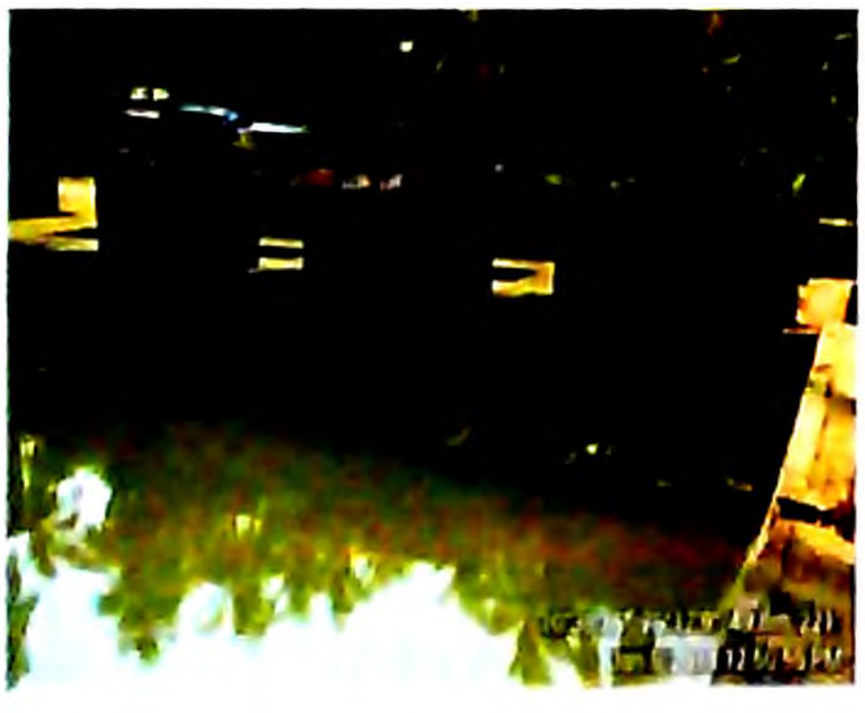
Converted river area for cultivation of plantation crops

Vazhani

Observation:

Mannathichira

- This was an **unpolluted area**
- Some places were fully filled with algae.
- River had varying width in places.
- Kattilera,84, Parayanchira, Mannathichira were the other cross bars across the river



Mannathichira

River filled with algae

Major crops:

- Rice
- Coconut
- Arecanut
- Banana
- Rubber
- Nutmeg
- Tarmeric
- Tapioca

Opinions of the local residents:

Smt. Rahmat: River depth and width are reduced today. Waste deposits are increased and the water is unfit for drinking and other purposes.

Sri.Martin: Eight years ago there was a programme conducted for increasing the width of river. After the program was over, the soil that was removed and heaped at the sides, fell to the river and those became cultivated land.

Sri Balakrishnan: There the width of river is reduced to 40 m from 125m.

Suggesions

- Waste depositing into the river should be stopped .
- Plant trees in the river banks and width of the streams should be regained.
- Banks should be strengthened using geo textiles

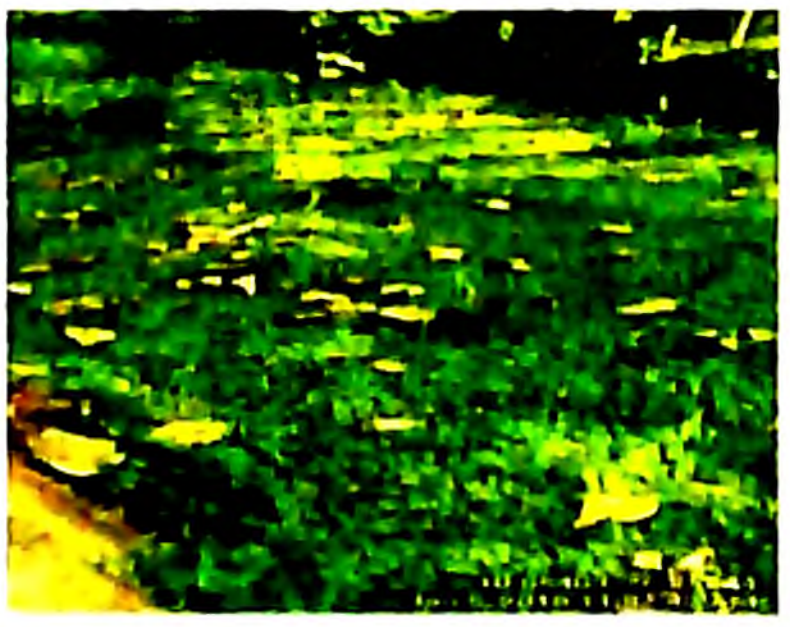
Left side banks of Aloor river - from Vazhani to Wadakkanchery

From Wadakkanchery to Enkakkadu

Observations

- Side wall protection for both sides
- Waste materials were disposed from hotels
- Water flow drastically decreased
- Severe infestation of *Salvinia molesta*
- Household waste materials were deposited in the river
- Large number of liquor bottles were floating on the river

Disposal of household wastes through pipes



Salvinia infested region

From Enkakkadu to Mankkara

Observations

- The river was comparatively clean
- By using a Vented cross bar farmers store the water for their fields
- Both sides were concreted

From Mankkara to Viruppakka

Observations

The river which originates from Vazhani Dam when reaches Viruppakka region seemed to be very much reduced in both depth and width

The river flow is regulated by using a vented cross bar.

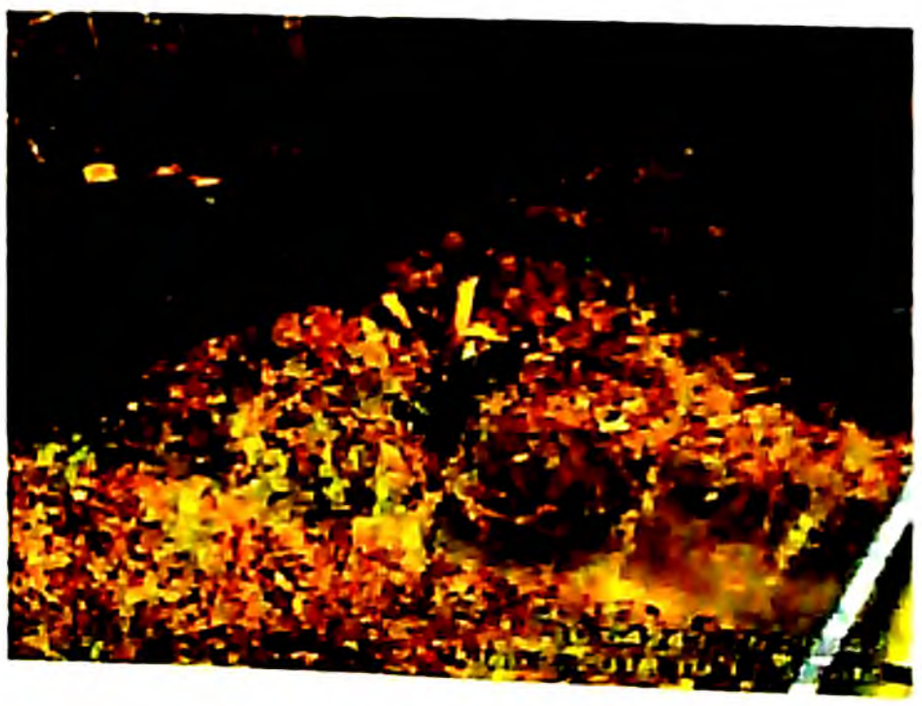
- Only some regions of the banks were concreted and the remaining were with muddy walls.
- Lots of plastic bottles and covers were there on the surface of the river

River water filled with plastic waste

From Viruppakka to Vazhani dam

Observations

- At the starting point of the river there were lots of plastic waste and bottles thrown in by people
- There was a fallen tree inside the river that disturbed its flow
- The river flow was regulated by using a vented cross bar.



Plastic wastes disposal by the visitors

Comments of local people

Mr.Sajeevan: A small canal from the dam is now opening to the river. The water from this river is mainly used for bathing, washing and irrigational purposes. Year after year water level is continuously decreasing and water is becoming more polluted.

Mrs.Karthyayany: There was a severe drought in last year during that time the river was dried completely. The thinning of the river year after year is one of the major issues that they are facing now.

Mr.Muhammed: A lot of waste materials are deposited in the river especially from a nearby private hospital which is on the banks of river

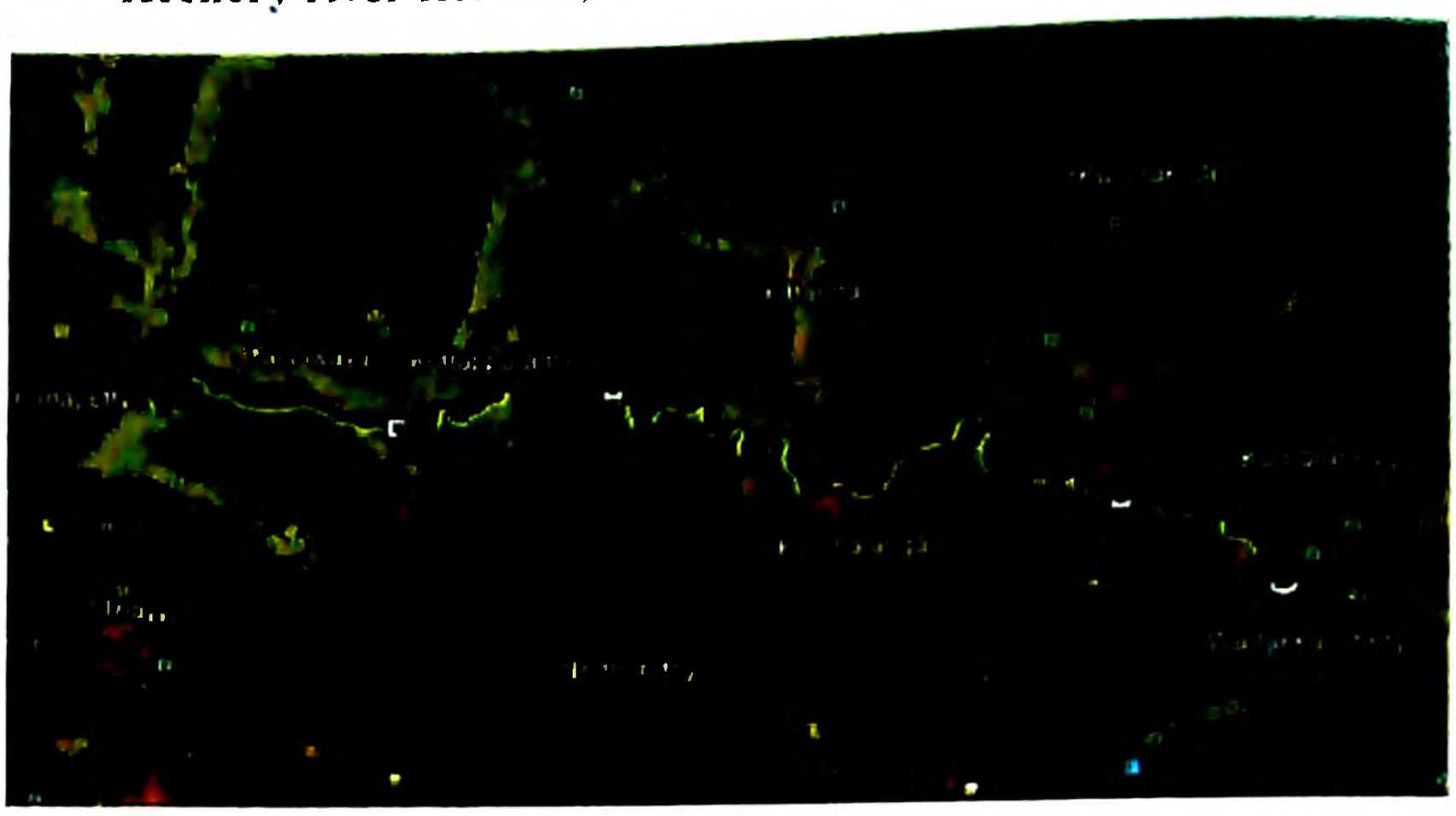
Major crops

Rice, coconut, banana, areca nut, nutmeg and black pepper

Suggestions

- The waste materials have to be removed from the river
- Prevent the disposal of household wastes to river water
- Keep the water clean and clear

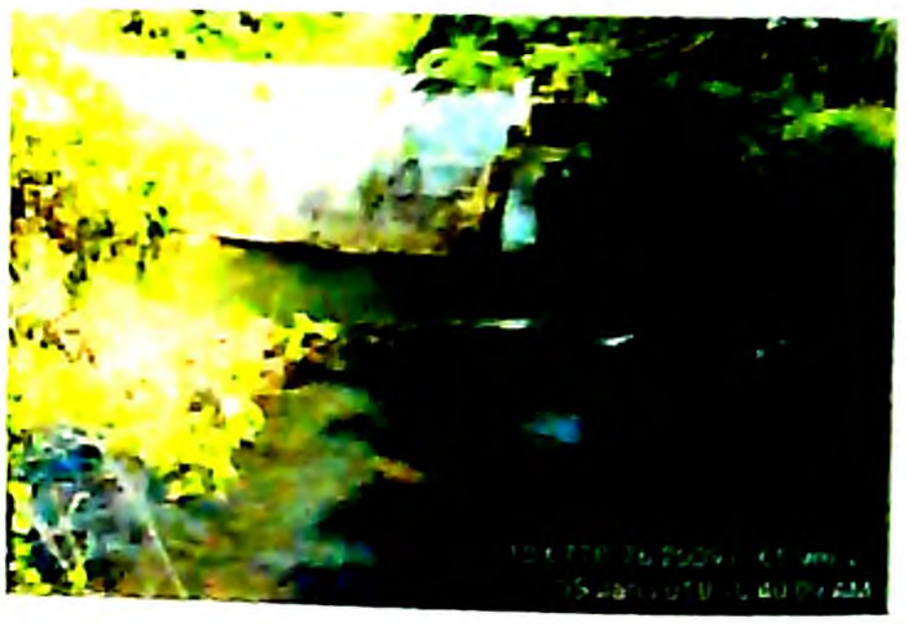
Kechery river left side, from Wadakkanchery to Nelluvaya



Observations

- Plastic wastes were being burned on the banks of river.
- In some places the sides of river were cracked and soil eroded
- In many places weed growth was seen, mainly *salvinia*
- Trees fallen across the river hindered the flow of it.
- Plastic wastes were deposited on the sides of river.
- River depth and width was decreasing gradually.
- Water in the river was used for washing clothes and vehicles, and also used for bathing animals

Weed growth in the stream



Drainage

Plastic wastes and weed growth

Comments of local people

Saviour: Mainly the wastes from cities are deposited in the river. River water is mainly used for irrigation purpose. Growing bamboos on sides of river protects the river. Panchayat should take the responsibility of bamboo seedling distribution.

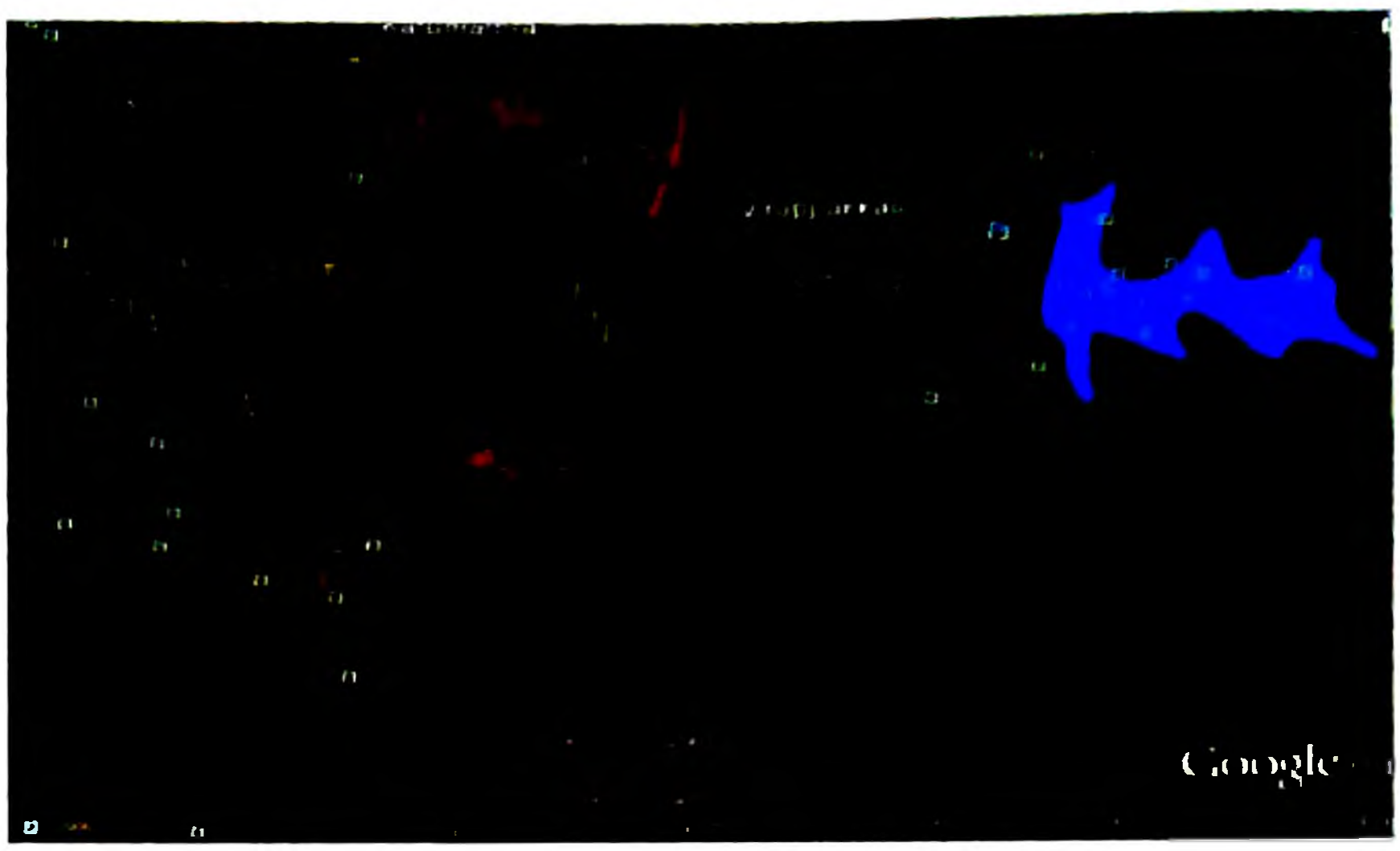
Mohanan: To protect river, panchayat should take initiation to generate awareness among the people.

Important crops: Coconut, Arecanut, Nutmeg, Banana, Vegetables, Rubber, Rice

Suggestions

- To protect the river panchayat should take initiative.
- Awareness generation among people.
- Growing bamboos on the sides of the river.
- Side walls with stone have to be constructed at the points of river diversion.
- Drainage channel from city should not be allowed to open into river.
- Remove the fallen trees from the river.
- Remove weeds from river.

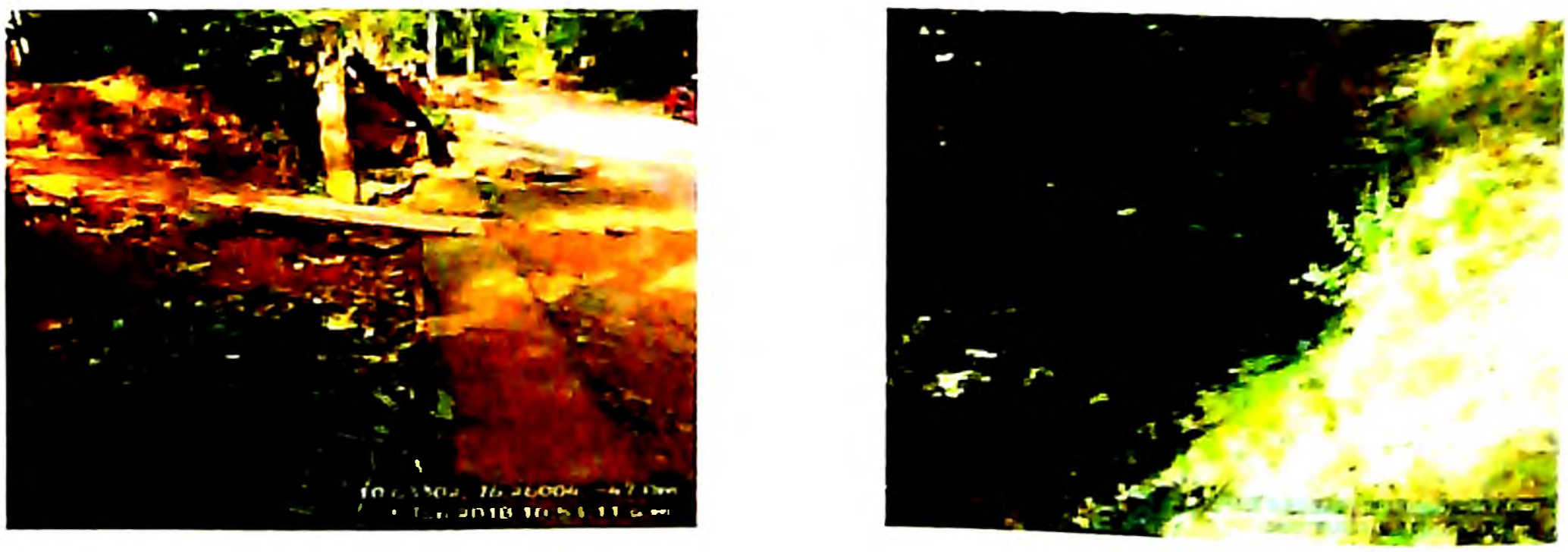
Vazhani canal– From Thekkumkara to Vazhani Dam



Streamlets: First order type, second order type, third order type

Observations:

- The dumping of garbage was seen to be high as it was a densely populated area. So, flow of water was almost nil.
- On one side of the stream, the house owners have constructed stone walls and hence the streamlets have become very narrow.
- During summer these streamlets become drainage channels.
- The outlets of drainage pipes from the houses open into the stream. The burning of wastes was also done here.
- The slabs lay out to connect the houses and roads also block the flow of water.



The condition of channels near the colony

Outlets of drainage pipes from houses

Burning of litter

Feedback of the local people:

Raghavan: The general scene is that of the streamlets getting completely dried up in summer and becoming a drainage channel. Only during monsoon there will be flow of water.

Sumitra: This region faces severe water scarcity during summer. When summer starts, the shutters of the Vazhani dam open and hence water becomes available. The water source for irrigation is primarily from the canal. The main occupation of our ancestors was fishing from the dam. Even now there is a tribal population who make their living from the fishing practices. It was recently that the water scarcity has become severe. The water level in the dam has reduced drastically in the near past. If there is heavy down pour or if the shutters of the dam are kept open for a long time, there will be crop losses due to water logging.

Varghese: In summer normally the wells dry up. But when the canal is let open, our wells get replenished with water. At the same time some of the farmers of the area complain that their plots often get flooded and suffer losses. For this reason, some of them have shifted from rice cultivation to coconut.

Main Crops: Coconut, Banana, Jack, Rubber, Arecanut

Suggestions:

- Stop disposal of wastes into the stream.
- Keep the streams clean and remove the garbage.
- Adopt appropriate water conservation strategies as it is a slope. This will help in the rejuvenation of the streams.
- Prevent the blockage of the streams due to soil slides.
- The region was dominated by long duration crops. Hence it is advisable to start cultivation of vegetable crops.

Thekkumkara 1- Mangalam

Map of the stream

Bylane: Mangalam, 3rd order

The evidences like 1m long ditches showing that there was a stream which was flowing through that area in the previous years. But now, no water flow is observed.

Markings showing the path of the stream

Bylane: 2nd order

Characteristics:

The stream is originating from the Chilambianchola. There was a Planithodu which was flowing through that area in the previous years and that joins with Neelarathodu and later reaches to Kecheri river.

Observations:

- There was not much water flow in the stream.
- The sides of the stream were protected in areas near houses.
- The domestic wastes were dumped into the stream through PVC pipes.
- The width of the stream was very much less in some places.

Pipelines for dumping waste

Reduced flow of water

Bylane: Chilambianchola, 1st order

Observations:

- There was not much water flow in Chilambianchola.
- The stream which was originating from the Chilambianchola loses its width in many places and the flow of water was also blocked in some areas.
- There were areas were the stream was completely dry.
- The loss water flow in the Chilambianchola was due to the presence of quarry.

Narrowed stream

Bylane: Thachamkuzhy, 1st order

The stream is originating from the forest which is seen on both sides of Thachamkuzhi-Vattayi- Kundukadu road.

Observations:

- Presently the stream was found to be completely drained.
- The domestic wastes were dumped in a large scale on both sides of the road.
- The wastes will reach into the stream during rain and get deposited due to poor water flow.
- The stream flows through Koovakkadu- Pallikkadu road and finally reaches to Kecheri river after joining with Planithodu and Neelarathodu.

Waste disposal.

Drained canal

Comments by local people:

Mathew: There is no much water in the Chilambianchola and now the stream originating from Chilambianchola is not reaching up to Kecheri river.

Chandran: There is water flow in the stream during rainy season but it does not come to much.

Girijavallabhan: The water in the stream is redirected to paddy fields and remaining only is reaching to the river. There was plenty of water in the stream even in the summer season. But now the stream is almost dry.

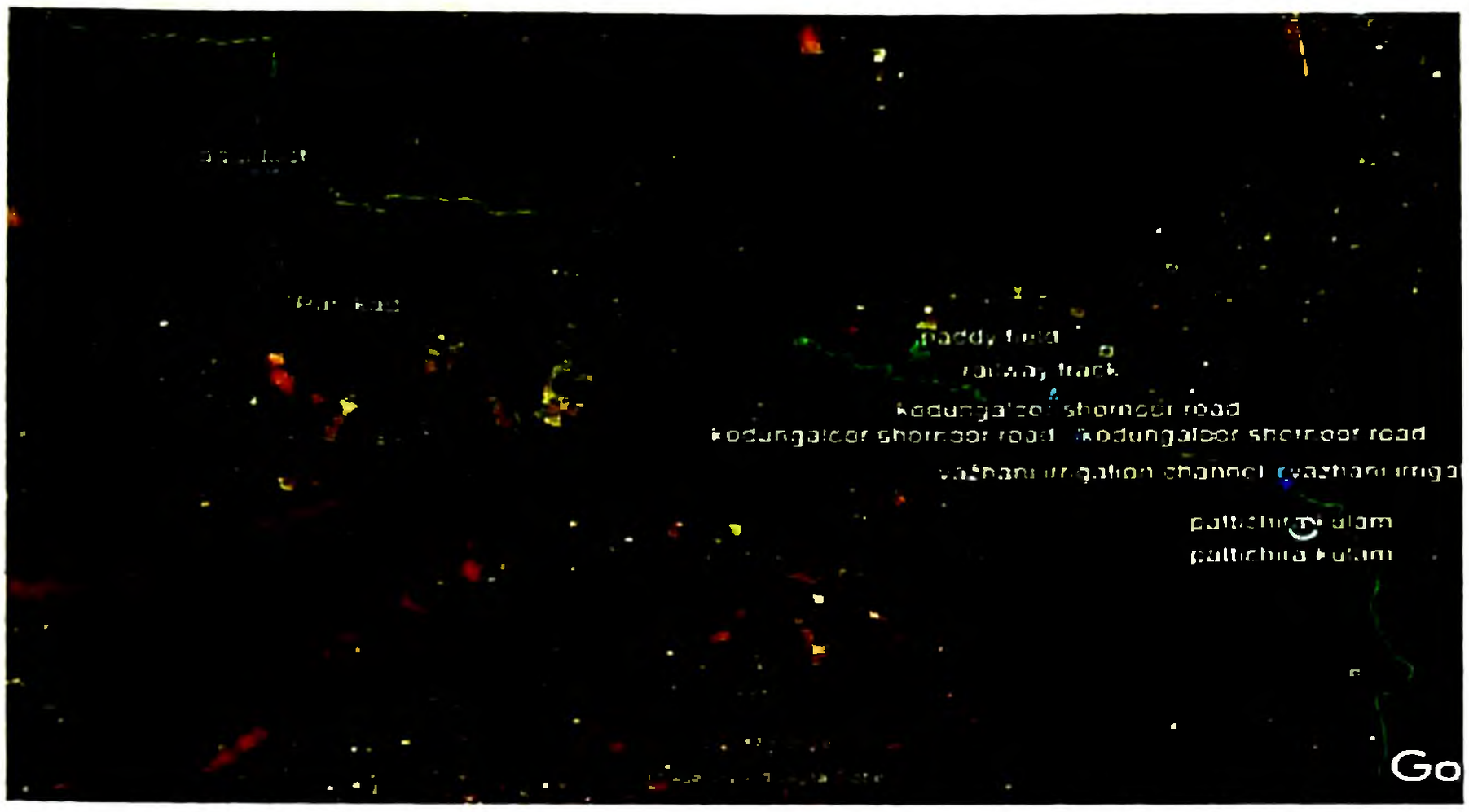
Valsala (Thachamkuzhi): The stream is originating from a forest. The water scarcity is severe in that area. There were a lot of paddy fields in that area in previous years. But now,they are replaced by rubber plantations due to the scarcity of water.

Major crops: Rubber, coconut, arecanut, banana

Suggestions:

- Remove the waste deposits which prevent the water flow in the stream.
- Stop waste dumping into the streams.
- Stop the quarry works which adversely affect the streams.

Thekkumkara 2



Order of the stream: First order type

Characteristics

Main source of water in the stream is the rainwater flows from the Kuthuppara hills.

Observations

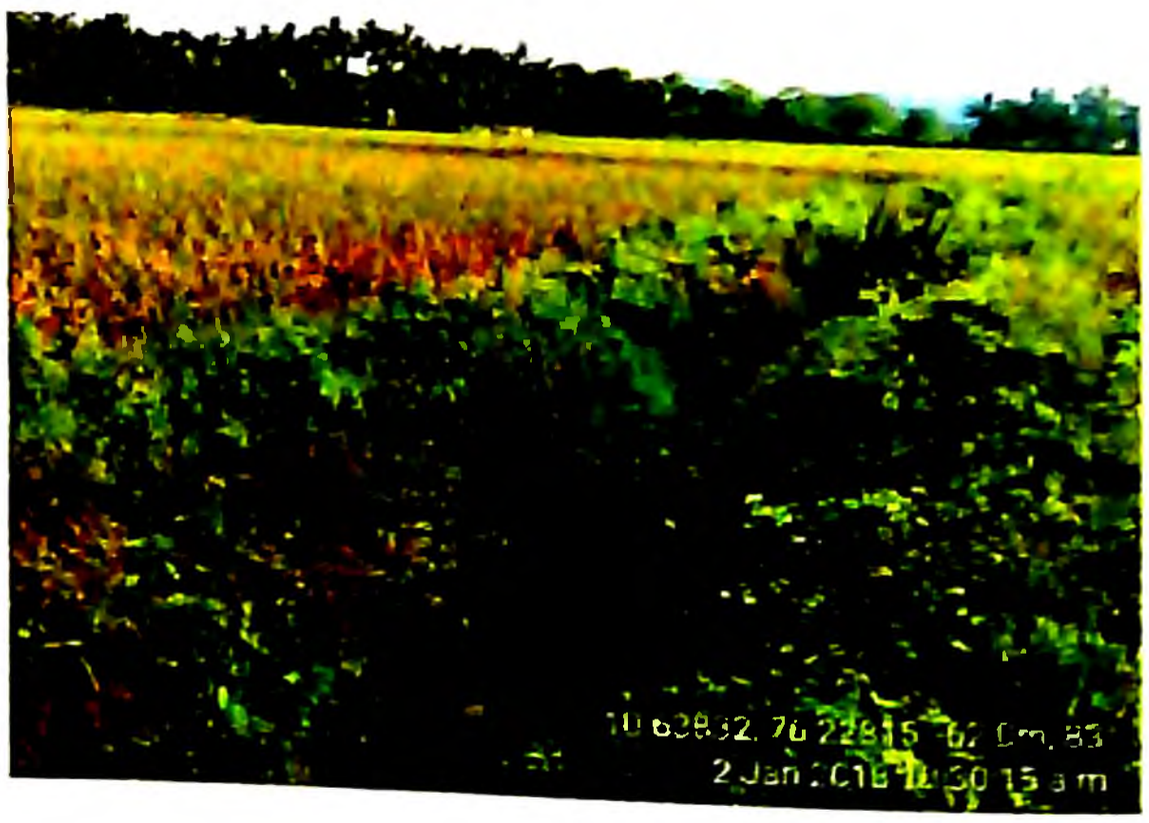
- Water from the hills reaches the channel and the width of channel gradually increases.
- Two first order streams joined to form a second order stream.
- Concrete side walls were constructed on both sides of the stream and the width is approximately 1.5m.
- On the right side of the road Acacia trees were planted.
- Two concrete bunds were constructed in the stream to decrease the flow of water and this water was used for agricultural purposes.
- Bunds made of locally available materials such as cement sacks were also seen in the stream.
- This stream leads to the paddy field and it flows through the field. This water was used for irrigating the paddy fields.
- Then the stream joins with Vazhani irrigation canal.
- The water flow in the stream was controlled by VCB.

The stream seems to be dried

Order of the stream: Second order type

Observations

- Kizhakke Padashekaram starts from the right side of the road, stream flow was through this paddy field.
- The flow of water in the stream was controlled by bunds made of locally available materials such as sacks and stones.
- Railway track was passing above the paddy field.
- The width of the stream in this region was very less.
- The stream passes through Pattichira padashekaram, the walls of the stream was protected by concrete side walls.
- The stream passes through the center of the paddy field.
- Then the stream reaches the Padinjare Padashekaram, the water for irrigation for paddy fields was through a tunnel beneath the road.
- Vazhani irrigation canal passes through the left side of the road.



Stream flows through the paddy fields

Order of the stream: Third order type

Characteristics

Stream flow is through the Padinjare Padashekharam.

Observations

- The water in the stream was directed to the fields for irrigating paddy.
- It was about 1.5 m wide. Water was deviated to paddy fields for irrigation.
- Sides of the stream were protected with concrete walls. The width of the stream gradually increases. Water flows in from a tunnel beneath the road.
- Vazhani irrigation canal passes through the Aqueduct above the paddy field. There were small bunds made of sacks in the stream to control the water flow.

The stream deviated and joined to another one

Comments by local people

Sharada: Paddy is the main crop from last 10 years, but now these paddy fields are getting converted to other crops especially plantation crops.

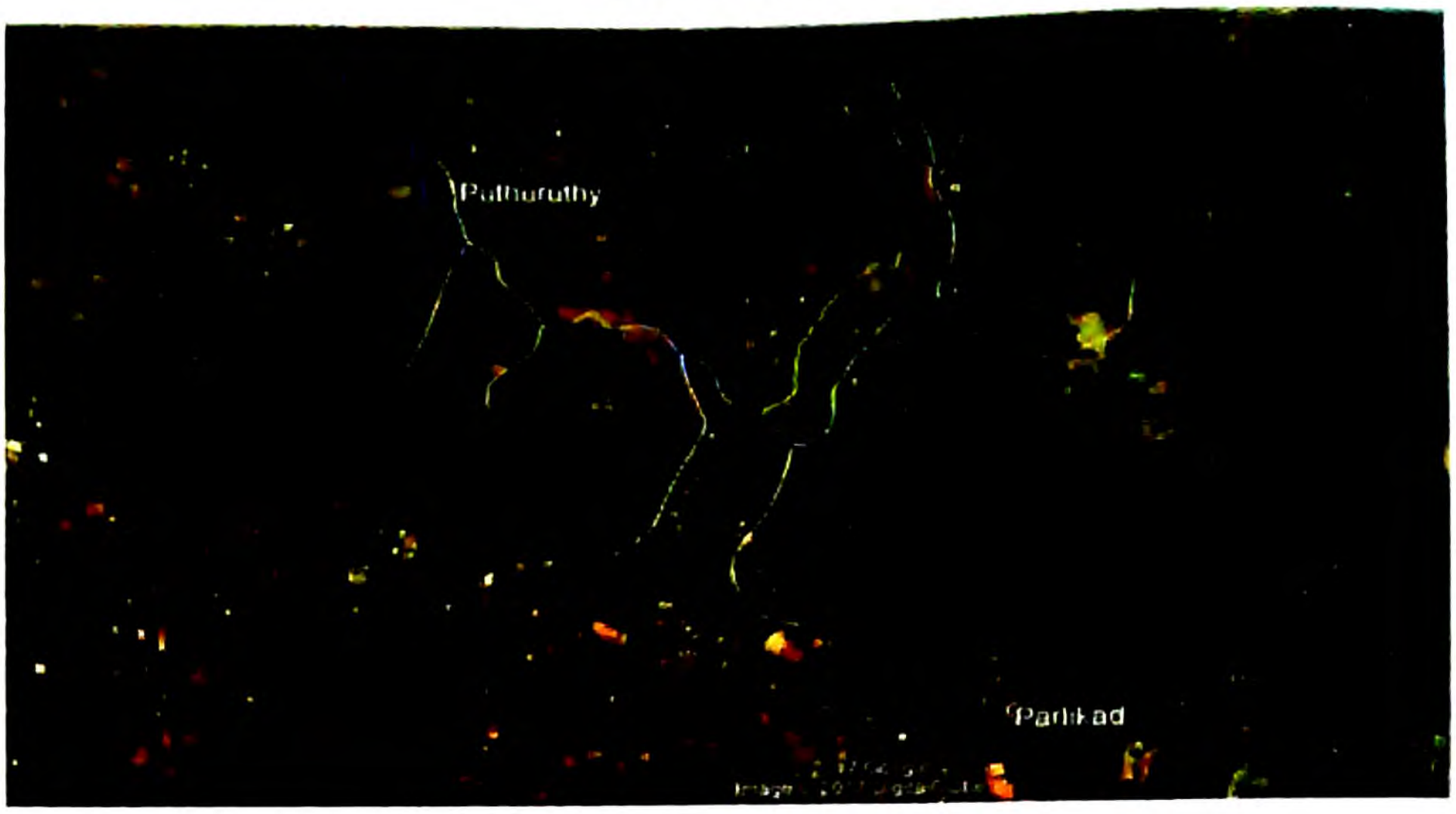
Radhamma: Year and year the flow through the stream is decreasing. It is imperative to increase the width of the stream to facilitate irrigation facilities. VCBs should be installed to facilitate irrigation.

Main crops: Coconut, Arecanut, Rubber, Paddy and Pepper

Suggestions

- Protect the side walls.
- Take measures to keep the natural flow of water in the stream.

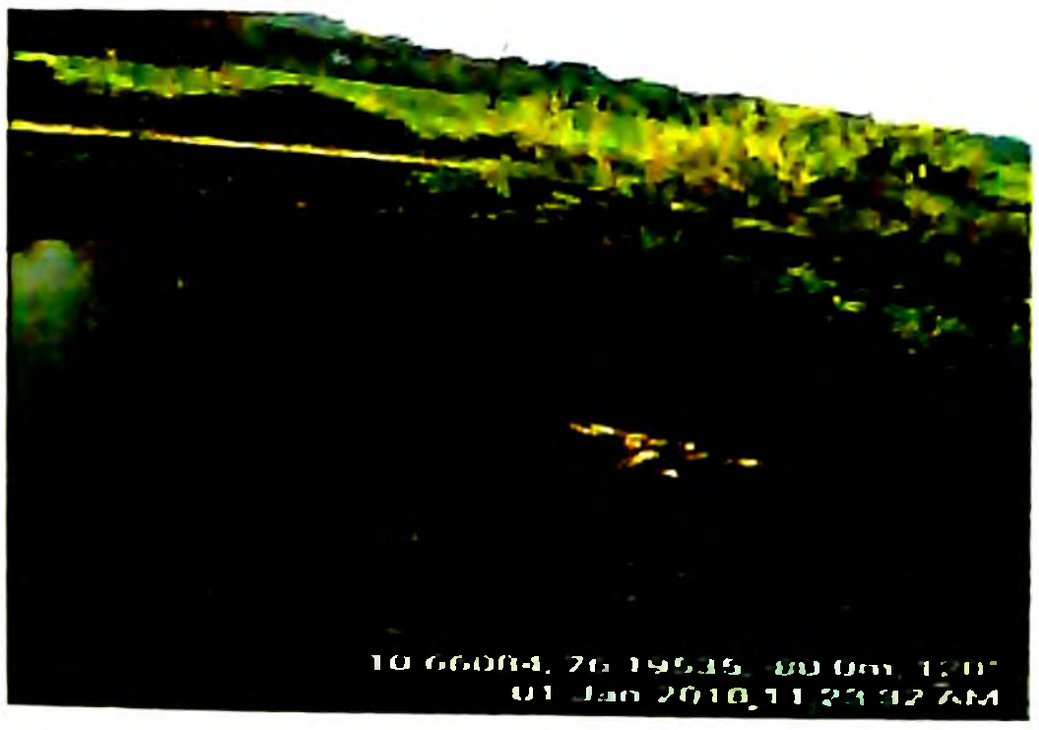
Puthuruthy



Stream: Fourth order- Puthuruthy

Observations

- The stream has 3-4m width and the banks were concreted up to 20m. In the remaining portion, banks were covered with vegetation. The stream was filled with grasses which cause accumulation of mud leading to reduction of depth and flow speed of the stream.
- The area along the pathway of the stream was full of paddy fields.
- Small channels have been made by people to let water into their fields.
- Along the sides of the stream ponds were there, fitted with pumpsets for irrigation.
- Four wells have been constructed near the stream for drinking water.
- Small check dams made of sacks of cement was seen at four points.
- Since both the banks were filled with paddy, no domestic wastes were put into it. Small channels from the paddy fields open into the stream. These can carry the chemical fertilizers applied in the fields.



Plastic bottles in the Puthuruthy stream

Stream: First order- Aryampaadam

Observations

- The stream in this region is not to be seen at all. The area is filled with soil and no water flows in it for the past 30 years. It was filled out three years ago, and only the small cemented embankments were seen.
- The nearby quarry and heavily fragmented land have led to the extinction of the stream.
- The area has rubber plantation around it. The stream joins the Thottupaalam stream by moving along the Vazhani irrigation channel. Here the stream reached first
- The width has increased to 5m while moving below the aqueduct at Thiruthipparampu.
- Banks have been concreted. The water was mainly utilized for agriculture and domestic uses.

Comments from local people

Wilson: Construction works conducted before 25 years contributed to the breaking of the stream in places.

Johny: In my childhood small streams from the hills were joining this stream. But now they are not seen.

Stream in which there is no flow for the last 30 years.

Stream: Forth order- Parlikkad (continuation of stream from Puthuruthy)

Observations

- Even though the stream was the continuation from Puthuruthy its width has reduced into 1m from this place onwards.
- Small check dams made with cement sacks were there.
- In some portions a layer of foam has formed over stagnant water indicating alkalinity.
- Two sides of the stream were covered with rice fields from starting to the end.
- In most places, the excess water from the field has led to the stream.

Stream: Forth order- Parlikkad

Observations

- The stream which was having a width of 2m at Puthuruthy reduced by half at Parlikkad.
- Stream passed through the middle of the rice field.
- It was split into two in the field itself.
- One among this passes beside the nearby house.
- In some parts the flow has stopped and foam has formed over the stagnant water.
- In this portion stream was completely free from garbage.

Stream flowing beside a private residence.

Comments from local people

Sujith: The stream was having a better width in older times. The damages on the walls separating field from stream caused the reduction in width.

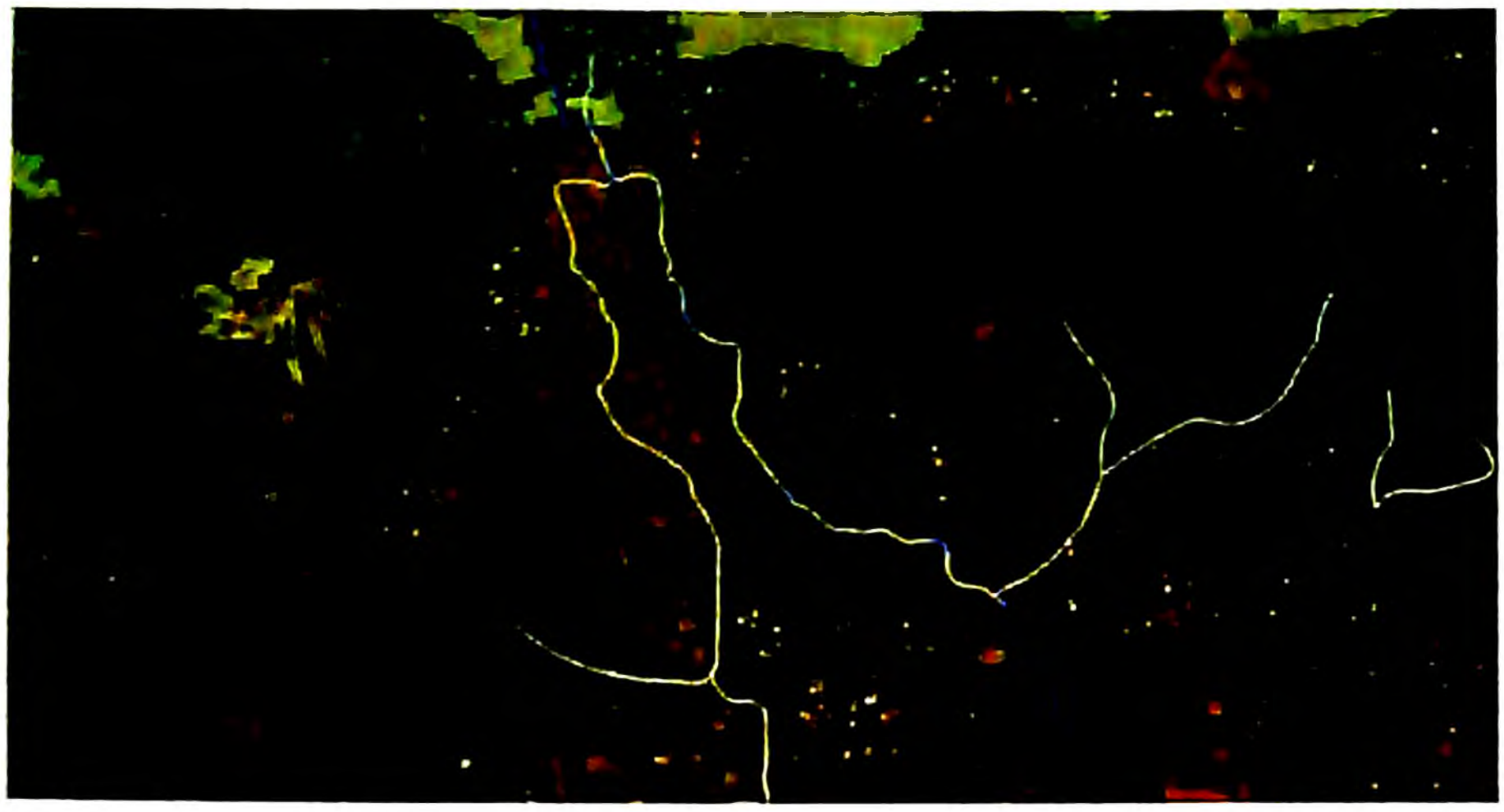
Radhamma: last year, water for cultivation purposes was not available.

Major crops: Rice, Coconut and Banana.

Suggestions

- Prevent the garbage depositing into the stream.
- Grow small plants on the sides of in place of the cement walls.
- Protect the ponds near the stream.
- Prevent privatization of stream premises.

Kottappuram



Stream: Fourth order type

Observations

- Check dams were constructed to check water flow.
- Wastes were found deposited on both sides of the check dam.
- In some areas two sides were maintained by concrete walls.
- Soil erosion was noticed in many regions.
- Some areas were marshy.
- This stream was further divided into two, of which one was found to be existing no more.

Wastes deposited in the stream

Stream: Fourth order type- Puthuruthy

Observations

- About 2m in width.
- Massive weed growth was observed.
- Many streamlets were found covered by soil and was used for construction purposes.
- A pond which was polluted was also noticed.

Polluted pond

Stream: Fourth order type - Puthuruthy

Observations

- On both the sides of the stream paddy field was found.
- Regions which were earlier channels were now converted to roads.
- In some regions, dug holes were made inside channels and water was found insde them.

Pound contain salvinia

Response of nearby peoples

Dasan: He said that about 50 years ago the streamlet was fully destroyed. During his school days this portion of stream was filled in and merged into rice fields.

Kalyani: Renovation work on cannel was done many years ago. So in rainy season water is flooded into the road.

Kousalya: 50years ago, there was a water channel. Later it got fully destroyed for the purpose road construction.

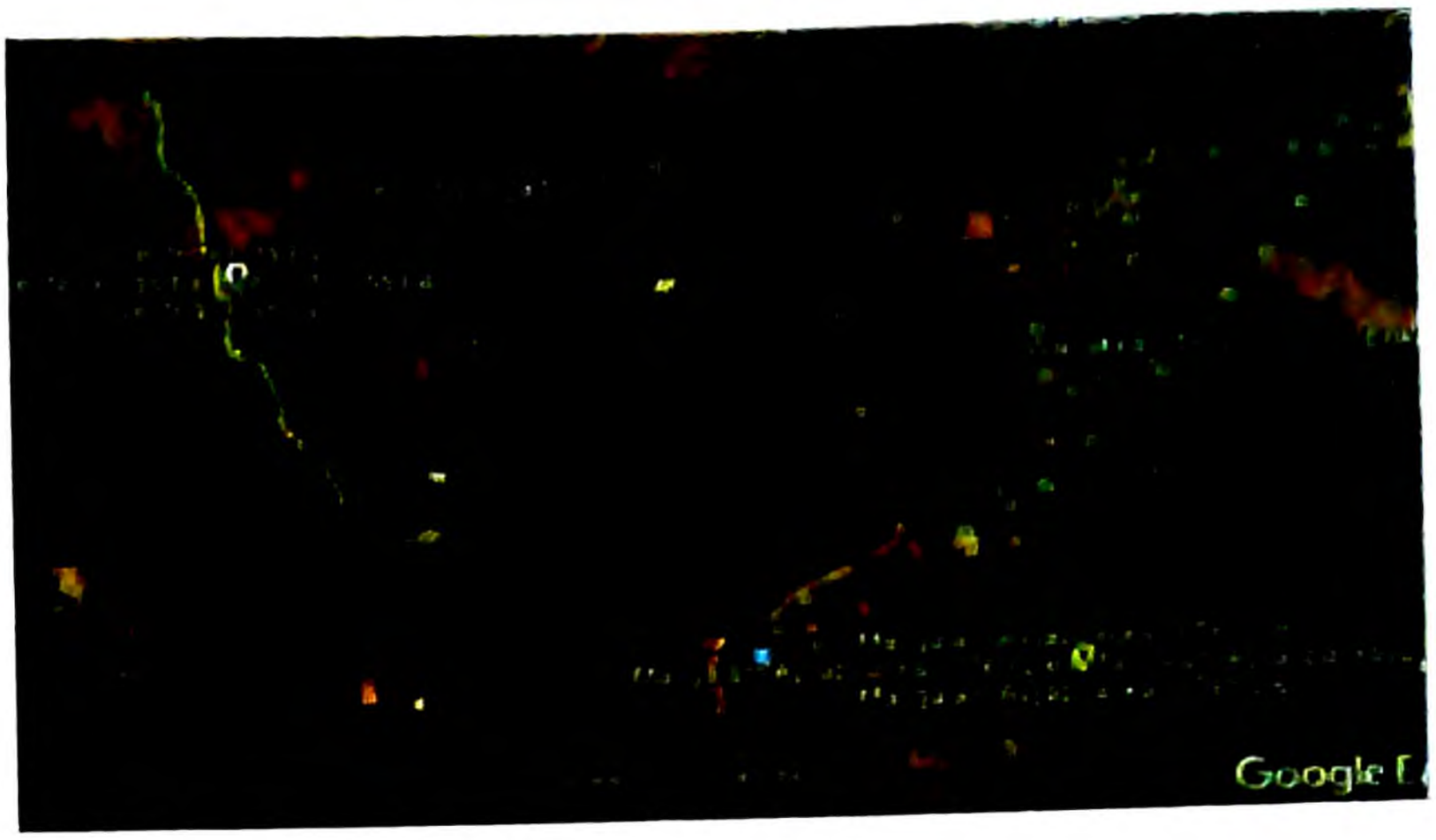
Vijayan: Some portion of channel were fully under the control of some people.

Main crops: Rice, Rubber

Suggestion

- Remove waste materials from stream
- Destroy *Salvinia* from the pond and streams.

Kumbalagad



Stream: First order type and second order type

Charateristics

- About 1 meter width
- The water runoff from nearby forest join the stream

Observations

- Flow of water was affected by monsoon.
- Water was used for domestic purposes like washing clothes and bathing the cattle.
- Even though the area was less populous, the deposits of plastic wastes were observed.
- Discontinuous stone pitched embankments were found.
- Gradually the width of flow of the water widened and transformed into second order stream.

Stream: First order type, Second order type and Third order type

Observations

- The stream flowed through the Acacia forest
- As the area was less populous, dumping of wastes was less
- The stream was discontinuous at certain places
- Stream got diverted from its previous location.
- At certain places , small scale construction projects were found at the banks.
- Rubber plantation formed one side of the bank and acasia forest forms the other side.
- The water flow of the stream was confined to monsoon season.
- 3rd order stream joined the Aloor river
- Plastic bottles were dumped into the stream
- Due to siltation the depth of the stream was reduced

Discontinuous Stream

- There was a checkdam
- Live fencing using Glyricidia was done at certain areas of the stream.
- Two vented crossbars were constructed adjacent to each other.

Siltation

Construction Projects near the stream

Acasia forest

Stream: First order type and Second order type

Observations

- No flow of water was found in the 1st order streams which forms the 2nd order streams near the Mangalathu Ayyappankavu Temple.
- One of the streams has dried up and transformed to a walkable path that leads to households

- The area lack proper drainage systems
- During monsoon the stream overflowed across the road as there was no underpassage.
- Pastic wastes were dumped into the stream
- There was flow of water in the stream near the temple
- Live fencing using glyricidia was found
- The stream joined the Aloor river
- Siltation was observed in certain places

Live fencing using Glyricidia

Remarks from residents

- **Aamina:** The water from the stream is mainly used for domestic purposes like washing clothes and bathing cattle. Periodical cleaning of the stream is done before the onset of monsoon. The water from the stream is not utilized for drinking purposes.
- **Wilson:** The water is used for irrigation purposes. The streams are more contaminated than earlier.
- **Sreedevi:** The streams were more clear and clean during earlier days. The water from these streams were used for domestic purposes like washing clothes and bathing.Currently the water from these streams are used for irrigation purposes.

Major crops: Rice, Banana, Coconut, Arecanut, Rubber, Black pepper

Suggestions

- Construction of drainage canals on the sides of the roads.
- Avoid dumping of plastic wastes into the stream.
- Remove the deposits of plastic wastes.
- Live fencing on the banks of the streams.
- Adoption of water and soil conservation measures to convert the stream into a perrenial one.
- Strenghthen the embankments.
- Adopt measures to prevent siltation of the streams.
- Remove the debri which prevents the free flow of water from the streams.

CONCLUSION

This report is a reflection of the present status of Wadakkanchery River. There are places where this invaluable watercourse has become meager, lanky and exhausted. There are points where the river is seen completely buried under constructions. There are also sites where the river has vanished due to gradual and ceaseless encroachments. At some places the filter tanks of Water Authority, which has become the garbage and waste disposal sites due to negligence are found leaking into the natural course of the river. Plastic wastes are denaturing the river at several points.

This citizens' survey proclaims that the exhaustion of river is due to self-obsessed and unconcerned human interventions rather than mere climate change. This report speaks about rivulets that have been completely disappeared, channels that have ceased in between and streamlets whose course of flow have been diverted.

Construction works were seen at places where the river used to flow through. Deliberate efforts to lessen the depth of the river were also noted.

Nevertheless, the Wadakkanchery River is still an invigorator. The initiatives taken by the present Governance for the conservation of river is the need of the hour. With a Governance mechanism that has focus on retrieving the river and people's will that support it, the river can be brought back to its past glory. The key to this will be people, from all walks of life, who stand together with one heart.

Group members

Sl. no	Group	Members
1	Mangad	Abhin P.K, Pooja A, Shuhda Nalakath
2	Chittanda 1	Abinsha Asharaf, Nayana
3	Chittanda 2	Akhil K.P.,Keerthana Jayrajan, Parvathy P.B
4	Kanjirakkodu 1	Akhil Raj, Sugina P, Amitha K George
5	Kanjirakkodu 2	Anoop S, Arya P.R, Gowri G Lal
6	Oottupara	Arun Kumar C, Sandra Jose, Blessy Thambi
7	Akamala	Asif Ali P, Aashika Saseendran, Rifa Ashin P.
8	Ravipuramangalam	Asif Ali V.K, Beegam Salma M.P, Sreshma C.K
9	Kakkinikkadu	Hubaib Hassan C.A, Asha John, Rashida V.K
10	Left side of Kechery river Wadakkanchery – Nelluvay	Anna Emmanuel, Jyothish Babu, Rin Rose Antony
11	Right side of Aloor river Vazhani – Wadakkanchery	Nibin V., Awha Nainu M., Reshma Ravi P.
12	Left side of Aloor river Vazhani – Wadakkanchery	Nidhin Raj, Aparna Joseph, Amritha Hari
13	Left side of Kechery river Wadakkanchery – Nelluvay	Abhaya M.C., Harya Krishna, Saleesh N.V.
14	Vazhani canal Thekkumkara – Vazhani dam	Sarin S., Badariya P. AncyDiana P.G.
15	Thekkumkara 1	Shinu Thomas, Riya Mary Mathew
16	Thekkumkara 2	Suhaid M., Reshma S.Nair, Neha Unni
17	Puthuruthy	Hiba T., Selva V.P.,Vinu K.S.
18	Kottappuram	Vivek M.C., Asharavi Bhanu, Anisha A.
19	Kumbalangadu	AnaghaV.Gopal, Deena Sebastian, Lualu C., Sneha Chacko