

Chalakudy Puzha Samrakshana Samithi

Revisiting Important Water Conflicts in Kerala

Kerala State Centre of Forum for Policy Dialogue on Water Conflicts in

India

And

Chalakudy Puzha Samrakshana Samithi, Chalakudy, Kerala

by

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November 2011
Badwani (MP)



(**Gaurav Dwivedi**)

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Background & Introduction to the Study

This study has been undertaken in order to achieve one of the primary objectives of the Kerala State Centre of Forum for Policy Dialogue on Water Conflicts in India, represented by Chalakudy Puzha Samrakshana Samithi, Chalakudy of revisiting some of the important water related conflicts in Kerala, post-publication of the compendium on water conflicts in India by the Forum, "Water Conflicts in India: A Million Revolts in the Making"¹. The revisited water conflicts in Kerala for this study include -

- Pollution and Over-exploitation of ground water in Plachimada by Coca Cola,
- Pollution and water extraction by Grasim Rayons from Chaliyar river,
- Pollution and water extraction by Nitta Gelatin from Chalakudy river,
- Conflicts in Kuttanad wetland region of Vembanad lake and
- Industrial pollution and toxic hot-spot in Eloor - Edayar region of Periyar river

To begin with it is important to understand what binds all these places together. There are several social, economic, environmental, political and cultural threads that are interwoven in all these places. One common thread is water and the ensuing commercialisation/ industrialisation in these places leading to over-exploitation, pollution, damage, contamination and conflicts over control and sharing of these water resources.

Since the beginning of the age of industrialisation, over-exploitation and contamination of water resources seems to have become an oft - recurring theme across the world. More so, in the third world countries where largely rules, laws and state agencies support and encourage industries in externalising the manufacturing costs in the form of ecological damage to the environment, tacitly or otherwise. It has also been observed that despite enough scientific evidence, provisions under the law and pressure from social, environmental and community groups, such issues drag on while neither the problems are resolved with sustainable measures nor the offenders brought to the book, to take such cases forward in positive and constructive directions.

The cases in Kerala which have been revisited have enough clear cut and circumstantial evidence to enable the state agencies to stop polluting industrial production or impose penalties on the polluters as per the 'polluter pays principle'. However, this hasn't been the case. In almost all the cases a lot of literature, research studies, media reports and documents are readily available in the public domain and also with the local groups that go on to prove the social and environmental damage beyond doubt.

1. Water Conflicts in India: A Million Revolts in the Making, Editors - KJ Joy, Biksham Gujja, Suhas Paranjape, Vinod Goud and Shruti Vispute, Routledge, New Delhi, 2008

In a couple of cases where some kind of resolution has happened - as we shall discuss later in detail - has occurred despite state willingness or unwillingness notwithstanding. For instance, in Plachimada Coca-Cola issue and Grasim Rayon pollution in Chaliyar, the industrial units have been shut down. But in both the cases the reasons for the shut down are very different than what should have been desirable under the prevailing circumstances and the rule of law. In Plachimada case after a lot of wriggling and tossing the ball, the Coca-Cola plant was shut down under a Kerala State Pollution Control Board (KSPCB) order in 2005. In the Grasim Rayon case, the plant was shut down due to the mounting public and government pressure to reduce pollution, the possible cost-benefit analysis that the company management might have done to install expensive treatment and pollution control equipments and the fast depleting forest resources which formed the major reason for the company being located in Kerala.

In Kuttanad Wetlands region, some sort of intervention has been initiated by MS Swaminathan report on the agriculture situation² in the region and recommendations on how to address the environmental-agricultural issues of the region.

In the other cases of contamination of Chalakudy river by Nitta Gelatin India Limited (NGIL) and industrial pollution in Eloor-Edayar region of Periyar river the situation has not changed much. Even though as we shall see in the later sections of this report various groups/ individuals in these areas are working to create more awareness, dissemination and pressurising decision-makers to take action against the polluters and safe-guard public interest. However, we are yet to see some significant changes in ground realities.

Water Conflicts in India

Water sector and conflicts have a strong relationship emerging from various aspects of water as a resource; rapidly increasing competing uses of water in domestic, agricultural, commercial and industrial sectors; changes in technological aspects to access surface and ground water resources leading to unprecedented exploitation of water resources for increasing supplies to wider areas and large number of users; environmental impacts of such technological changes; increasing demand supply gap due to over-exploitation of water resources and inefficient water use; pollution, contamination and encroachment of water resources like rivers and lakes by industries and real estate for short-term gains; deteriorating water quality in several places and increasing private control over a common pool resource among others.

It needs to be noted that such conflicts in water sector arise because of lack of proper policy and governance frameworks and also because of lack of legal, regulatory and administrative structures that are required to address the fundamental issues behind such conflicts in the changing modern times. This lack of adequate frameworks and structures, with the changing times and conditions, leads to further escalation of water conflicts at a much larger scale. This in turn affects the social, environmental and economic progress in not only the specific conflict zones and but other regions as well.

As rightly noted in the introduction to 'Water Conflicts in India' - "In India, water conflicts are likely to get worse before they begin to be resolved. Till then they pose a significant threat to economic growth, social stability, security and ecosystem health. And under threat are the poor-

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2. Measures to Mitigate Agrarian Distress in Alappuzha and Kuttanad Wetland Ecosystem, A Study Report by M. S. Swaminathan Research Foundation, 2007
 3. Water Conflicts in India: A Million Revolts in the Making, Editors - KJ Joy, Biksham Gujja, Suhas Paranjape, Vinod Goud and Shruti Vispute, Routledge, New Delhi, 2008, Page - xviii

est of the poor as well as the very sources of our water - rivers, wetlands and aquifers"³.

The other important aspect related to water is the decision making process, influenced by the state agencies without proper involvement of different sets of users, lack of transparency and accountability in decision making process, lack of effective enforcement of rules and guidelines due to weak institutional structures, social and political dynamics and not the least lack of updated and detailed information and analyses of such information related to water sector. The decision-making clearly lacks a transparent, democratic and informed public discussion on the issues involved.

Such skewed policies, processes and structures further lead to increasing the intensity of the conflicts rather than moving towards a sustainable, long-term and balanced resolution of the conflicts in an already socially and politically volatile environment.

Forum for Policy Dialogue on Water Conflicts in India

The Forum (Forum for Policy Dialogue on Water Conflicts in India) is an effort to bring together all those interested in working on issues related to water conflicts in India into a loose network for action and interaction. The Forum intends to cover four broad areas: Conflict Documentation, Conflict Resolution, Conflict Prevention and Networking and Awareness⁴.

Kerala State Center of the Forum for Policy Dialogue on Water Conflicts in India

The Kerala State Centre of the Forum has been functioning since October 2008. The Kerala Centre is carrying out an Action Research Program in the Chalakudy river basin in order to arrive at a sustainable resolution on the conflicts between the upstream hydro power project operations versus downstream irrigation and drinking water. The State centre has also been involving informally in some of the water conflicts in Kerala including providing information and technical advice to the local groups. This report is an effort of the State Centre to revisit some of the important water conflicts in Kerala



4. For more details about the work, activities and other information about the Forum, please see - www.conflicts.indiawaterportal.org

Shutting Down Grasim Rayons to Cleaning up Chaliyar River

Chaliyar river Pollution: Toxic-contamination and unauthorised water extraction from Chaliyar by Grasim Rayons Ltd.

Description of the study area

The study area for this case study is primarily along the stretch of the Chaliyar river while it forms a natural boundary between the Malappuram (south-side) and Kozhikode (north-side) districts in the vicinity of the Vazhakad gram panchayat, Kondotty block panchayat in Malappuram district and Mavoor gram panchayat, Kunnamangalam block panchayat in Kozhikode district respectively. Mavoor is around 22 kms away from Calicut city and Vazhakad is close to 35 kms from Malappuram district head quarters.

Both these towns are located immediately opposite on south and north bank of the river Chaliyar. Grasim Rayons was located on the north-side, close to Mavoor, however due to the nature of air and river water pollution the people living in Vazhakad, on the other bank of the river were affected equally.

Map of Kerala



Chaliyar River originates in the Western Ghats range from Nilambur Hills located near Cherambadi town in the Nilgiri district of Tamil Nadu and flows through Malappuram district for most of its length and then for around 17 Km it forms the boundary between Malappuram district and Kozhikode district before entering the city of Kozhikode for its last 10 Km journey and finally empties into the Arabian Sea. The Kavanakallu Regulator cum bridge is constructed over the Chaliyar River, 13 Km away from Kondotty Hills about 27 Km from Nilambur.

Mavoor and Vazhakad are closely related to Chaliyar river. The river has deeply influenced the culture, custom and the lives of the people in these towns. Chaliyar river has been a means of transportation for the people since early times. Though agriculture was their major source of income, the

river paved way for many other livelihood options. Transportation of wood from one place to other, fishing, boat services, etc were the other sources of livelihood .

The lifestyle of the people in these towns have changed quite a lot during this period from rural to peri-urban. This has been mainly due to the income levels that increased after the setting up of Grasim industry in this region, followed by the influx of money from the expatriates working in gulf countries. Money from illegal sand-mining has also given local people the means, especially the youth, to lead an urban life style.

The issue with the location map in Kerala

The major conflict issues that had emerged in the wake of setting up of Grasim Industries in this region included -

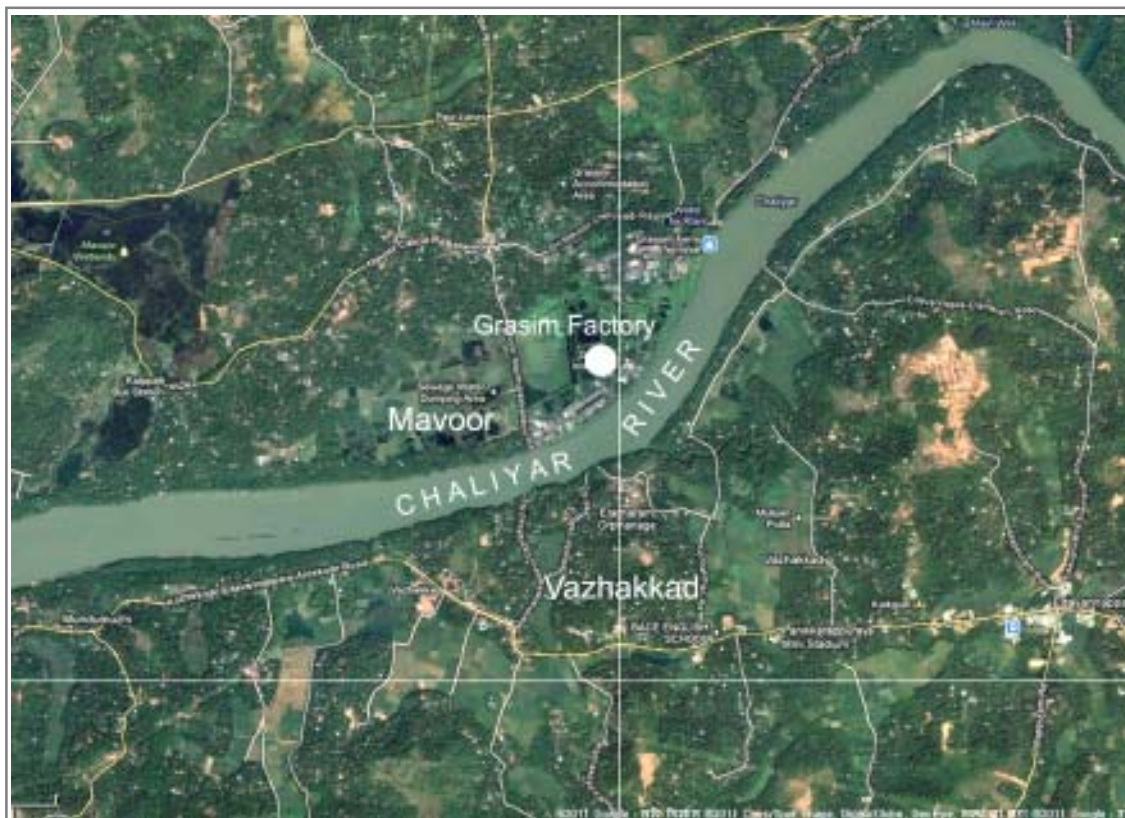
- a) Severe air and river water pollution
- b) Health impacts and Environmental impacts of pollution
- c) Loss of livelihood for people, mainly fishing and agriculture
- d) Socio-political conflicts due to the various impacts of pollution
- e) Local people's struggles to restore the river to its original state with Grasim and also with the state government agencies

Lately, even though some time has elapsed since Grasim industries closed operations, issues of river protection, loss of fish catch, free flow of river, sand mining, etc have become main conflicting points among the communities in this area.

The conflict - description of the conflict and its evolution

More than half a century back, in 1963, when Grasim Rayons began producing pulp and viscose staple fiber at its Mavoor plant in Kerala, few would have realised then that the initial wave of industrialisation euphoria would subside soon and this industrial operation would be-

The Chaliyar river and Grasim Rayons factory in Mavoor-Vazhakkad area.



gin one of the earliest environmental movements in Kerala against industrial pollution. Once the negative impacts of the industry and its reckless actions started showing their signs, ie since late 1960s and 70s, the agitation against the pollution and its impacts grew stronger. Slowly, people in Mavoor and Vazhakad began realising the negative effects of air pollution and the dumping of untreated industrial waste into the river. These became the major points of contention because of the multiple links of water to various other aspects of life and livelihood. This further lead to escalation of agitation and protests against the industry.

As pollution rose to dangerous levels local community could also see the incidence of diseases growing in the area. The number of cases of malformed babies multiplied, cancer, heart attacks, respiratory diseases, failing vision and retardation of mental faculties became quite common. During 1970s the conflict escalated further when the company failed to implement any pollution control measures even after meetings with the state government, pressure from environmental and local groups and studies by institutes like NEERI for pollution control.

As the pollution problem increased the people of the area became restive and protests, demonstrations and submission of memorandum began. On the other hand the unit was facing operational problems due to dwindling river flow and the effluent and tidal water ingress began reaching the fresh water inlet of the unit. The company management found an easy solution to this by constructing bunds with sand bags at Elamaram, close to the factory. This resulted in tidal water ingress up to 20 km stretch of the river, mixing with effluent and forming a stagnant pool.



The only police speed-boat lies in disrepair on the banks of Chaliyar in Vazhakad; this was used for the purpose of patrolling the river to check illegal sand-mining.

In 1974, an agreement was reached that the industry will treat effluent properly and discharge the treated effluent further downstream at Chungappalli through a 7 km long pipeline. The pipe line was partially completed only in 1979.

All this while the company management kept denying any wrong doing and stating that they are treating the waste water within the prescribed limits. Yet, studies by environmentalists like Prof M Achyuthan and Prof. K T Vijayamadhavan, of 'Society for the Protection of Environment of Kerala' (SPEK) showed that the levels of hazardous metals like Mercury were very high in Chaliyar at Vazhakad and Chungappalli.

The conflict took another turn as it brought in the angle of trade unions versus the local community in the picture. Meanwhile it turned out that the trade unions due to their organisational strength won over the concerns incurring heavy losses of the community.

The different stances of stake-holders, local self-government, industry, etc

During the entire Chaliyar pollution saga by Grasim Industries, various stake-holders groups took stance depending on their interests, especially Grasim management, state government, its agencies, industry workers and their trade unions. On the other hand, the environmental groups, local panchayats and the community came together to move towards a more long-term sustainable solution to the environmental problems caused by the industrial pollution.

All through the years when Grasim was operating in Mavoor, it denied categorically doing any environmental harm to the area. It always maintained that it has been following the environmental norms prescribed by the pollution control board. It also denied that the cancer deaths in the area had any connection to the air and water pollution caused by it. The Committee on Estimates on Prevention and Control of Water Pollution of the legislative assembly, set up in 1977, condemned the 'adamant and arrogant' attitude of the company management and strongly recommended that prosecution procedures be undertaken against the company management, sums up the management stance clearly⁵.

The state government during the initial periods supported the Grasim Rayons fully. The political leaders of the state occasionally admonished the company to control pollution in the area. The other thing that the state government did was to set up expert committees on the issue. However, these also remained largely ineffectual in implementing the envisaged solutions to the problem. The estimates committee also made scathing remarks on the government's evasiveness and indifference as well as the pollution control board's lack of appreciation of the significance of recommendations⁶.

In 1981 and 1995 KSPCB filed petitions to restrain the company from discharging effluents in the river. The court injunctions did not restrain the industry even a little bit as it went on to use unauthorised discharge outlets to pump effluents in the river. The two cases filed by PCB only succeeded in providing the industry more time to disregard pollution control laws and to forbid the PCB from taking a strict action against it. It also needs to be noted that the legal system largely failed to provide remedies to the problems and the issues raised in petitions to the High Court and Supreme Court in this matter.

Since the beginning, local communities started opposing the pollution caused by the industry. They were clearly opposed to the reckless polluting activities of the company and ini-

5. <http://www.india-seminar.com/2000/492/492%20surendranath%20c.htm>

6. <http://www.india-seminar.com/2000/492/492%20surendranath%20c.htm>

tially wished to have effective pollution control measures installed to prevent the environmental damage. But later on this demand shifted to full shut down of the plant operations in Mavoor. It was also partly due to the effective protest and resistance by the local community that the industry had to shut down in 1999.

The local panchayats of Mavoor, Vazhakad, Vazhayoor and Areekkode remained in support of the communities while organising protests and demonstrations against the polluting industry. This also demonstrated that objectives of the local political leaders differ from the state level leaders. And it seemed that local politicians are receptive to people's concerns and demands. However, in the eventual power game they lose out to more powerful leaders from the state and the national level.

The environmental groups also played a very important role in shaping the struggle in the area. It is with their support and technical input that the community could prove scientifically what it already knew based on traditional knowledge and wisdom. Several studies, reports and scientific tests were carried out by these environmental groups to prove what the rural communities were saying.

The stance taken by the trade unions in this case was clearly in favour of the industry because of the employment and labour issues involved. This is based on the skewed logic of industrialisation equals jobs/ employment equals development in the third world countries. However, we often fail to see that the benefits of industrial production are mainly due to the very low labour costs and externalising production costs in the form of damage to the local environment. Yet, in states like Kerala where trade unions are very strong and play an active role in the state elections as well, political leadership cannot ignore them. Hence, the balance of power is mostly tilted in favour of the trade unions and industries. And in this case as in many others despite scientific evidence and acknowledgement from trade unions leaders - the unions stood in favour of the company management and denied the polluting activities of the unit.

Highs and Lows of the Conflict - Chronology of events

S.N.	Year	Event - What Happened?
1.	1958	Government of Kerala contract with Birlas for pulp factory at Mavoor, GoK to provide 0.16 million tonnes of bamboo pa, at the rate of Re. 1 per tonne and 68 mld water from Chaliyar river free of cost
2.	1963	Grasim pulp factory starts operations
3.	1963	Conflict between industry and local community started picking up due to pollution problems, almost immediately after the factory started operating. Throughout 1960s and 70s people from Mavoor and Vazhakad organised a series of protests demanding the Grasim industries follow environmental norms
4.	1968	Staple fibre unit, 2nd unit of Grasim Industries starts production
5.	1972	Pressure from the community and environmental groups increased, government appointed an Expert Committee to study the problem. NEERI, Nagpur designed and implemented an effluent treatment system. Yet the river continued to be polluted.
6.	1974	Agreement was reached with management that the industry will treat effluent properly and discharge the treated effluent further downstream at Chungappalli through a 7 km long pipeline.
7.	1979	Pipeline completed after a delay of 5 years
8.	1979	Through mass action, the agitators destroyed a bund at Elamaram which served in stopping saline water ingress uptill the water inlet of the factory

9.	1982	During Rajya Sabha Petitions Committee, Kerala Pollution Control Board submitted that existing pollution control devices in the factory are sufficient only for treating 50% of the pollution. The management then agreed to reduce the production. However, not much was done.
10.	1985-88	Factory closed down for 2 & ½ years (1986 - 88) due to labour problems.
11.	1988	Factory reopened, annual supply of raw material increased to 0.20 million tonnes at Rs. 250 per tonne when the market rate was Rs 1100 per tonne
12.	1991	One of the pipes of the effluent outlet burst at Kayalam and many people in the nearby areas had to be hospitalised.
13.	1994	It was reported that according to the Panchayat records, 24 persons died of cancer.
14.	1995	Three workers died inhaling hydrogen sulphide while repairing a valve on the effluent pipe line
15.	1999	Management serves closure notice, under section 25 (O) of the Industrial Disputes Act, 1947, citing the inability of the government to provide the promised quantity and quality of raw material as the reason. Government rejects the same and the review petition.
16.	1999	Factory stopped production after immense protests and agitations against it's pollution records
17.	2001	Factory formally shut down

The present status of conflicts and recent developments

Grasim factory closed down in 2001 permanently, and outwardly it would seem that the conflicts in the area would have abated with the river reborn and getting a new life. The natural water flowing during this period would have washed the pollutants into the sea and the water would be clean and clear as it was. However, this not the case yet, here on the banks of Chaliyar in Vazhakad and Mavoor.

There are several new issues are coming up like sand mining, low flows in the river up stream of the bund due to increasing deforestation, granite and red stone mining in the upper reaches, conflicts with in the village panchayat over river restoration, youth involvement in sand mining activities, low fish population, stagnation and no flow due to the Kavanakallu bund cum bridge. How these issues are addressed would have a serious long-term impact on the health and the future of the river. For now it seems that the fight between those who want to restore the river to its original state and those who want to exploit it for monetary benefits will go on, because there are people who have not learnt lessons from the Grasim episode.

At present it seems that the most important issue that is foremost in people's mind is deforestation in upper reaches and sand mining, legal and illegal both. These it seems affect the river most with the polluting industry long gone. Local people say that 10 - 12 kms upstream the river flow becomes very less because of loss of forest cover due to granite and red stone mining in the hills. To exacerbate this situation the sand mining activities have increased manifold supplying sand for the real estate boom that Kerala is seeing these days. It is estimated that the legally allowed sand-mining from the river bed is not able to fulfill the demands of the construction and real estate business. Hence, this demand is quenched through illegal mining operations. Also it needs to be noted that the labour wages for legal and illegal sand-mining operations are highly disproportionate due to the increasing demand for sand.

The Kavanakallu bund cum bridge which was constructed to secure fresh water supply to Grasim Rayons is also a cause of damage to the river. The bund has stopped the natural flow of the river and seasonal washing of the pollutants downstream to the sea. Due to this bund the

river has become stagnant and also creates an illusion of being water surplus. Senior academics like Prof KT Vijayamadhavan fear that the bund would also be acting as a barrier not letting the heavy toxic metals like Mercury being washed away. These could be deposited at the bund and could lead to chronic toxicity for longer periods of time than imagined. This could further lead to the organisms absorbing toxins from water and accumulating it into their bodies. This accumulation would result into biological magnification of toxins through the food chain and might result in serious medical problems for humans in the region in future.



The paddy lands adjoining the factory site, locals say that the waste water leaked in these fields rendering them useless, through the pipelines laid by the industry, above.

On the other hand one also sees the old issues linger on without any proper resolution to them even after half a century of struggle, like possibility of pollution up to the bund cum bridge, deposition of heavy toxic metals at the base of the bund, medical problems can occur due to heavy metals even after several years due to chronic toxicity, compensation to the affected people, impacts of pollution on livelihoods - mainly agriculture, fishing and shell-picking.

Key institutions and people involved

- Mavoor and Vazhakad Village Panchayat
- Save Chaliyar Campaign
- Chaliyar Action Committee
- Kerala State Pollution Control Board
- Grasim Gwalior Rayons
- Chaliyar Struggle Coordination Committee
- Society for the Protection of Environment of Kerala
- Trade Unions - INTUC, CITU, AITUC, STC, BMS, HMS
- Some of the prominent individuals include - Late Shri KA Rehman, Prof. KT

Vijayamadhavan, Prof. M Achyuthan, Surendranath C, Babu Verghese, Shri Abdullah Chaliyar, KA Shukkur, Hamid Ali

Analysis of the socio-political and ecological geography of the conflict

The river Chaliyar plays a very important role in the lives of the people living on the banks of it as is the case with almost all the other rivers. The people have been bound for years to it not only for livelihoods but also for various other religious, traditional, recreational and cultural reasons.

However, as the local people who have been closely associated with the efforts at restoring and regenerating the river state that several social changes are now manifesting and changing the way people relate to the river. Clearly, the main reason behind this is the dramatic change in the life-style of the people. Especially in the context of Kerala, the huge influx of money from the expatriates working in Gulf countries and due to the economic growth that India has seen has transformed the life-style of the people into a western urbanised mould. Even for crossing the river, people use surface transport modes like cars and buses rather than a boat or ferry.

There is a clear disconnect of the people from the river, they rarely take bath in the river, depend directly on the river for drinking water needs or washing clothes leave alone recreational activities like, swimming, boating, fishing, etc. The use of mechanised equipments has been on the rise for such needs. People have even stopped using boats for crossing the river since the bund cum bridge was constructed in Vazhakad. This has also lead to a change in the behaviour of the people in how they react to the local environment and issues related to it.

At present only poor people from the area and specially those coming from outside regions, Orissa, West Bengal, Assam, as daily wage labourers use the river water directly for domestic use, washing, etc but not the locals. This disconnect of the locals to the river can be attributed partly due to heavy pollution that the river suffered at the hands of Grasim Rayons and furthering this practice over a period of years they have themselves started dumping domestic waste into the river.

The regulator cum bund has played its own role in this as well. It has ensured that the shores and the banks of the river remain submerged and the river does not flow naturally but becomes a pool of water. These banks and shores were used for various religious, social and cultural spots for get-togethers, functions, leisure activities, etc. This has further broken the social fabric of how people used and related to the river in their lives. The embankments constructed by the government for river bank protection have also lead to ecological problems and changed the nature of the river.

On the political front, the local people say that in the past when the Grasim factory was operating in Mavoor, the political leadership of the state preferred the company management over the issues raised by the local community. Earlier political parties would not support the community on the issues related to pollution by Grasim factory because of the trade union dynamics in the state as they did not want to lose the trade union support and in Kerala trade unions have been quite strong politically. Trade union issues like industrialisation, employment form solid foundation during election campaigns more so in a left-oriented state like Kerala.

Even though local political leaders supported the community on the genuine issues raised and the struggle received wide support from various sections of the society. Since then politically things have not changed much though. It is not that the leaders are not aware and conscious about the issues related to Chaliyar. Yet, their support is along the lines of their vested interests.

Political decision-making works based on the decisions from the top leadership. Local political leaders in the area like KA Rehman (Muslim League) and Abdullah MP (Congress) have supported the campaigns personally, but this is not the party stand.

At the moment the political parties do not support the genuine environmental and social concerns of the community upfront because of the benefits that accrue from aiding the sand mining labourers and mafia. The number of people involved in sand-mining business is quite huge and these form a solid vote-bank for the political parties not to upset them. This business enjoys immunity originating from the money, resources, influence and support from contractors and real estate sector. In spite of illegal sand-mining being a serious problem, there is no proper regulation or monitoring of it.



The Chaliyar river looks full of water here in Vazhakad, but this is due to the Kavankallu bund downstream, which has stopped the natural flow of water in the river, above.

Ecologically, the region has suffered due to severe contamination from the Grasim pulp industries. The ecological impacts of contamination have manifested in various forms and it has changed the ecological surroundings of the area to a great extent by damaging the natural resources of the area. The river was the one which bore the maximum impacts of the dumping of pollutants in its water. The river ecology has been altered due to this reckless activity. This contamination of river water has led to death of large number of fish species in this stretch of the river. Local people stated that the local Western Ghats fish species are now rare and threatened like Poozan. Even though after so many years since the factory has closed down, the river water has turned relatively clean than it was when the factory was operating. Yet, there are concerns that the pollutants still remain in the river water.

The major issue affecting the ecology of the river and its restoration in the area is the bund cum bridge on the river. This has not only converted the river into a stagnating pool from a free flowing river but also changed the very nature of the naturally flowing river.

As mentioned earlier there is also a possibility that due to the bund the heavy metals released during Grasim operations could still be deposited in the river bed most probably close to the bund. This bund has also stopped the fish migration affecting the feeding and breeding cycles of the marine species of fishes. To counter this loss of local species the government departments have introduced some African and other foreign fish species to increase the fish population.

These various factors together form a complex situation which if not addressed properly would pose a huge environmental problem in the coming years. There is an urgent need to take up river restoration activities with the involvement of the local self governments and various departments including regulation of sand mining and river cleaning up.



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Slow Poisoning of Chalakudy river in Kathikudam

Chalakudy river Pollution: Toxic-contamination and unauthorised water extraction from Chalakudy River by Nitta Gelatin India Ltd.

Description of the study area

The study area is located in Kathikudam village in Kadukutty gram panchayat, Chalakudy block panchayat, Thrissur district in Kerala. It is about 10 km distance from Chalakudy town and approximately 40 km from Thrissur district head quarters. The village is located on the banks of river Chalakudy. The river covers the Kadukutty gram panchayat from three sides - north, south and west.

As the local people say the village was once known for its serene atmosphere and natural beauty, and for the abundance of fresh water, as Chalakudy river flows close by. The whole village was surrounded by streams everywhere. Species of birds and other living beings were in plenty making the village pleasant and lively.

The region receives 3000 mm average annual rainfall. This is through a northeast monsoon from November to March and steady southwest monsoon from June to September. The area can be described as one of high vegetation region. The vegetation is not only found along Chalakudy river but further inland along the banks as well. Chalakudy River is one of the few which still has remaining amount of riparian vegetation in substantial quantities. The riparian forests of the area have been found to be characterised by the presence of typical riparian species of plants, in addition to evergreen and semi-evergreen species. Out of the 319 species of flowering plants identified from the study area, 24 are endemic species of the Western Ghats and 10 are rare and endangered⁷. Major plantations in the area are of Coconut, Nutmeg, Banana, Areca nut, Tapioca and Rubber .

The 130 km long Chalakudy river is the fifth largest river in Kerala. Its northern tributaries originate from the Nelliampathy hills of Palakkad district in Kerala and its southeastern tributaries originate from the Anamalai Hills of Coimbatore district in Tamil Nadu. Chalakudy River is unique in its rich fish diversity; at least 104 fish species have been located from this river. The National Bureau of Fish Genetic Resources based in Lucknow (NBFGR) has recommended the upstream areas of the river to be declared as a 'fish sanctuary'.

This river basin is the only home to a primitive hunter-gatherer tribal group; the 'Kadar' their settlements scattered in the forests of the river basin. The Chalakudy River has hundreds of lift irrigation schemes and 30 Government operated drinking water supply schemes and a population of about 10 lakh directly dependent on the river for various uses. The upper catchment has a 200 year odd history of deforestation for agricultural and forestry plantations. Dams and inter

7. http://en.wikipedia.org/wiki/Chalakudy_River

basin water transfers have added to the degradation. Heavy sand mining, over extraction of water for drinking and irrigation even for other river basins and saline ingress are taking their toll on the river⁸.

However, one can see the destructive effects of the modern day developments in the area, with booming urbanisation and industrialisation leaving its scars on the surrounding environment including the river. This region specifically Kathikudam and its residents, in the context of this case study are witness to the environmental and livelihood destruction brought on by unplanned and unregulated industrialisation after the setting up of Nitta Gelatin India Limited (NGIL), formerly Kerala Chemicals and Proteins Limited in this area.

The issue with the location map in Kerala

The major conflict issues that had emerged with the operations of NGIL in this region are primarily related to unauthorised water extraction by NGIL from Chalakudy River and dumping of toxic waste water into Chalakudy River. This has been further worsened by the leeching of hazardous waste in to the soil around the factory. The issues can be summed up as -

- a) Severe air and water pollution
- b) Health impacts and Environmental impacts of pollution
- c) Loss of livelihood for people, mainly fishing and agriculture
- d) Loss of land fertility and crops surrounding the fields around the factory
- d) Socio-political conflicts due to the various impacts of pollution
- e) Unauthorised water extraction from the river for industrial purposes by NGIL
- e) Local people's struggles to restore the river to its original state with NGIL and also with the state government agencies
- f) Selling of hazardous solid waste by the company management by repackaging it as an organic manure to farmers in other parts of the state

The conflict - description of the conflict and its evolution

Nitta Gelatin India Ltd. (NGIL), formerly Kerala Chemicals and Proteins Limited (KCPL), was set up in 1975 and started operations in 1979 to manufacture ossein and later gelatin at Kathikudam factory for export market. During the period of 1980s and 1990s the company faced scattered protests and demonstrations by the local community opposing the polluting industrial operations and unauthorised water extraction from Chalakudy river by the company. The reports and investigations by various agencies including the Pollution Control Board, the Expert Committee



8. <http://salimalifoundation.org/cps.html>

and non-government organisations have noted that NGIL has not only been dumping the industrial waste into the Chalakudy river and but also pumping millions of liters of water from the river for its consumption without any permission or sanction from any relevant and authentic government agency. During one such interview NGIL officials evaded answering questions regarding the permission to draw water or discharge waste water into the river. The Expert Committee, which constituted of representatives of various public interest bodies including Pollution Control Board, visited the company, the people and other stake holders noted severe discrepancies in company management's account in this regard. The committee strongly recommended to the company management - water budgeting by providing water meter at the intake and outlet points. However, the company management seems to have ignored these recommendations and is carrying its business as usual.

During the early stages, due to the pressures and inducements by the company the protests fizzled out. The leaders of the protest campaigns were offered employment in the factory, gifts hampers and other incentives were provided to the community members to keep them submissive, strategically during the festival seasons. These measures worked initially in favour of the company to disperse the protest campaigns against it. The local people were diverted from the main issue because of the favours and incentives.

The Chalakudy river, Kathikudam and NGIL factory in the location map below.



The Chalakudy river, Kathikudam and NGIL factory in the location map below. In 2008, KCPL's shareholding pattern changed with the state government divesting its shares in KCPL to Nitta Gelatin Inc, Japan. It made Nitta Gelatin Inc, Japan the majority share holder of the company. The name of the company changed from Kerala Chemicals and Proteins Limited to Nitta Gelatin India Limited⁹. So now the promoters of NGIL include both - Nitta Gelatin Inc, Japan and Kerala State Industrial Development Corporation¹⁰.

9. For details of NGIL's shareholding pattern please see - <http://economictimes.indiatimes.com/nitta-gelatin-india-ltd/shareholding/companyid-13493.cms>

10. For more details, please see - <http://www.gelatin.in/about.html>

Since 2008 with the formation of 'NGIL Action Council', the community has intensified its protests and demonstrations against the company and made its intentions clear that they want the industry shut down permanently. Throughout this period NGIL Action Council has continued its series of protests and meetings in this area to pressurise NGIL management and to spread more information about the issue including submission of memorandum against the company to the Environmental Sub-Committee of the Kerala Assembly.

The action council wishes to continue these activities to pressurise the company to clean up its act. It has been shown time and again by various studies, reports and by the local residents that industrial production processes of the factory and the untreated hazardous waste disposal by it have been destroying the local environment, posing serious health, life and livelihood threats to the residents of the area. A commendable effort in this direction was a comprehensive and incisive report published by Jananeethi in 2010, a legal and human rights NGO based in Thrissur on pollution by NGIL in this area.

The different stances of stake-holders, local self-government, industry, etc

The different sections of the society have taken varied stances on this issue as with any other issue depending on which side they are. The NGIL management, the political leadership, the pollution control board, employees and the trade unions favour the company denying the pollution charges. On the other side are the people from the area, represented by NGIL Action Council, local panchayats and other environmental groups like Chalakudy Puzha Samrakshana Samithi (CPSS), Jananeethi and others which have been supporting this campaign.

The irrigation canal close to the factory, locals say that the wastewater and acid from the factory



leaches into this canal, above.

The NGIL management has been denying any wrong doing in this whole issue of disposing waste water, hazardous solid waste and unauthorised water extraction from Chalakudy river. The top executives of the management have been issuing press statements often stating that the water coming out of the factory is treated within the company during the full 24 hours and that whatever is transported through trucks outside the factory is either the final product or semi finished products required for further processing.

The major political parties in the state also favour NGIL and support its claims of being a non-polluting and environmentally compliant industry. There have been allegations that because NGIL donates to party funds of almost all political parties especially during the elections as requested party leadership, they support NGIL and not the action council.

The Kerala State Pollution Control Board (KSPCB) has also been largely maintaining its stance that there is no pollution in the area due to NGIL. They refer to the Kerala High Court order to continue NGIL operations and state that if there would have been pollution the High Court would not have given such an order. KSPCB also intervened in some instances where complaints were made to it by the local people in this regard. On its part it had written to NGIL to treat waste water before disposing it in the river. The NGIL has been saying on its part that they are following the prescribed treatment and pollution control measures. It seems though that there has been no follow up inquiries by the KSPCB in this regard.

The trade unions, employees and some of the local people also support the claims of NGIL that it is not polluting the area. The trade unions and the employees have been doing so as to protect the jobs that they have with the company and also the incentives that come with it. Some of the local people also support NGIL because they are handed occasional gifts by the company. The employees and some local residents also fear that if they contradict the company on this issue they might have to bear the consequences of not following the official line.

On the other hand the NGIL Action Council which has been agitating on this issue for some time clearly state that the company is destroying the local environment, natural resources, lives, livelihood, health and social fabric of the community. They demand that the either the company should clear the mess created by it or it should be shut down permanently. It can also be seen that the action council represents the sentiments of a large number of people of the area apart from those who have interests in the company continuing operating.

The Kadukutty gram panchayat and Chalakudy block panchayat have also been reminding NGIL to clean up its act. In this regard they have been echoing the sentiments of the people based on the situation in the area. Kadukutty GP has dismissed the license of the company to operate and issued stop memos twice in this regard. However, both these times the cancellation has been reversed by the Kerala High Court. Kadukutty GP also states that NGIL has not taken permission from it to extract water from the river.

The environmental organisations like CPSS and Jananeethi have played a crucial role in supporting the community and the action council. These have been encouraging the local people to raise this issue and also providing them with technical know-how and moral support to continue pressurising the company, the political leaders and the government to clean up the environmental damage caused in the area.

Highs and Lows of the Conflict - Chronology of events

S.N.	Year	Event - What Happened?
1.	1975	Project Planning began for setting up a factory at Kathikudam by KCPL
2.	1979	Commercial production of Ossein formally started at Kathikudam plant by KCPL
3.	1985	KCPL factory granted export house status
4.	1980s	Scattered protests and demonstrations by the local people opposing the air and water pollution by the factory. However, during the early stages, due to the pressures and inducements by the company the protests fizzled out.
5.	1993	Panchayati Raj Act came into force, giving panchayats more autonomy and power to handle their issues. Local sources say that this acted as a shot in the arm of panchayats to take decisions accordingly
6.	1990s	Throughout this period scattered protests and demonstrations continued by the local community. One Shaji Joseph had initiated a strong protest campaign against KCPL during this period. But Shaji was offered employment in KCPL and the protest was dismissed.
7.	1995/	A strong protest/ demonstration organised in 1995/96 by a civil committee named 1996 "Pourasamithi".
8.	1998	KCPL commissions gelatin plant at Kathikudam
9.	2001	Ossein Division of the Company was under lock-out from 23.10.2000 to 03.11.2000 due to labour unrest which badly affected the operations of the company.
10.	2003	KCPL Malineekarana Virudha Janakeeya Samithi organised a convention at Kathikudam U.P.School. Participants included Sasthra Sahitya Parishad, Chalakudy Puzha Samrakshana Samithi, functionaries of Jilla Panchayat and Presidents of Kadukutty, Koratty, Annamanada, Kuzhoor, Puthanvelikkara, Kunnukara and Parakkadavu Panchayats.
11.	2008	Company name changed from KCPL to Nitta Gelatin India Limited (NGIL)
12.	2008	Formation of 'NGIL Action Council' to continue the struggle, the protest continued in the past as well but not formally in the name of Action Council
13.	2008	Dharna in front of the factory gate begins
14.	2009	Action Council registered formally under, 'society's registration act'
15.	2008/2009	Throughout this period Action Council continued its series of protests and meetings in this area to pressurise NGIL management and to spread more information about the issue including submission of memorandum against the company to the Environmental Sub-Committee of the Kerala Assembly.
16.	2010	NGIL Action Council participated in the local panchayat elections. Even though they did not take the election campaigning seriously, yet one of its candidates won the ward member election from the same ward where NGIL is located. Three others lost with very low votes.
17.	2010	Detailed report on pollution by NGIL published by Jananeethi, a Thrissur based social organization
18.	2011	Kadukutty Gram Panchayat did not renew NGIL's license to continue production
19.	2011	Kerala High Court Judgment staying the cancellation order by the panchayat.

The present status of conflicts and recent developments

NGIL Action Council has come up with new demands recently in this matter. These include - close down the company and compensate all concerned including employee, farmers whose land is left barren since long time. Apply latest scientific technique to reclaim the pol-

luted land to previous stage, health survey - to know the actual diseases of local residents due to the pollution from the company.

In 2010, NGIL Action Council also participated in the local panchayat elections in Kadukutty. Even though they suggest that they did not take the election campaigning seriously, one of its candidates won the ward member election from the same ward where NGIL is located. Three others lost with very low margins. This in fact as a parameter shows that the action council has support from the community.

The Kadukutty gram panchayat has not renewed NGIL's license to operate twice in 2009 and this year onwards, 2011. The panchayat members also state that they have not given any authorisation letter to NGIL regarding withdrawal of water from the Chalakudy river.

The NGIL factory waste water drains into the Chalakudy river, below.



Given the seriousness of the issue and the number of problems that the factory is creating for the local people it is absolutely necessary to find a permanent solution to it. And it seems that the local political leaders too want a solution to this problem sooner than later. At least some of their actions suggest this. Recently, in October 2011, the Member of Parliament (MP) from Chalakudy constituency sought a meeting with the local people in Kathikudam to discuss and know their views on this. During this meeting the action council members in Kathikudam and some of the community members presented their views strongly to the MP and demanded that the resolution of this issue should be taken up on an urgent basis.

The action council members are also considering to appeal against the Kerala High Court order staying the cancellation of the NGIL license by Kadukutty GP.

Key institutions and people involved

- NGIL Action Council
- Nitta Gelatin India Limited
- Kerala State Pollution Control Board
- Kerala High Court
- Kadukutty Gram Panchayat
- Chalakudy Block Panchayat
- Chalakudy Puzha Samrakshna Samiti, Chalakudy and Jananeethi, Thrissur
- The local community of Kathikudam village including - Anil Kumar, Chandrasekharan, Leena Davis, Sherlie Paul, Babu, Jijo, Joji Matthew, Jose KA, Unni and others

Analysis of the socio-political and ecological geography of the conflict

During the field visit and discussions with various people in Kathikudam including local community, gram panchayat members and action council have provided deep insights and perspectives into socio-political and ecological changes that can be seen in the area over a period of time.

On the social aspect the local people suggest that the entire social scenario of the village has seen a drastic change. The social fabric of this village community has suffered immensely due to NGIL operations and pollution. People from other communities resist visiting relatives and families in Kathikudam because of the poor quality of environment. Some people have also witnessed unwillingness of outside communities to marry in the village. It was even claimed that the instance of unmarried youth and long-wait for marriages are increasing in the area.



The Member of Parliament, Chalakudy Constituency in a meeting with local people in Kathikudam.

Despite the poor environment quality the local people cannot leave the village as well. Because of the poor environment quality the land rates have come down and are very low compared to other places. Selling properties here at present would incur economic loss and the returns would definitely not enable the locals to buy property and resettle anywhere else. Poor land deals have also made difficult the settlement of grown-up youth in the village.

Some people said that the company is also trying its best to create a split among the families using various methods like donations during festivals, giving job offers and terminating selective people, pressuring relatives of people who support the agitation which are damaging the social fabric and creating social tension in the village. The blame of this tension however falls on the people agitating against the company.

After the company began operations police arrests, legal cases on the local people have become quite common. The people are scared of police cases and also of being harassed by company hired goondas.

Politically, local sources state that there are a few aspects based on which the political parties have been dealing with this matter. For the top level political leadership in the state the funds provided by NGIL is keeping them silent and not supporting the community in this matter. The larger trade union politics also plays an important role in political parties siding with the industries. Though local political representatives and panchayat members have been convinced by the community and action council to accept that NGIL is violating the rights of the people and also to accept their demands. So the local political leaders support action council personally but this can not be understood as the party stand. The local leaders know that NGIL does not have consent from the gram panchayat for water extraction and for waste water disposal.



The entrance gate of NGIL and the adjoining office of the NGIL Action Council in Kathikudam.

Recently, some of the parties have shown the tendency to lean towards the agitation but this has not been done openly as yet. The Chalakudy MP recently himself proposed to meet the action council members to understand the situation and also assured that he will do whatever he can to resolve the issue. Some of the members of the action council have political affiliations but they support action council despite these affiliations. Several eminent and common people with varied political ideologies have come together for this environmental cause.

Ironically, in the village the political representatives collectively stand for this cause but at larger forums they stand with their party colleagues and not with the other people from their own village. Local people say that it is a public secret that NGIL is throwing huge amounts of money on political parties to run their operations. It seems that for a technical/ pollution problem NGIL is trying to manipulate political equations to continue its business.

Politically, now action council is also becoming active and involved in electoral politics. Action council took this step of participating in elections due to deep mistrust on the existing political parties. They had their own candidates fighting the elections in the last poll and even got one candidate elected to the gram panchayat.

The opposition parties in the state are sensing this as an opportunity to grill the ruling party of the state on this issue. They have been visiting the place for this reason. The ruling party also understands and appreciates this situation and hence they are trying to send their leaders in Kathikudam to appease the community and the action council. The action council and the community are trying to use the concepts of people's awareness on this issue and pressuring the political parties.

Environmentally, the severe air, water and land contamination of the area due to ossein and gelatin production has destructed the local ecology. Environmental issues are the mother of all the problems, affecting in their wake the social, political and economic dynamics. It is due to the environmental problems that people of this area in desperate conditions. The scientific and comprehensive investigation of contamination by Jananeethi in this regard has clearly shown the extent of pollution levels.

The environmental damage has lead to the contamination of water for drinking and domestic use, irrigation, fishing, pleasure etc in the village. The people of the village feel sad about the damage caused to the river. The farmers of the area are afraid to carry on cultivation and farming due to toxicity in the soil and quite a few of them have stopped farming. Due to soil toxicity paddy fields have become barren and walking in the fields gives rise to itching and other skin diseases. The small farmers also cannot bear decreased output from their fields. On the other hand to show case their innocence NGIL has started cultivating some of the land to show that agriculture is possible. They have spent huge amounts of funds to cultivate paddy in these lands.

The leaching of waste water, acid and heavy metals from the solid waste has contaminated the soil and ground water of the village. The air pollution and discharge of toxic gas emissions from the factory has lead to several diseases in the village like breathlessness, suffocation, dizziness, nausea, asthma and lung infection. The by-products of the ossein production process have led to increased incidence of diseases in the village. The Chalakudy block panchayat has begun an investigation to assess the health impacts in this area.



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World's Toxic Hot-spots in Eloor-Edayar on Periyar river

Periyar river Pollution: Industrial pollution and toxic hot-spot in Eloor - Edayar region

Description of the study area

River Periyar is the longest river in Kerala, with a length of 244 km within the State. It possesses the highest water potential among the river basins of Kerala. The river is formed by the confluence of rivulets originating from the Sivagiri Hills. On its way to Lakshadweep Sea the river is enriched with water of minor tributaries like Muthayar, Perunthuraiar, Chinnar, Cheruthony, Kattappanayar and Edamalayar at different locations.

At Aluva, the river bifurcates into the Marthandavarma and the Mangalapuzha branches. The Mangalapuzha branch joins Chalakkudy river and empties into the Lakshadweep sea at Munambam, and the Marthandavarma branch flows southwards, through the Udhayamandal area in Eloor municipality and joins the Cochin backwater system at Varapuzha.

Eloor is located 14kms north of Kochi in the state of Kerala. It is an island of about 11.21 square kilometers, with a population of approximately 40,000, and surrounded by the two branches of the Periyar river. The foundation stones of industry in this village were laid here 50 years ago and soon followed the construction of a bridge between Eloor and Kalamassery which connects the island with the mainland. Today there are 247 factories functioning in and around Eloor. The major industries in Eloor include - Travancore Cochin Chemicals Ltd (TCC), Fertilizers and Chemicals Travancore Ltd. (FACT), Indian Rare Earths Ltd., Hindustan Insecticides Ltd., Binani Zinc Ltd., Merchem Ltd. and Indian Aluminium Company Ltd. People who primarily depended on the Periyar river for their livelihood were later hired by the new factories; this growing number of factories contributed to the increase in pollution in this area.



The industrialisation process in Eloor led to severe land, air and water pollution in the area. The factories established are one of the worst polluting kinds like pesticides manufacturing, fertilisers, alumina, rare metals, etc. These have contributed in large measures to pollute the area. Local people note that the extent of pollution is such that - one can taste DDT even in mallard duck eggs and in tender coconut water; apart from the fact that all the effluents from the factories ultimately end up in the River Periyar. The highest concentration of highly toxic substances can be found in the Kuzhikandom Thodu, a stream which flows through the heart of the Panchayat and finally joins with the rivers. About 100 families reside on either bank of this stream where people are suffering from various diseases directly linked with toxic substances¹¹.

Periyar river is significant from the point of view of energy and industry, Idukki and several other hydroelectric projects are located in this river and the lower reach of the basin is the hub of industrial and commercial activities. Twenty five percent of the industries of the state are located along the banks of River Periyar and the concentration of these industries is within a stretch of 5 km in the Eloor- Edayar area, which is only 10 km north of Cochin port. These industrial complexes depend on the river for intake of process water and disposal of effluents.

The issue with the location map in Kerala

The major conflict issues that emerged with the setting up and operations of various industrial units in Eloor - Edayar region are primarily related to dumping of toxic waste and effluents into Periyar river without proper treatment. The industrial units include - Travancore Cochin Chemicals Ltd (TCC), Fertilizers and Chemicals Travancore Ltd. (FACT), Indian Rare Earths Ltd., Hindustan Insecticides Ltd., Binani Zinc Ltd., Merchem Ltd. and Indian Aluminium Company Ltd. are some of the big industrial units in the region. Around 250 small and large industries are spread across the Eloor - Edayar belt in the downstream reaches of the river. The environmental condition has been further worsened by the leaching of hazardous waste which includes heavy metals like zinc, lead, cadmium, chromium, copper, iron into the soil around the region. The issues can be summed up as -

- a) Air, water and soil contamination due to improper disposal of effluents in Periyar river and the adjoining water channels
- b) Health impacts and Environmental impacts of this contamination
- c) Loss of livelihood for people, mainly fishing and agriculture
- d) Loss of land fertility and crops surrounding the fields around the factory
- d) Socio-political conflicts due to the various impacts of pollution
- e) Local people's struggles to stop the industrial units from disposing untreated effluents into the local environment including the Periyar river

The conflict - description of the conflict and its evolution

The process of industrialisation in Eloor - Edayar began in 1950s with the setting up of Hindustan Insecticides Limited in the area. Thereafter, several such industries like FACT, TCC, Indian Rare Earths, Binani Zinc, Merchem etc have been set up and operating in the area. These industries used fresh water from the Periyar river and pumped the waste into the surrounding environment including the Kuzhikkandam Thodu, a creek and the adjoining paddy lands. These were converted into hazardous waste dumps by these industries. For several decades now the people of Eloor - Edayar and neighbouring villages have been protesting against the polluting factories under the local collective called Periyar Malineekarana Virudha Samithi (PMVS).

11. Source URL - <http://www.periyarriverkeeper.org/>

However, since the early 1990s the conflicts and demonstrations against the pollution have increased in the area and people are eager to find a permanent solution to the pollution problems, even though before 1990s they faced problems on account of pollution they were not able to show that openly. But as the time passed they have become more open and restive about the whole episode. It is also that in the 1990s a lot of national and international environmental organisations began studying Eloor _ Edayar region because of their focus on pollution and toxic-contamination in various parts of the world. During one such investigation Greenpeace found that Eloor - Edayar region was among one of the most toxic hot-spots in the world. As a follow up they did a study on the health survey which pointed to serious health risks to the people of the region. The local people also were becoming more aware of the issues and the problems posed by the polluting industries like visible pollution of the river, loss in fish catch, fish deaths, diseases, accidents, etc.

The Eloor - Edayar region and the Periyar river, the location map, below.

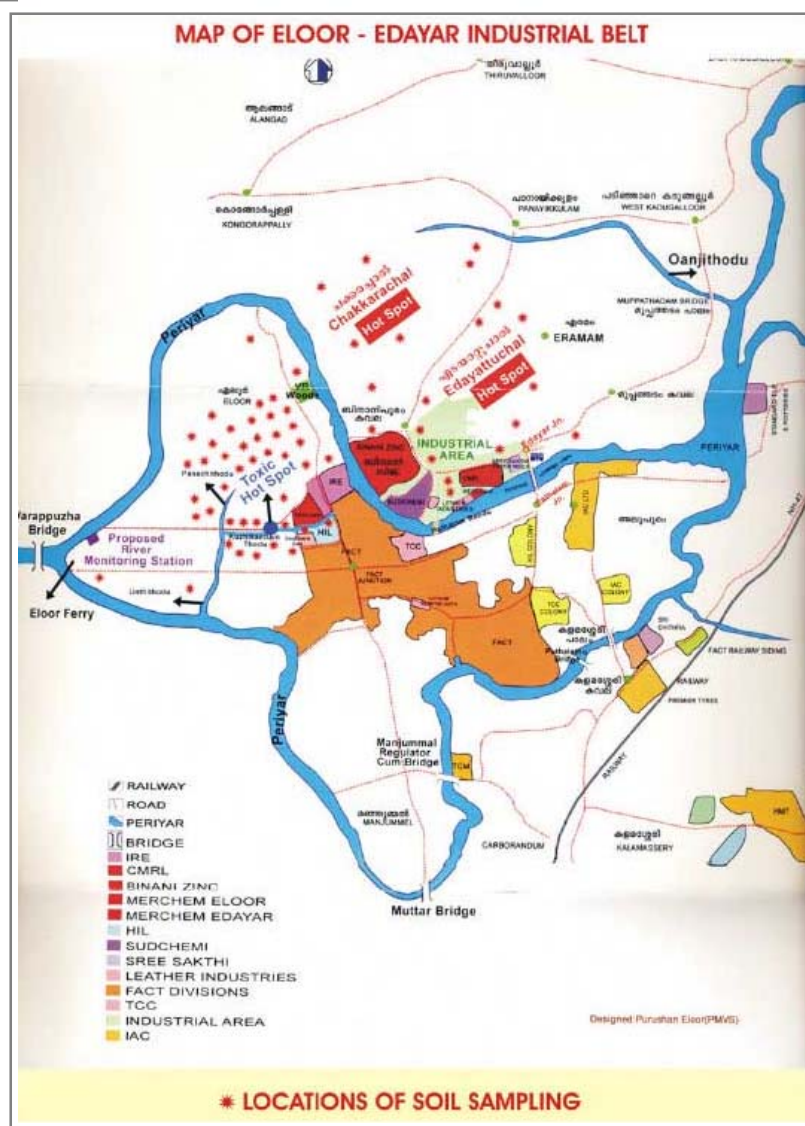


Due to the above mentioned incidents and events, the protest and pressure on the industries to clean up the mess kept on increasing. In 2004, the Supreme Court Monitoring Committee (SCMC) on Hazardous Wastes assessed the situation in Kerala and stated that the ground realities in Kerala are terrible. It also put the onus of the wrong doing on the state government and its agencies stating that the Kerala is one of the states that have failed miserably to act on hazardous waste and KSPCB has willfully and callously disregarded the Supreme Court's orders on such. Later on, in a bid to make the process more transparent and participatory it directed the PCB to form a Local Area Environment Committee (LAEC).

The LAEC carried out the environment audit and environment impact assessment of the industries in the region to SCMC in 2006. The EIA report showed a very poor picture of Eloor Edayar region and recommended immediate action to stop further deterioration. It also recommended that KSPCB should ensure zero discharge within the next three years with closure orders against those who keep discharging even after being warned. The committee also recommended to KSPCB to ensure water supply to the severely affected people of the 5 wards of

Eloor gram panchayat and free medical facilities. The committee's term ended in March 2006.

Since then, things have changed but ever so slightly that one might not even notice them. The industries are supplying water to some families in the region, some free medical camps are also being organised. But the main issue of pollution remains because there is no monitoring now, KSPCB is lax in implementing the orders, government is not too keen to upset the industry managements, the gram panchayat is also not interested, since it gets major share of revenue from the industries and the local people continue to protest and demonstrate against such non-actions.



The different stances of stake-holders, local self-government, industry, etc

As has been discussed in earlier cases the positions taken by various stake-holder groups in Eloor-Edayar region are based on their own interests and financial gains largely in terms of industrial production, jobs and employment with industries in this region. The stake-holders include the industry managements and associations, trade unions, employees, local municipal bodies, state government and its agencies like pollution control board which favour the industrial operations and the subsequent polluting activities of the industries. These have been overlooking the pollution issues in the area despite huge scientific data on contamination and health hazards to the community. There has been acceptance on part of some of these stake-holders regarding the pollution that the industries have created but the issue gets overlooked because of the influence, power and resources that the industries hold. On the other hand there are groups of stake-holders who have been drawing attention to this issue and the severe problems caused by it regularly, but these being effectively in minority get ignored often. This group includes local community, grassroots anti-pollution organisations like Periyar Malineekarana Virudha Samithi, other environmental groups like Greenpeace, Peoples' Union for Civil Liberties (PUCL), the Supreme Court appointed committees like Supreme Court Monitoring Committee (SCMC), Local Area Environmental Committee (LAEC) and environmentally conscious individuals.

The company managements of industrial units like FACT, TCC, Merchem, etc and industry associations like CII have been over the years ignoring the environmental problems caused

by dumping of waste water and hazardous solid waste around the area. Despite knowing the facts and the problems that this activity is causing for years, they have been continuing to do the same and not implementing proper treatment, control and disposal procedures for the waste generated. This is mainly because externalising the cost of treatment, control and disposal of waste on the local environment and the community helps them cut production costs and increase profits from the operations. It is mainly for these reasons that they have been very reluctant and resisting any measures to control the menace.

The map of toxic hot-spots in Eloor-Edayar, courtesy EIA report by LAEC.

The trade unions in the area largely favour the industries and support their claims of non-polluting and development oriented production processes. This is mainly to hold on to their own bases within the industries and also on the workers and employees of the industries. It is obvious from their actions that they are trying to save their own constituencies for their own survival. As long as the industries and workers are there, the trade unions would have the resources and the reason to operate. Hence, they have been standing firm with the industry managements on this issue. However, after a prolonged struggle and opposition by the local community and the environmental groups some trade union leaders suggested recent trends show that they are coming around and are now aware and understanding of the problems and impacts of the pollution. They are sincerely working on such issues and trying to maintain equilibrium with the environment.

The employees and workers of the industries in Eloor-Edayar region have also been favouring the industries on these issues due to employment and livelihood reasons. Industries are the main source of employment in this region. They also fear negative consequences in case they voice opinions even though many in the families of the retired and employed themselves suffer with health problems. The earnings and the question of survival keeps them to silently suffer.

The officials of Eloor Municipality also refuted the findings of various studies on pollution and health impacts of the industries. They maintained that industrialisation has been good for the development of the area with employment, money, other incentives and opportunities, funds for the municipality coming from the industries. It looks likely that for development work the municipality depends on the industries to provide funds like water supply, roads, public festivals, health camps, etc.

The Kerala State Pollution Control Board (KSPCB) over the years has been watching silently from the side-lines whatever has been happening in Eloor-Edayar. It has not been able to control and take punitive measures against the non-compliant industrial units in the area. The local groups working on the pollution issue state that KSPCB has failed miserably in preventing industrial pollution. KSPCB also invited a contempt of the Supreme Court when it failed to implement its orders on hazardous waste in 2003. The experiences and reports show that the KSPCB has implicitly sided with the industries.

Apart from the above the local and international environmental and social organisations have continuously shown through studies, reports, health surveys, scientific data and chemical analysis that the problem of pollution and contamination is severe. They have brought out their findings and conclusions on the basis of such data and studies. The studies show the varied impacts of pollution which have not spared a single aspect of life.

These organisations have taken an environmentally conscious and entrenched positions to force the industries to clean up their acts. And needs to be added that this position of theirs is not

without cause and logic. Several local organisations in the area including PMVS, PUCL and others have repeatedly proved the damage caused by industrial pollution, their findings and conclusions have been supported by studies done by international organisations like Greenpeace. Even the Supreme Court appointed committees have reached the same conclusions during their investigations. However, despite these solid evidences and data, the implementation of various solutions for the problems have not materialised.

Highs and Lows of the Conflict - Chronology of events

S.N.	Year	Event - What Happened?
1.	1954	Hindustan Insecticides Limited factory is one of the oldest factories in Kerala set-up in 1954 for the Malaria Eradication Programme of the Government of India. The factory manufactures DDT, Endosulfan, Dicofol and Mancozeb.
2.	1982	HIL commissions a Centralized Effluent Treatment Plant. Between 1954 and 1982 the effluents were released untreated.
3.	1990	A creek known as 'Kuzhikkandam Thodu', carrying highly contaminated water and draining into the River Periyar on fire due to burning of toluene, which was discharged from HIL.
4.	1990	No action taken by authorities in the matter of abating pollution and in taking effective safety measures, the local residents decided to close the stream. In order to prevent that, ADM Fort Kochi convened a meeting where KSPCB admitted that polluted water flowing through Kuzhikkandam Thodu is not properly treated by the factories and that the main source of polluted water is HIL and FACT.
5.	1997	The Supreme Court appointed a High Power Committee with Prof. MGK Menon as its Chairman to examine all matters in depth relating to hazardous waste and violation of environmental laws.
6.	1998	Two massive episodes of fish deaths in July. Analysis of water samples by KSPCB from 12 points in the river found concentration of ammoniacal nitrogen at 12 to 24 mg/litre as against permissible limit of zero.
7.	1998	Eloor Gram Panchayat cancelled the license of Merchem company, but it continues functioning with the consent of KSPCB.
8.	1999	Greenpeace conducted a sampling of the Kuzhikkandam Thodu area in Eloor and collected water, sediments and soil and analyzed for organic contaminants and heavy metals. Greenpeace declared the Eloor industrial area one of the top toxic hot spots in the world.
9.	2000	Periyar Malineekarana Virudha Samithi, aggrieved by incessant pollution submitted several representations to the concerned authorities as well as erring companies to take effective steps to redress the grievances. Thereupon, KSPCB convened a meeting with Periyar Malineekarana Virudha Samithi.
10.	2000	The Comptroller and Auditor General reported that due to the insufficient monitoring of effluent treatment by industries as well as KSPCB, Periyar river was polluted with high concentration of chemicals.
11.	2001	People protest against the industries by blocking a stream that carried toxic waste into the river.
12.	2003	The Supreme Court constituted a Monitoring Committee to oversee that the directions issued by it are implemented timely and without any laxity or delay. The Monitoring Committee was also empowered to co-opt or constitute any authority, as the Committee may deem fit and proper to make its task easy.
13.	2003	In a follow up study, Greenpeace analysed more samples from the same area and found the sediments were contaminated with between 20 and 37 organochlorines, as well as numerous hydrocarbons.
14.	2003	Green peace International conducted a health survey in the locality and found that there is an overwhelming increase in most types of systemic diseases at Eloor.

15.	2004	A massive fire gutted the endosulfan plant of Hindustan Insecticides Limited, emitting toxic gases into the air.
16.	2004	In August Supreme Court Monitoring Committee on Hazardous Wastes assessed the situation in Kerala. Supreme Court Monitoring Committee also directed the Board to constitute a Local Area Environmental Committee (LAEC) for Eloor-Edayar industrial belt.
17.	2004	In October SCMC completed a second round of review on the facilities available with the industrial units for treatment, storage and disposal of hazardous wastes. LAEC constituted by KSPCB for Eloor region.
18.	2004	In November this year, the LAEC carried out an environmental audit of all the 247 factories in Eloor.
19.	2004	SCMC on hazardous wastes expresses shock at non-compliance of the apex court order for closure and pulls up the Kerala PCB.
20.	2004	Kerala PCB issues show cause notices to 170 factories which were found to have violated the Environment Protection Act and the Hazardous Waste Rules.
21.	2004	A report published by Dr. M.L. Joseph, for Kerala Research Programme for Local Level Development, Centre for Development Studies, Thiruvananthapuram, stated that gamma spectra analysis of three species of edible fishes, showed significant level of radioactive contamination due to Thorium.
22.	2005	Eloor region is filled with poisonous smoke, forcing LAEC to recommend closure of FACT acid plant, the emissions were much beyond the approved parameters.
23.	2005	LAEC submitted its environmental audit report 2004-05 to the SCMC. The report was accepted by the Supreme Monitoring Committee.
24.	2005	Based on the final environment audit report of the LAEC, SCMC asked KSPCB to work out the individual shares of the collective penalty at the earliest.
25.	2006	LAEC submitted its Environment Impact Assessment (EIA) Report (2004 - 2006) to SCMC in March which shows a very deplorable picture of Eloor-Edayar industrial belt and demands immediate action.
26.	2007	KSPCB puts on hold the decision to collect Rs. 2.5-crore collective penalty imposed on factories on the Eloor-Edayar industrial belt for polluting the Periyar.

The present status of conflicts and recent developments

In terms of changes in conditions in Eloor-Edayar region in conflicts - there are varied perspectives and opinions depending on which side of the fence one is. The local environmental groups state that pollution levels and the behaviour of the industries have not changed much. Even after the recommendations by the SCMC and LAEC to reign in the industries and to control pollution, there is still a lot to be desired. These people claim that out of 288 industries, only 15 - 20 might be using advanced waste treatment technologies presently. On the other hand the KSPCB and local municipal authorities maintain that industries are adhering to the zero discharge principle and they are treating the waste fully.

Interviews and discussions with social activists, political and trade union leaders suggest that according to recent trends political parties and trade unions both have become more understanding and sympathetic to environmental issues. But they are not taking any firm steps to resolve this issue. The local political leaders also accept the facts about environmental issues but they are not in a position to take decisions because of two reasons - one, the decision making remains with the top leadership which is highly influenced by trade unions due to employment aspect and two, they also have to generate funds for local activities from the industries. Hence it is difficult for them to take stands against the industry.

The effluents flowing directly into the river from the industries, sourced from The Hindu Businessline, below.



There is also an acceptance that the industrial production has caused immense damage to the environment, people's health, river, lives and livelihood. But then these are brushed off easily as fall outs of bigger things like industrialisation, development, money, income, prosperity and such.

The environmental groups on the other hand have been working tirelessly to create more pressure and awareness on such issues in the area. And some of the events in the recent past have shown that there are instances when they have forced the industries to compensate the families. The PMVS has managed to ensure that the industries supply water free of cost to 2500 families who live in the most affected area and have no water sources to rely upon. They have also forced the industries to provide medical insurance to around 3000 families in the area, with a coverage of Rs 30,000 per family per year. These are definitely small steps in a big struggle but might be just enough to keep people fighting.

Presently, the local samiti is also working on a new strategies and demands to change the overall situation like demanding for a river protection authority, regular monitoring using tracer/sensor technology, empowered committee of all stake-holders, monitoring and penalising pollution activities, appointment of environment wardens among others.

So even though some of the events and the discussions show that the attitudes are changing on this controversial issue, from the observations it seems that there are underlying main issues that have not been resolved.

Key institutions and people involved

Industry managements and associations like Confederation of Indian Industry, Edayar Small Industries Association

- Trade unions in the industries -
- Employees and workers of several industries,
- Local municipal bodies like Eloor Municipality,
- Kerala state government and it's agencies like Kerala Pollution Control Board

- Local Community
- Grassroots anti-pollution organisations like Periyar Malineekarana Virudha Samithi (PMVS)
- Other environmental groups like Greenpeace, Peoples' Union for Civil Liberties (PUCL)
- The Supreme Court appointed committees like Supreme Court Monitoring Committee (SCMC), Local Area Environmental Committee (LAEC)
- Environmentally conscious individuals.

Analysis of the socio-political and ecological geography of the conflict

The conflict over a period of quite a few years has left its mark on the socio-political landscape of the area. The industrial production and environmental problems have changed the social and political equations. Socially even though the income levels have gone up and a certain section of the society is employed with the industries, there are also other matters that have come up due to the industries like education facilities. However, health surveys have shown that most of the families are suffering from serious health problems like cancer, congenital birth defects, bronchitis, asthma, allergic dermatitis and stomach ulcers. This means that most of the earnings are being spent on medical expenses.

On the other hand people in favour of industrialisation state that because of the industries there has been development in Eloor-Edayar area. The industries have brought along good jobs, income, schools, health facilities for the local people. Other wise this area would have remained undeveloped like so many other tribal areas of the state. Environment is important but not more than development.

The visible change in colour of river water due to effluents being dumped into it.



Presently, it has also been seen that the number of people employed by the factories in the region is coming down, for instance local sources say that FACT at some point employed 10000 workers but now it has cut down the work force to 2500 only and this is the case with other factories as well. Most of the industries are going for more automation and mechanised processes to cut costs in this era of liberalisation and competition. People who have lost jobs are now working as construction labours, daily wage workers in cities like Cochin.

The local municipal leaders also insist that the industries are doing a lot to fulfill their social obligations towards the people. In those instances where they do not, the municipality forces them to pay funds for public services like water, health, education, etc. However, if this could absolve them of what they have done to surroundings and to the people remains a crucial question.

Politically, the leaders and parties now show some support to the sentiments of the local people on environmental and social issues like noting these in their election manifestos. But these words are not being translated into actions from these parties. The main reason behind this is the political culture of trade unions which drive the political decisions. The gram panchayat level leaders cannot put enough pressure on the top senior leaders to change their positions. Due to employment and funding concerns the parties evidently support the industries.

Some people point out that the parties also support the local community and the samiti and accept the pollution facts but still the balance is tilted towards the trade unions. Gram panchayat level political leaders do not have the powers to deal/ resolve pollution problems of such huge scale as in Eloor-Edayar. These bodies can only advice the PCB to take action on such activities.

On the environmental front, a lot of things have changed because of the contamination of water bodies, land and ground water. The biggest sufferer on this front is the Periyar river, which has been converted into a dumping ground by the industries. The studies have shown that the river bed is completely covered with heavy metal deposits from the polluted waste water. The fish catch in the river has gone down drastically from 7 kg to 300 gms. Out of 35 species of fish only 12 can be found now. Ambient air quality tests have shown the presence of known carcinogens like carbon di sulphide, benzene, chloroform, carbon tetra chloride and hexa chloro butadine.

The food samples tested from the area have showed dangerous levels of contamination (1500 - 10000) times higher than what has been prescribed by FAO, heavy zinc contamination has been found in curry leaves, endosulfan in coconut and DDT in bananas. The chicken eggs tested from Eloor were contaminated with dioxins, DDT, endosulfan and DDE.



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Farmers Versus Fishermen in Kuttanad-Vembanad Wetland System

Water Conflicts in Kuttanad wetland region of Vembanad lake

Description of the study area

The Kuttanad floodplains comprise marshy low lying areas below mean sea level, coastal alluvial belt, uplands of higher elevation, river networks and backwaters, contributing to a unique ecology. The ecological character of the wetland is the capacity to provide a wide range of naturally occurring 'ecosystem services'.

Kuttanad Wetland System (KWS) is a part of the Vembanad Wetland System (VWS), which is a large estuary stretching from the Kayamkulam Kayal in south to Cochin in the north, where it meets the sea. KWS is placed in the southern part of the VWS. It is a floodplain of 4 rivers, Pampa, Achenkovil, Manimala, and Meenachil. The Achenkovil-Pampa-Manimala River system feeds south and south-western parts of Kuttanad and the Meenachil feeds the eastern parts of Kuttanad. The Muvattupuzha River and the smaller Kariyar River feeds the Vaikkom area, which are in the north-eastern parts of KWS. These rivers confluence into the Vembanad Kayal or backwaters through a maze of water ways and canals, and flow in a south to north direction, and then travel further north towards Cochin gut or thuramukhom, to empty into the Arabian sea. The floodplain and the Vembanad Lake together make this the largest wetland ecosystem in the Indian west coast. This has been declared as a Ramsar site in November 2002¹².

The boundary of Kuttanad region is loosely defined and the extent of its area has been variously computed at different times, today it encompasses 79 revenue villages, 10 Taluks and 3 Districts. Cherthala, Ambalapuzha, Chengannur, Kuttanad, Karthikappally and Mavelikara Taluks in Alappuzha Districts, Thiruvalla taluk in Pathanamthitta District and Changanassery, Vaikom and Kottayam taluks in Kottayam districts covering an area of 870 Sq. km¹³.

The rivers and the topography divide Kuttanad into three major ecological zones - highlands, lowlands and backwaters. Sandy beach ridges close to the sea have an elevation of 1.5 to 5 m above MSL. Upper Kuttanad has elevations of -0.5 m to +6.0 m MSL and elevations in lower Kuttanad areas range from -1.5 m to +1.0 m MSL. The backwaters or the Kayal lands are at elevations -1.0 m to -2.2 m MSL.

The average rainfall in Kuttanad is about 3,000 mm. Although distributed throughout the year, 60% rain is received during southwest monsoon (May-August) and 30% during northeast

12. Measures to Mitigate Agrarian Distress in Alappuzha and Kuttanad Wetland Ecosystem - A Study Report by M. S. Swaminathan Research Foundation, Chennai, 2007, available on- <http://kuttanadpackage.in/images/stories/docs/MSSRF-Report.pdf>

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monsoon (October-November). During the months of June to November, the inflow into Kuttanad exceeds the inflow into the Vembanad Lake. During the months of December to almost mid-May, which coincide with summer, the reverse happens. There is a net decrease in the total inflow of the rivers into Kuttanad. This brings down the water level in the Vembanad Lake, which creates a reverse flow from the sea to the inland water body bringing the salinity all over the Lake and low lying downstream parts of rivers¹⁴.

The issue with the location map in Kerala

There are several complex and inter-related issues that are being raised in Kuttanad region due the mismanagement and haphazard development and construction activity that has taken place over the years. This has lead to serious concerns on ecology, agriculture, livelihoods and social fronts. The prominent issues in Kuttanad region at present include -



- a) Agricultural distress that the farmers of the region are facing
- b) Changing land use pattern and declining rice cultivation area
- c) Increasing human pressure on natural resources
- d) Decreasing flood plain area of the Kuttanad wetlands system
- e) Recurring flooding in the region
- f) Connectivity to the sea blocked and salinity intrusion mismanagement - issues related to operation of Thaneermukkam Bund
- g) Stagnating water in the lake and blocking of water ways
- h) Increasing pollution in the backwaters
- i) Problems of invasive weeds species
- j) Concerns of loss of bio-diversity in the lake
- k) Serious impact on fisheries and based livelihood
- l) Increasing problems with navigation and transportation
- m) Impacts on drinking water, sanitation, health and hygiene

The conflict - description of the conflict and its evolution

In the Kuttanad region the major resource for livelihood is the Vembanad lake be it in the form of reclaimed lands for paddy cultivation, fishing, tourism, etc. However, several human interventions combined with poor management has led to manifold conflicts in the region. The

14. Measures to Mitigate Agrarian Distress in Alappuzha and Kuttanad Wetland Ecosystem - A Study Report by M. S. Swaminathan Research Foundation, Chennai, 2007, available on- <http://kuttanadpackage.in/images/stories/docs/MSSRF-Report.pdf>

first step for the development of Kuttanad was the construction of Thottappally spillway in 1951. This aimed to flush away extra floodwater from the Pampa, Manimala and Achenkoil rivers into the sea before it could flood Kuttanad. However, due to poor implementation and poor maintenance, salt water intrusion through the spillway has become a permanent concern for the farmers of the region. The second was the construction of regulator at Thaneermukkam to prevent salt water intrusion from the sea during the lean season in 1955. The original plan was to construct the regulator at Thaneermukkam where the Vembanad lake is at its narrowest width under great pressure from the farmers lobby for stopping the salt water intrusion into the paddy lands during the lean season and high tides. However, again due to poor planning and implementation, the iron shutters on eastern and western portions were completed, but the middle portion remained incomplete.

In 1975, the farmers of Kuttanad started an agitation demanding the completion of the bund. Thousands of farmers worked for a couple of weeks free of cost and completed a permanent earthen bund in the middle of the lake joining eastern and western portions. The fisher folk of the area had always been opposed to the bund since they wanted salt water and fishes to enter for breeding and for better catch. They have been in direct regular conflicts with the farmers on the issue of regulating the operations of the iron shutters of the bund. The generally agreed period for the closing and opening of the bund is 15th December and 15th of March. However at times the bund is closed for longer periods due to pressure from the farmers lobby. On the other hand the fishermen have been protesting and demonstrating against this and also demanding that the bund be kept open throughout the whole year. Some of the farmer groups also now supporting this demand after seeing the poor effects of the bund on the agriculture and the larger wetlands system.

The map below shows the Vembanad lake and the Kuttanad region.



The third part was the construction of 24 km long Alappuzha to Changanassery road in 1957. This road passes through the middle of Kuttanad. Later on, several roads and bunds were constructed across the low-lying floodplains. This has led to blockages in the water flow and

subsequently flooding in the region. Over a period of time several other factors have also lead to increasing conflicts like tourism promotion, modern agricultural practices, fresh water needs of the local population and dumping of municipal waste into Vembanad and the rivers flowing into it.

The interventions also had a poor impact on the overall ecology of the region, the agriculture productivity, fishing, fresh water requirements, public health and hygiene, etc.

The different stances of stake-holders, local self-government, industry

The varied stake-holder groups in Kuttanad region include - the gram panchayats, the farmers organisations, the fishing communities, the local community and non-government organisations working in the region and then there is the state government and its agencies like the irrigation department, public works department, government supported agriculture research stations.

Some among the gram panchayat leaders in the region feel that the main issue in Kuttanad is the environmental pollution caused to the wetlands by agricultural practices, industries, tourism and municipal waste. They say that the gram panchayats are trying to contain these problems but there is a lack of a co-ordinated effort with other gram panchayats and also the issue of industrial pollution is out of the purview of gram panchayats, it is handled by the pollution control board. The gram panchayats are aware of the complex and inter-connected issues, but one single agency cannot do much about the issue because of the huge scale of the issue and its ramifications.

The farmer organisations in the region are seriously concerned about the problems that agriculture is facing in Kuttanad. Presently, they are more aware that the issues concerning the agricultural sector are a part of the larger problems caused to the wetlands system by the modern agricultural practices and human interventions in the name of development. There is also an understanding that this has destroyed the ecological balance, thereby hitting badly the farmers and agricultural productivity. The major issue that the farmers want to be resolved soon is related to the Thaneermukkam bund - operation and re-construction of it. They also want the crop calendar to be shifted to the original state. The farmers in the region also hold more influence on the issues compared to the fishing communities due to large land holdings and resources.

The fishing community in the region mainly consists of poor and marginal fishermen who have been largely on the receiving end of developmental interventions made in the Vembanad - Kuttanad region. The farmers and fishermen of the region are constantly in conflicts regarding the closing and opening of the shutters of Thaneermukkam bund. The fishing community wants the shutters of the bund to be open for longer periods so that along with saline water more fishes can come in for breeding. However, it seems that the farmers receive more support from the government on this issue. The fishing community also feels that there is a need to shift the focus primarily from agriculture to issues related to fishing as well. At the moment there is a sentiment that the balance is tilted in favour of the agricultural community.

The non-government organisations working in the area feel that there is a need to take a holistic view to solve the problems faced by the communities living in Kuttanad region. They also feel that the need is to begin with addressing the issues related to environment which would enable in handling the issues affecting the other sectors too. They feel that the need is also to refocus on fishing along with agriculture. But the need to safe-guard the ecology of the region should be paramount.

The government on the other hand has shown the intent to deal with the issues in Kuttanad through the study done by MS Swaminathan Foundation on Kuttanad and the agrarian distress that the farmers are undergoing here. This study has resulted into action from the government in the form of a package for the region called 'Kuttanad Package'. However, local sources state that the implementation of the recommendations under the package on the ground have begun on the wrong note. The government departments like irrigation department is focusing more on the construction activities in the region for flood mitigation of bunds that are built around the kayal lands. This construction activity has become the prime focus of the department rather than other measures like environment protection, pollution control, restoring the fresh and saline water balance in the wetlands, etc.

Highs and Lows of the Conflict - Chronology of events

S. N.	Year	Event - What Happened?
1.	1880s	Late 19th century, first phase of land reclamation in Kuttanad region.
2.	1888-1903	Second phase of land reclamation in Kuttanad
3.	1912-1943	Third phase of land reclamation, nearly 5000 ha were reclaimed during this phase and the most renowned were 'Rani', 'Chithira', and 'Marthandam' blocks
4.	1940	Rice Research Station at Moncompu was also started to develop ideal varieties to assist farmers.
5.	1942	An agricultural workers union was formed in Kuttanad with the initiative of the Communist Party. The labour unionism helped to improve the service conditions of the organized labour of Kuttanad.
6.	1951	Construction of Thottapally Spillway was constructed and commissioned in 1965 to drain flood water from the Kuttanad Wetlands to Arabian sea.
7.	1955	Construction of the Thaneermukkam regulator across the Vembanad lake was started and commissioned in 1975 to check the intrusion of saline water.
8.	1957	Construction of 24 km long link road between Alappuzha and Changanassery was completed in 1957 for easy communication and transport.
9.	1960s	The whole area was converted to high yielding dwarf varieties.
10.	1966	It was at this juncture additional cropping season. The duration of the additional crop is from May/June to September/October. This transformed to an organized structure of paddy cultivation over an area of 4000 ha which increased to the present status of 10,000 ha.
11.	1970	Major landmark in Kuttanad agricultural scenario was the Lands Reforms Act. In the past paddy cultivation in Kuttanad was done under a 3 tier system as Land Lord-Tenant-Labour. This system disappeared with the enforcement of the Act and many of the tenants became owners of the land.
12.	1972	Government of Kerala launched the 1st Kuttanad Development Project to improve infrastructure for paddy cultivation in Kuttanad. The Kerala Land Development Corporation Ltd. was formed to implement it.
13.	1978	The first variety from this Station was introduced as "Bhadra" which was suggested as an alternate to the existing varieties cultivated at that time
14.	1989	Govt. of Kerala entrusted Netherlands Govt. with the task of studying the Kuttanad wetland system & suggesting suitable measures for efficient water management considering the expertise of Netherlands in cultivation of crops under similar conditions. The Netherlands Agricultural Identification Mission submitted its report in four volumes under the title Kuttanad Water Balance Study.
15.	1991	'Group Farming' introduced, brought a boost to paddy cultivation in Kuttanad.

16.	1991	Outbreak of epizootic ulcerative syndrome which exhausted the fisheries in Vembanad to a large extent.
17.	1996-97	The outbreak of Japanese Encephalitis in Kerala had its origins in Kuttanad. At least 25 people died because of the disease in Kuttanad alone.
18.	2007	Govt. of India entrusted M.S.Swaminathan Research Foundation, Chennai to study the problems faced in Kuttanad and suggest remedial measures. MSSRF submitted its study report to Govt. of India identifying 15 tasks covering about 50 different activities to mitigate agrarian distress in Kuttanad Wetland System.
19.	2008	Govt. of India approved the study report and the interventions recommended by MSSRF as a package.
20.	2008	Govt. of Kerala initiated the implementation of package with the formation of the Task Implementation Committee.
21.	2010	Kuttanad Package was formally launched by Chief Minister of Kerala in a function at Moncompu.

The present status of conflicts and recent developments

Kuttanad region has already been witness to conflicts among the farmers and the fishermen regarding the use of the resources in the wetlands and their respective interests. This was further aggravated by issues of industrial pollution and waste generated by tourism and domestic waste disposal. However, currently the debate has become deeply intense because of the newly announced measure of the state government to revive the wetlands system - the Kuttanad Package - based on a study by MS Swaminathan Foundation.

A meeting of Kuttanad Co-ordination Committee on Kuttanad Package and its implementation in Alappuzha district, below.



The Swaminathan report recommends several measures for reviving the region - restoration of natural drainage system, minimising the damage caused to the ecosystem by Thanneermukkam barrage, restoration of the Thottapally spillway system, pollution control in

Kuttanad waters, improving the productivity and profitability of rice farming system, revitalization of fisheries, labour security - integrated manual and mechanized operations, group cooperation in certain farm operations with the support of agri-clinics and agri-business centers, enhancing income from coconut farming system and promoting environmentally sustainable water tourism.

It seems that with the announcement of the Kuttanad Package the positions have become more polarised and entrenched. The farmers feel that the package has been designed primarily keeping their crisis in mind and they have a lot at stake in this process. But they also feel that the implementation of the recommendations under the package have started on the wrong foot. The feeling among the farming community is that despite several recommendations made under the package construction component has become the primary focus of the implementing authorities. One thing is certain that in this region the Kuttanad Package has managed to ignite a serious debate on the issues related to and raised in the Swaminathan Foundation study.

Key institutions and people involved

- Gram Panchayats in Kuttanad
- Farmer Organisations like Kuttanad Co-ordination Committee, Upper Kuttanad Farmer's Collective, Kuttanad Development Committee, Kerala State People's Resistance Committee, Kuttanad Agriculture Redevelopment Committee, etc.
- Local Population
- Non-Government Organisations working in the region - MS Swaminathan Research Foundation (MSSRF), Ashoka Trust for Research in Ecology and Environment (ATREE), Kerala Sastra Sahitya Parishad (KSSP), Vembanad Nature Club, Kumarakom Nature Club, Kottayam Nature Club, Kuttanad Foundation, SAHAI, Save Kuttanad Forum, etc.
- Government of Kerala (GoK)
- State Government Agencies like the Irrigation Department, Public Works Department, Regional Agriculture Research Station (RARS), Kottayam.

Analysis of the socio-political and ecological geography of the conflict

The environmental impacts and modern day interventions in the region have brought about a lot of changes in the social practices in the region. The modern interventions in agriculture and fishing have taken these communities in a direction wherein these activities have become unsustainable and loss making. The poor design, construction and operation of Thaneermukkam bund, shifting cropping calendar, use of excessive chemical fertilizers and pesticides have lead to various problems in agriculture and fishing. The problems faced on the livelihoods front has had a serious impact on the social aspects of the communities in this area. The fishing community has been severely affected due to pollution and poor cultivation practices.

Many of the traditional practices have completely been disrupted due to the modern interventions. Presently, in quite a few instances the earlier followed traditions are not being followed by the communities. For instance, earlier during certain months of the year fishing was socially prohibited - this coincided with the fish breeding season in the water body. However, now people suggest that this is not being followed by the fishermen leading to further destruction of fish breeding grounds and breeding as such. These activities have further lead to distress to the livelihoods of the local people.

However, now there is also a social consciousness among the farmers and the fishermen regarding the issues affecting each other. Farmers who earlier opposed the fishermen wishing to

keep Thaneermukkam bund closed as long as possible now understand and appreciate the issues faced by the fishermen due to this.

The important social welfare services to the communities here have been facing neglect since long. The condition of water supply and sanitation in the region is very poor. The water resources are contaminated, hence water has to be supplied from far off places that too is not regular and local communities living in the wetlands face problems in accessing water supplies. Earlier rain water harvesting measures were focused to alleviate the drinking water problems but these were not implemented properly and hence the results from this scheme were not very encouraging. Now there is a plan to provide communities water using reverse osmosis plants in several villages. Similarly, sanitation is also an issue with all the human waste going directly into the water bodies. For years proposals to promote eco-sanitation has been there but not been implemented seriously.

At the root of controversy, the Thaneermukkam bund and causeway on the Vembanad lake, below.



Politically, local people say that the dynamics have not changed much, even though the situations and demands have changed quite a lot. The political support is still in favour of the agricultural sector mainly because the farmers are land owners and economically better than the poor, small scale and lower caste fishermen. It also seems that the political class has a tendency to tilt towards those activities which have the huge monetary components, leaving behind other suggestions and policies. However, to resolve the situation in the interest of the larger community and the environment this approach needs to be changed.

There is also a huge gap on the political decision making front. Policies are there but there is a clear lack of implementation. Like, there are policies to promote organic farming and there is also a bio-diversity board for the State but nothing much has happened on the ground. In one of the meetings organised by Kuttanad Farmers Co-ordination Committee, there was not a single political representative present in the meeting to discuss about the issues related to Kuttanad

Package. One of the local speakers observed that of all the people attending the meeting not one person from political parties is present. He said that if they would have been representing the people and had the concern about the people, they would have been here. Some people claimed that the local politicians in these areas are involved in illegal land reclaiming activities, hence they want the status quo to be maintained.

Political leaders from the gram panchayat stated that regarding the issues related to Kuttanad, enough political awareness is there. However local level leaders do not know how to handle the issues because - the issues expand to larger areas compared to what gram panchayats handle, there is lack of co-ordination among gram panchayats and political differences make it impossible for a properly co-ordinated effort.

A section of Alappuzha-Changanassery Road, this road is thought to be the main reason for blocking natural drainage and flooding in Kuttanad region, below.



On the environmental front, there seems to be a consensus among the various groups of people that the ecological damage due to interventions like construction of the Thaneermukkam bund and its poor operation, land reclamation for roads and real estate construction, wrong agricultural and fishing practices, agricultural pollution, industrial pollution and dumping of domestic and tourism waste has been the genesis of the problems faced by the other sectors.

Local experts state that the condition of the lake is very critical in ecological terms. The fish species and catch has been declining. Studies have found harmful chemicals in fish catch and other lake forms which show the alarming situation.

Importantly, local people feel that the re-opening of the Thaneermukkam bund to begin with can resolve quite a few of these issues. This would enable the lake water to be drained and washed in monsoons and salinity intrusion in lean months. This process would help in washing away of pollutants, bacteria and generation of invasive weeds in water bodies. The salinity intrusion would also help in improving fish breeding and fish catch.

Local farmer leaders also state that when Dr MS Swaminthan visited Kuttanad, he showed much concern about the environmental damage and he wished that the agriculture should not be destructive to the environment. But this is not how the Kuttanad Package is being implemented. It has become more of a construction exercise rather than a holistic resolution of the environmental problems faced. However, it seems that the vested interests in the political leadership and the government departments wish to focus on this and not on the ecological issues.



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People's Struggle against Coca Cola in Plachimada

Pollution and Over-exploitation of ground water in Plachimada by Coca Cola

Description of the study area

Plachimada is located in a rain shadow region in Chittur taluk of the Palakkad district of Kerala. It is part of the Moolathara village, which is one among the three villages of Perumatty gram panchayat. The other two adjacent villages are Perumatty and Vandithavalam. Perumatty gram panchayat comes under Chittur block panchayat.

Palakkad district is an important agricultural region of Kerala and is also known as the 'the granary of Kerala' because of its fertile land and agricultural profile. Located in the centre of Kerala bordering neighbouring state of Tamil Nadu it holds the eastern natural opening in the mountain range, the 30 km Palakkad Gap through which the road and rail links between Kerala and Tamil Nadu passes. This area requires water in large quantities for irrigation and depends immensely on canal and groundwater. The Hindustan Coca Cola Beverages Pvt. Ltd. set up a bottling plant in Palakkad in the year 2000 occupying an area of around 34 acres. This land is irrigated land, since it is surrounded by water reservoirs and canals for irrigation.

Plachimada village of Perumatty panchayat is home to several scheduled caste and scheduled tribe populations. The villagers are predominantly landless, illiterate, agricultural labourers, mostly depending upon agriculture for their livelihood. The Coca Cola plant site is located around 3 kms to the north of Meenkkara Dam reservoir and a few hundred meters east of Kambalathara and Venkalakkayam water reservoirs. Moolathara main canal of Moolathara barrage is very close on the north-side of the plant and the Chittur river also flows quite close to the Coca Cola plant.

The issue with the location map in Kerala

In Plachimada, the conflict began with focus on basic issues like depleting ground water table, decreasing water access, solid waste disposal and pollution. However, as the conflict escalated further several other issues were thrown up in this matter. The issues involved in Plachimada water conflict can be summed as follows -

- a) Depleting ground water table due to over-exploitation by Coca-Cola
- b) Decreasing water access to the local population for domestic as well as irrigation needs
- c) Contamination of groundwater resources of the community
- d) Hazardous solid waste disposal and distribution in the form of organic manure by Coca-Cola
- e) Toxic contamination caused by organic manure produced using solid waste

- f) Severe health impacts of polluted water on the local people
- g) Depleting groundwater levels lead to decrease in agricultural production and subsequent loss to the local economy and the livelihood of the local people.
- h) Issue of the possibility of legal resolution of such cases also became an important discussion point
- i) Issues regarding the decentralisation principle, powers of the village panchayat, right to protect and provide clean water and livelihood also became serious conflicting points

The conflict - description of the conflict and its evolution

Perumatty gram panchayat granted Hindustan Coca Cola Beverages Pvt. Ltd. (HCCBPL) license in 1999 to establish a bottling plant in Plachimada, the operations began in the year 2000. The company established the plant in the region with several promises to the local people like jobs and employment, income and prosperity.

Within a year or so local people started noticing changes in water quality, colour, taste, odour, etc. The water levels started dropping rapidly, some open wells even turned dry. Drinking this water also created health problems for the people. People started complaining about diarrhea, dizziness, skin rashes, burning sensation on the skin, left their hair greasy and sticky. The local women discovered that food did not get cooked. Around a 1000 families had been directly affected, and well water contamination extended up to 3 - 4 kilometers from the plant.

Some time in 2002 residents of Plachimada launched an agitation against Coca-Cola, holding it responsible for the depleting groundwater tables, and degraded water quality in the village. Thereafter in 2003 taking note of these water quality and quantity problems the Perumatty gram panchayat passed a resolution and refused to renew the license of Coca-Cola to operate in Plachimada. The company filed an objection petition in Kerala High Court.

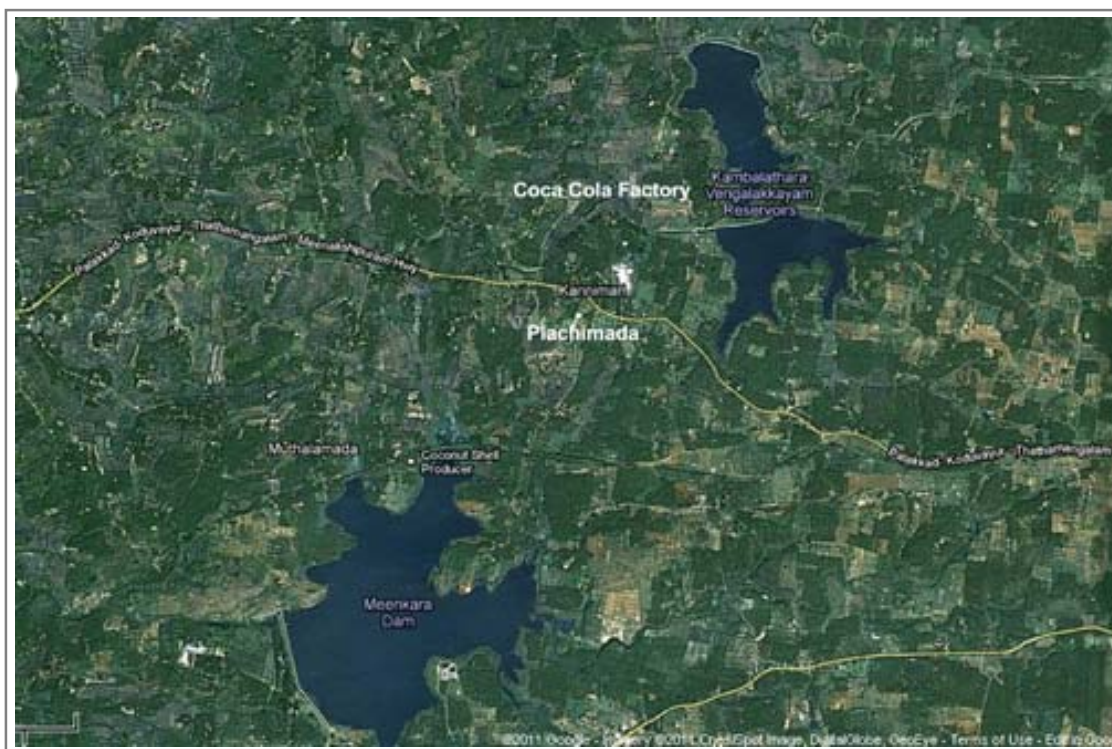
Meanwhile, tests and investigative reports from several agencies showed that the problems with the ground water and soil contamination were serious which the people of Plachimada already knew. Among the first ones to report on this was John Waite, British Broad Casting Corporation news reporter on 25th July 2003¹⁵. Subsequently study reports and field investigations were carried on by organisations like Hazards Center, New Delhi, People's Science Institute, Dehradun, Vikas Adhyayan Kendra, Mumbai, Jananeethi, Thrissur and others. On the one hand the legal proceedings were going on and on the other local community was actively



15. Coca-Cola's 'toxic' India fertiliser, BBC News, Face The Facts, John Waite, 25th July 2003, available on - http://news.bbc.co.uk/2/hi/south_asia/3096893.stm

mobilising support and resources for the struggle against Coca Cola from across the world. Several social justice and human rights organisations joined the people of Plachimada in their struggle against the company.

The initial Kerala High Court judgment in 2003 went in favour of the panchayat holding groundwater as public good and asserting that the state has the obligation to protect the supplies of water for the use of the local people. The Government of Kerala ordered to stop the production based on the HC order. However, on HCCBPL appeal the division bench of HC allowed them to draw 500,000 litres of water a day and ordered the Perumatty Panchayat to renew the license. HCCBPL approached the Kerala High Court again, as Panchayat refused to renew license again. The HC give the panchayat 7 days to do so, stating that otherwise the license will be considered de jure to have been renewed for a further two years. The Panchayat renewed the license for 3 months.



The location map of Plachimada village, HCCBPL factory and the close by water bodies, above.

Kerala Pollution Control Board (KPCB) ordered closure of the plant due to pollution by waste in 2005. The panchayat cancelled the license based on KPCB report on pollution. HCCBPL once again approached the Kerala High Court to force the panchayat to renew the license. The court ordered the panchayat to renew license. Panchayat renewed the license, imposing 13 conditions, the most notable of which is that the bottling plant cannot use the local groundwater. However, the plant remained closed, mainly due to two reasons - one, the licenses were given by the panchayat for short time periods with conditions on drawing ground water and secondly the mobilisation and support to the local community on the issue was immense. This popular support also forced the hand of the state government to favour the panchayat and order the closure of the bottling plant.

The different stances of stake-holders, local self-government, industry, etc

The varied set of stake-holders involved in the Plachimada issue include - the local community, Perumatty gram panchayat, Government of Kerala, the Kerala High Court, Kerala State

Pollution Control Board, Hindustan Coca-Cola Beverages Private Limited (HCCBPL) and several local, national and international social justice and human rights organisations.

The local community of the Plachimada village were the first ones to notice the depletion and degradation in water quality of their village. It was they who began the agitations against HCCBPL for polluting the water of the village. Due to their firm position against the actions of the company this event was noticed by the gram panchayat which cancelled the license of HCCBPL to operate in Plachimada. Despite several adversities the local population stuck to the cause and were the main reason for the larger national and international mobilisation against Coca-Cola's poor environmental practices. The people of Plachimada still hope that they would get justice and the company would be forced to pay compensation for the damages caused.

The Perumatty gram panchayat, took cognizance of the concerns of the people of Plachimada and pro-actively refused to renew the license to HCCBPL. The panchayat was able to comprehend the seriousness of the issue and the long-term impacts Coca-Cola's operations on the local people and livelihoods. It was on the basis of this understanding they refused to renew the license to operate the bottling plant. Even after directions from the Kerala High Court, they did so reluctantly and ensured that the pumping of ground water would not happen, by imposing several conditions on Coca-Cola, including not pumping ground water for beverage production. Reports suggest that the officials of the panchayat did not bend to Coca-Cola's political and money power. For the Perumatty Panchayat the struggle is still on - with the Special Leave Petition in this regard pending in the Supreme Court for hearing.

People sitting in protest against the anti- environmental actions of Coca-Cola, below.



The Government of Kerala, it seems was initially very much in favour of Coca-Cola to continue operations in Plachimada, even in face of the local resistance and agitation. However, in the later stages with large scale mobilisation and campaigning on the issue they turned around and openly supported the struggle against Coca-Cola. All through it seems that within the government there are various factions which have tried to delay and ignore the struggle. But it has not been possible and fortunately, for once the government has taken unprecedented steps of

taking into consideration people's complaints and wishes in the matters of industrial pollution. The state government on the recommendations of the high powered committee has passed a legislation in the state assembly forming a tribunal to address the compensation issues in Plachimada. The bill titled - 'Plachimada Coca-Cola Victims' Relief and Compensation Claims Special Tribunal 2011' was passed in the legislature in February 2011.

The Kerala High Court took different stances on the petitions filed in the Plachimada case. On the petition filed by HCCBPL in the High Court against the Perumatty panchayat's refusal to renew the license - the single bench of the Kerala High Court ruled in favour of the panchayat. The High Court gave the reasoning that water is a public good, and therefore the state has the obligation to protect the supplies of water for the use by the local people. It also approved the powers of the Panchayat under the decentralisation principle. However, when the same matter was appealed in front of the division bench of the High Court the order was effectively reversed and was opposite to what the single bench has stated. The division bench gave more preference to property rights of private companies by placing the right to clean drinking water and the right to livelihood of the public in peril. Moreover, the object of the decentralisation principle has been completely neglected by the division bench. The division bench order also put a cap on the quantity of the water that can be drawn by the company. This order has been contested by both the parties and the matter now rests in the Supreme Court.

Children participating in a protest in front of the HCCBPL gate in Plachimada, below..



State Government agencies like Kerala State Pollution Control Board (KSPCB), Kerala Ground Water Department (KGWD) and Primary Health Center, Perumatty undertook investigations and filed their reports. The initial KGWD reports on water quality in Plachimada stated that there was no alarming change in water quality. Likewise, the Central Ground Water Board (CGWB) report also made similar observations. KGWD report said that the reason for decline in groundwater level could be the 'over drafting' of water by HCCBPL, it concluded that the major reason for depletion was low rainfall in the area. The expert committee appointed by the Kerala High Court also shared this opinion. On solid waste generated in the factory a KSPCB report said that concentration of cadmium and other metals were found to be below the limit

prescribed. However, the report also mentioned that the level of cadmium in the common panchayat well is double the permissible limit and touches the permissible upper limit in another well. A later study conducted by the Central Pollution Control Board (CPCB) revealed that the sludge from Effluent Treatment Plant (ETP) and the sludge supplied by HCCBPL to farmers for use as fertiliser contains heavy metals like lead and cadmium in more than permissible limits. On the basis of the CPCB report the KPCB directed HCCBPL to close the factory until it complies with the provisions of the Hazardous Waste (Management and Handling Rules), 1989 as amended in 2003.

Hindustan Coca-Cola Beverages Private Limited (HCCBPL) has maintained a stand throughout this campaign that they are not responsible for either depleting ground water levels or the pollution in Plachimada. The company states that they plan to be net zero user of ground water in India. The net zero user concept theoretically means whatever amount of water the company pumps out for its industrial consumption would be equivalent to the recharged amount of ground water using various rain water harvesting and recharging techniques. How this can be implemented and corroborated in the same region, remains a question? The company also stated in the share holders meeting that the plant in Plachimada has not been shut down and they can open it anytime whenever they want. They said in one of the press releases that they are working with appropriate authorities to resolve the Plachimada issue.

Several local, national and international social justice and human rights organisations have also played their part in the whole campaign in mobilising and spreading awareness about the issue nationally and internationally. Some of these organisations helped in mobilising support for the struggle, some were involved in research and documentation and some organisations also undertook water and soil sample tests in villages to generate scientific data about the actual changes in the natural environment, some other organisations did health surveys gathering data about the health impacts on the local population of the industry. Largely, many social organisations had come together to support the anti-Coca Cola struggle in Plachimada and took strong position against the reckless activities of the company.

Highs and Lows of the Conflict - Chronology of events

S. N.	Year	Event - What Happened?
1.	Oct. 1999	Hindustan Coca-Cola Beverages Private Limited (HCCBPL) applies to Perumatty panchayat for setting up a bottling plant at Plachimada.
2.	Jan. 2000	Panchayat gives permission to Coca Cola for setting up the plant and installing 2,600-horsepower electric motor to run the unit.
3.	Early 2002	Villagers around the plant notice changes in water quality.
4.	April 2002	Residents of the area launch an agitation against Coke.
5.	April 2003	Perumatty panchayat decides to cancel HCCBPL's license.
6.	April 2003	Panchayat issues notice to HCCBPL.
7.	April 2003	Objection petition filed by Coca Cola in Kerala High Court (HC).
8.	April 2003	Panchayat refuses to renew HCCBPL license to operate, HCCBPL allegedly attempted to bribe the Panchayat President 300 million rupees to reverse this decision.
9.	May 2003	Government of Kerala over-rules the decision of the Panchayat not to renew HCCBPL license.
10.	July 2003	British Broadcasting Corporation(BBC) reported the presence of heavy metals, lead and cadmium, in quantities higher than the approved limit in the sludge supplied by the Company, which was at the time claiming the sludge was a fertiliser. The BBC

		report has also alleged that the Company had clandestinely dumped the sludge in the nearby river-bed.
11.	Dec. 2003	Kerala High Court rules in favour of the Panchayat, with the reasoning that water is a public good, and that therefore the state has the obligation to protect the supplies of water for the use of the local people.
12.	Mar. 2004	Factory shut down on the orders of the Kerala State government.
13.	April 2005	Appeal by HCCBPL results in Kerala High Court allowing them to draw 500,000 litres of water a day, the Perumatty Panchayat is ordered to renew the license.
14.	May 2005	Panchayat files Special Leave Petition in the Supreme Court.
15.	June 2005	HCCBPL approaches Kerala High Court again, as Panchayat has refused to renew license; they are given 7 days to do so, otherwise the license will be considered de jure to have been renewed for a further two years. The Panchayat renew the license for 3 months.
16.	Aug. 2005	Kerala Pollution Control Board (KPCB) orders closure of the plant due to pollution of waste.
17.	Sep. 2005	Government of Kerala lends its support to the local community against HCCBPL.
18.	Nov. 2005	HCCBPL once again approaches the Kerala High Court to force the Panchayat to renew the license. The court orders Panchayat to renew license.
19.	Jan. 2006	Panchayat renews license, imposing 13 conditions, the most notable of which is that the bottling plant does not use the local groundwater.
20.	May 2006.	Kerala State Ground Water Department releases the study report on Plachimada titled as "Report on the monitoring of water levels and water quality in wells in and around the HCCBPL Factory at Plachimada Palakkad".
21.	Aug. 2006	Govt. of Kerala withdraws the criminal cases against the Plachimada struggling people.
22.	Sept 2006	Plachimada Struggle Committee (PSC) and Plachimada Struggle Solidarity Committee (PSSC) submits people's proposal titled as 'Towards a people's water policy' to the workshop on Kerala State Water Policy organized by Dept of Ground water at Thiruvananthapuram
23.	Jan. 2007	Environmental Committee of Kerala Legislative Assembly visits Plachimada. PSC and PSSC submit memorandum to the members.
24.	Feb. 2007	Kerala Legislative Assembly subject committee members visit Plachimada PSC and PSSC submits memorandum
25.	Mar. 2007	PSC and PSSC submits memorandum to Kerala State Ground Water Authority (KGWA) requesting for action against criminal offense of HCCBPL at Plachimada.
26.	Apr. 2007	'People's March for People's Water Rights' ends at Thiruvananthapuram submitting a memorandum to the Chief Minister.
27.	Aug. 2007	Chief Minister Achuthanandan conducts discussion with PSC and PSSC Government office bears recognising the demands of the PSC.
28.	Aug. 2007	KGWA appoint a committee to report on issues related to Plachimada.
29.	Sep. 2007	The committee on Plachimada appointed by KGWA visits Plachimada. PSC, PSSC, Farmers, Local residents etc. submit memoranda to the committee members.
30.	Oct. 2007	KGWA approves the report submitted by the committee on Plachimada and decides to recommend to state government for further action on the issues of compensation of damages occurred at Plachimada.
31.	Aug. 2008	PSC and PSSC submits memorandum to KGWA to reconsider the issue of Plachimada.
32.	Aug. 2008	KGWA appoints sub committee for a detailed examination of the Plachimada issue.

33.	Sep. 2008	The sub committee appointed by KGWA submits report recommending KGWA to form a high power committee to consider various dimensions of the Plachimada issue.
34.	Oct. 2008	KGWA decides to recommend to the Govt. of Kerala for forming a High Power Committee on Plachimada to assess the damages occurred.
35.	Feb. 2009	2500th day of Plachimada struggle. PSC & PSSC conducts a march towards Chief Minister's residence at Thiruvananthapuram for speeding up the formation of high power committee on Plachimada.
36.	Feb. 2009	In a reply to submission by Kutty Ahamedkutty at Kerala Legislative Assembly Chief Minister ensures that the high power committee on Plachimada will be formed soon.
37.	Apr. 2009	Cabinet Meeting of Kerala Govt. decides to appoint high power committee on Plachimada.
38.	Mar. 2010	High Power Committee on Plachimada releases its report holding Coca-Cola responsible for causing pollution and water depletion in Plachimada.
39.	Feb. 2011	Kerala State Legislative Assembly passes legislation titled 'Plachimada Coca-Cola Victims' Relief and Compensation Claims Special Tribunal Bill, 2011' setting up a tribunal that has the powers to adjudicate on matters related to claims of compensation as a result of Coca-Cola's operations in Plachimada.

The present status of conflicts and recent developments

Plachimada village presently does not see too much of an activity these days compared to what it was in the early years of the struggle. Even though there are events being organised regularly in the village on this and other water and human rights related issues. There is hope that the news about new developments comes in the form positive and supportive actions from the government or the courts. In February 2011, the state government in Kerala introduced the bill titled 'Plachimada Coca-Cola Victim's Relief and Compensation Claims Special Tribunal Bill, 2011' to penalise Coca-Cola and to compensate the local people affected due to its operations. The bill is part of the High Powered Committee recommendation to set up a tribunal to realise Rs 216 crore compensation from the company. The state cabinet has approved the draft bill, seeking to form a tribunal for securing compensation and relief for 'environmental degradation' caused by the company in Plachimada.

Recently, the Government of Kerala has sent the draft bill to the President of India for approval. The local sources stated that the bill has been sent to the Central Home Ministry by the President for comments and the home ministry has sent it back to the state government for legal clarifications.

Coca-Cola, however, states that this bill is in contradiction with the Central Green Tribunal Act. It contests that the Green Tribunal Bill should overrule the state act. The company's bottling plant in Plachimada remains shut due to people's struggle and agitations. Legally, HCCBPL can open the plant any time, since the license by the panchayat has been renewed, but this is based on certain conditions and for 3 months only.

Earlier, in 2007, Kerala Ground Water Authority (KGWA) appointed a committee to report on issues related to Plachimada. The committee on Plachimada appointed by KGWA visited Plachimada and met representatives from PSC, PSSC, local farmers and residents. The report submitted by the committee on Plachimada was approved by KGWA and it decided to recommend to the state government, further action on the issues of compensation of environmental damages occurred at Plachimada. However, nothing much happened during the next one year.

In 2008, again PSC and PSSC submitted memorandum to KGWA to reconsider the Plachimada issue. In August 2008, KGWA appointed a sub-committee for a detailed examination of the Plachimada issue. The sub committee appointed by KGWA submitted a report recommending KGWA to form a high power committee to consider various dimensions of the Plachimada issue. The KGWA decided to recommend to the state government for forming a High Power Committee on Plachimada to assess the damages occurred. In 2009, in a reply to submission by Mr. Kutty Ahmedkutty at Kerala Legislative Assembly, Chief Minister ensured that the high power committee on Plachimada will be formed soon.

A contaminated groundwater in a dug-well in Plachimada, below.



The Cabinet Meeting of the state government decides to appoint high power committee on Plachimada in April 2009. The high power committee on Plachimada released its report in March 2010, holding Coca-Cola responsible for causing pollution and water depletion in Plachimada. The Kerala State Legislative Assembly passed a legislation titled 'Plachimada Coca-Cola Victim's Relief and Compensation Claims Special Tribunal Bill, 2011' setting up a tribunal that has the powers to adjudicate on matters related to claims of compensation as a result of Coca-Cola's operations in Plachimada.

Key institutions and people involved

- Local community of Plachimada and Perumatty panchayat, Plachimada Struggle Committee (PSC) and Plachimada Struggle Solidarity Committee (PSSC)
- Gram Panchayat - Perumatty,
- Government of Kerala,
- The Kerala High Court,
- Central Pollution Control Board, Kerala State Pollution Control Board, Kerala Ground Water Authority,
- Hindustan Coca-Cola Beverages Private Limited (HCCBPL)

- Several local, national and international social justice and human rights organisations.

Analysis of the socio-political and ecological geography of the conflict

The Plachimada struggle has been going on for almost a decade now. The struggle against the company has impacted multiple aspects of life of the local population in Plachimada. Because of the struggle they have been able to create pressure on the local authorities to deliver social services in the form of ration cards, grants, land for housing, health care in medical institutes, etc. The movement has become a sort of pressure tactic to force political leaders to serve the people. However, one cannot say that there have been improvements all around in the availability of basic necessities to the local population like education, health, water and sanitation. The village still very much lacks in these.

Local people involved with the Plachimada campaign say that there has been a change in the people's attitude and awareness about such issues. But they also say that the local leaders of the campaign believe that not much has changed in terms of political understanding of the people. Also it seems that passion and reason for struggle has weakened because of the time period it has been going on and people have gone back to their lives and livelihoods.

People associated with the campaign say that the local population is now more interested in gathering monetary compensation from Coca-Cola for the damages done. But they do not understand that this has many constraints and would be a time taking process. The leaders of the campaign also want to continue the struggle to keep fighting on many other issues. They stand with the people and support them in even in daily matters of health, money, etc. The cases of infighting among the members of the campaign has also affected the social relations in the village with people drifting away from the movement and persons involved in it.

Yet, despite the long struggle and the pressure it managed to create on the corporate and political powers, the colonies in Plachimada are still facing problems on very basic aspects like drinking water. The people are still not able to use ground water for domestic needs, it remains unpotable. At present the Perumatty Panchayat is supplying drinking water to Plachimada colonies through a pipeline, but the people are not using it because of the poor taste. The water supply hence comes from Chittur block head quarters through water tankers.

On the other hand, after the closure of the plant the local daily wage labourers had to shift to bigger towns and cities in search of work. Since the agriculture sector has suffered due to Coca-Cola's operations there is not enough work left for the local labourers in Plachimada village which used to be the main employment for the local people. There are doubts that over a period of time the agricultural scenario might have improved, but there have been no specific studies in this regard.

On the political front, the local people say that Plachimada Bill received support from both the LDF and UDF in the assembly, this was during LDF rule. The present UDF government has also stated openly that they support the bill and they would get it sanctioned from the center soon. But there is also an understanding among the local community that behind the scenes Coca-Cola might be lobbying hard against the bill. The opposition LDF is also not taking the issue presently seriously enough. If they put pressure on the government things can move a bit faster.

The local political leaders of the panchayat - Socialist Janata Party (SJP) - say that they would campaign intensely for the law to be implemented. SJP is also part of the ruling UDF. For the last three times the president of the Perumatty panchayat has been from SJP. Recently in a

joint meeting organised by CPM and SJP gram panchayat president stated about the campaign. The local politics is dominated by SJP, a local large land holder is the general secretary of SJP and the president of SJP who is also the MD of 'Mathrubhumi' a Malayalam news paper is the president of SJP.

CPM has two factions in Kerala - One group supports the Plachimada struggle actively while the other fraction has remained passive. This might be because of its alignment more towards the corporate and monetary policies. The trade union angle is not very strong in Plachimada issue, because the number of workers employed in the plant was quite few. A Wikileaks cable published by 'the Hindu' mentions that during the US counsels visit to Thiruvananthapuram, Pinarayi stated that the Plachimada issue is a local issue and they have nothing against US investments and companies¹⁶.

Most of the political organisations supported the Plachimada struggle, but there has not been any permanent resolution of the issue. There have been some actions by political leaderships but they have not been implemented genuinely. For instance, LDF is the leading opposition now but the party leadership does not recognise this as a significant issue.

On the environmental front, the ground water quality and contamination of the soil remains an issue. The ground water remains unpotable and the local people are not able to use it for either domestic or drinking purposes. The soil contamination is still an issue and the local people say that the soil fertility has not reverted to earlier levels and the agriculture productivity remains a serious concern.

There has, however been, no significant detailed investigation done in the area to scientifically confirm the recent developments with ground water and soil toxicity. Apart from these nothing much has been done to improve the situation by the local administration.



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A brief list of the persons, institutions interviewed during the field visit

- Abdullah Chailiyar, Vazhakkad Gram Panchayat and Chaliyar Action Committee
- Dr. Jaffer Palot, CWDRM
- Dr. KT Vijayamadhavan, SPEK
- Dr. Hamid Ali, Chaliyar Action Committee
- KA Shukkur, Chaliyar Action Committee
- Anil Kumar, NGIL Action Council
- Geejo Mathews, Joji Mathews, Babu and Unni, Kadukutty Gram Panchayat Residents
- Jose KA, NGIL Action Council
- Sherlie Paul, Kadukutty Gram Panchayat
- Purushan Eloor and Anwar, Periya Malieenikarana Virudh Samiti
- Lissie George, Municipal Chairperson, Eloor Municipality
- Muhammad Ali, Chairman, Development Standing Committee, Eloor Municipality
- K Chandran Pillai, Trade Union Leader, Fertilizers and Chemicals Travancore, Eloor
- Dr. Latha Bhaskar, Water Sector Specialist, ATREE, Alleppey
- Kuttanad Co-ordination Committee
- George Mullakkara, Farmer Leader, Kuttanad
- Parameshawar Kurup, Kuttanad Co-ordination Committee
- Gopa Kumar, KSSP
- KM Poovu, General Secretary, Vembanad Nature Club
- John Mathai, Member District Committee, KSSP
- Suprabhashanan, Resource Person, Muhamma Gram Panchayat
- KS Damodaran, Ex- Gram Panchayat Member, Muhamma
- KV Dayal, Naturalist, Muhamma
- Dr. Padma Kumar, Deputy Director, Regional Agricultural Research Station, Kottayam
- Deepak Dayanandan, Kumarakom Nature Club
- Dr. Bramhaputran, Plachimada Struggle Solidarity Committee
- Robin, Keraleeyam and Plachimada Struggle Solidarity Committee
- Sharath, Keraleeyam and Plachimada Struggle Solidarity Committee

