The Impact of Tirupur dying Industries on Environment – A case study
MNCs AND ENVIRONMENTAL HAZARDS – TIRUPUR

Tamil Nadu is one of the most industrialized State, at present it is fifth largest economy in India. Given the high current economic growth rate, Tamil Nadu is poised to emerge as the third largest economy before 2005 A.D. Cotton ginning, spinning and weaving continue to be the major industries, followed by the production of automobiles, motorcycles, diesel engines, sugar, agricultural implements, fertilizers, cement, iron & steel, paper, chemicals, transformers and electric motors. Tamil Nadu has emerged as a leading state in South India in the area of attracting FDOs. The third largest city of the state, Coimbatore, is one of the most industrialized cities in Tamil Nadu. It is known as the textile capital of South India or the Manchester of South India.

Tiruppur popularly known by various names such as "Dollar City", Knitt City, Cotton City and mainly "History Centre" “Banian city”. It is 50 Kms from Coimbatore District of Tamil Nadu has emerged as a leading cotton knitwear industrial cluster in South India both for Overseas Market and the Domestic Market, primarily because the climatic conditions (high temperature and low rainfall) facilitate easy processing of yarn.\(^1\) In addition, availability of raw material and cheap labour has ensured that the textile industry activities here experienced rapid growth in the last two decades. Today almost 80 percent of India’s cotton knitwear exports happen from Tirupur. There are about 9000 knitting, dyeing/bleaching, processing, manufacturing units in Tirupur that provide employment for more than 2 lakh people.\(^2\)

One of the most significant challenges for the Tirupur textile industry today is water. The water need of the textile industry in Tirupur is met by both surface water and ground water. The units in Tirupur alone annually consume around 28.8 billion liters of ground water\(^3\). Textile production, particularly dyeing and bleaching, can be water-intensive and can generate large quantities of

\(^1\) 2\(^{nd}\) International Conference on Environmental Science and Development IPCBEE vol.4 (2011).
\(^2\) Ibid
\(^3\) Eswara Moorthi K.Dhanapal and J.Karpagam “Zero Discharge- Treatment Options For Textile Dye Effluent; A Case Study at Manicka Purampudur Commen Effluent Treatment Plant, Tiruppur, TamilNadu”,
effluent. Tirupur is in a dry, water-scarce region, and the rapid expansion of the textile industry has taken place in an unplanned manner, with no associated development of supporting infrastructure or institutional capacity. As a result, the growth has led to the depletion of groundwater reserves and a serious deterioration in environmental quality of both surface and ground water. Typical water consumption in Tirupur is around 200 to 400 liters/kg of finished product, compared with the international norm of 120 to 150 liters/kg.\textsuperscript{4} The city does not have a reliable piped water supply, and private water suppliers abstract ground water and supply it to the textile industry using tankers. Ground water in neighbouring areas has been decreasing and becoming contaminated. This has forced the tankers to travel even-larger distances to draw the water. Lack of adequate water supply have inhibited growth and slowed down the flow of new investments.

The main impact of this industrialization in Tirupur is the pollution of Noyyal River. The Noyyal River has been transformed into an effluent discharge channel by the industries and its productive use is unimaginable even in Utopia. Since the mid – 1990s, water quality and the impact of industrial pollution have been the most debated aspect of water resource management in the Noyyal basin. The intense debate and public interest in water quality issues in the Noyyal have generated vast literature including government commissioned academic and non-governmental on the types and distribution of contaminants in the region. "Around 28,596 farmers located in 68 villages in 7 Taluks in Noyyal River Basin are severely affected by Tirupur Industrial clusters.\textsuperscript{5}"

“The Dam was used by the farmers only for five years as it became a storage tank for textile effluents after that. The farmers, who depended on the dam and river for irrigation, stopped the farm activity in their land. Due to the sad conversion of Irrigation dam to effluent tank, the people living down river in the Tirupur, Karur District are negatively affected. The water in the Orathupalayam Dam became a storage tank of these effluents of the industries”\textsuperscript{6}

\textsuperscript{4} http://tripurnews.com
\textsuperscript{5} Assessment of the Loss to Ecology and Environment in the Affected Areas Report, Anna University & CSE, 2003.
\textsuperscript{6} The Hindu, Friday, Aug 20, 2004
For the last two decades the dyeing units located in and around Tirupur have polluted the “Noyyal”, a non-perennial river that ends in the Cauvery, near Karur by discharging the toxic effluents into the river. “Where earlier the river Noyyal was non-perennial, now it flows throughout the year because it receives effluent discharge from this units. This towns and villages that are located downstream are also impacted.’ 7 Most of the bleaching and dyeing units in Tirupur are located in clusters along the banks of the River Noyyal and River Nallar, into which they were until recently, discharging effluent. All the waste water is either transferred to the treatment unit and then to the ‘Noyyal’ or directly into the ‘Noyyal’8. The two rivers are natural drainage courses that only carry water in the monsoon period. During the remainder of the year, they only carry industrial effluents that stagnate in the riverbeds and percolate into the ground water. As a result, the ground water quality around the cluster of bleaching and dyeing units is polluted to such a level that it is unfit for domestic, industrial and agricultural activities. Estimated waste water generation from the nine industrial clusters in Tirupur is around 102 million liters per day. The bleaching and dyeing process are the main causes of pollutants which include caustic soda, hydrochloric acid, sodium hydro sulphate, hypochlorite and peroxides. The environmental problems of textile manufacturing are related to the bleaching and dyeing (textile processing) segment of the industry. In textile processing, bleaching and dyeing are the two major activities that require a large amount of water. However, these activities are non-consumptive’ and most of the water used by these units is discharged as effluent after processing. 9 The damage caused due to effluunny discharge on agriculture is estimated to be Rs. 234.54 crores.10

7 file:///G:/Researching%20Problems. html
8 2nd International Conference on Environmental Science and Development IPCBEE vol.4(2011)
9 2nd International Conference on Environmental Science and Development IPCBEE vol.4 (2011)
10 Case Study On Wastewater Disposal practices And Likely Treatment Options In Textile Processing Units in TamilNadu, 2007
Figure -1 : Effluents pumped into Noyyal River by dying units.

Tirupur’s textile industry uses bleaching liquids, soda ash, caustic soda, sulphuric acid, hydrochloric acid, sodium peroxide, and various dyes and chemicals for its dyeing and bleaching processes. Other harmful substances include a number of dyes, many based on benzidine structures or heavy metals, both known to be toxic. Most of these chemicals are not retained in the finished hosiery goods, but are discharged as wastewater. The wastewater is acidic, smells terrible and contains dissolved solids, which increase the biological and chemical oxygen demand in water. With no freshwater available for dilution the groundwater from Coimbatore and Tiruppur is no longer suited for irrigation.11” The town is now under severe environmental stress caused by pollution that went unchecked for decades.

Some of the farmer said that they are even uneducated ones, recognize and adapt to the poor water quality. There is some evidence that rise in groundwater EC concentration, farmers shift cropping patterns from less salt-tolerant crops (such as banana, coconut, etc) to more salt-tolerant crops (curry leaf, tobacco, etc). Traditional crops such as paddy and cereals are virtually absent.

Some of the farmers have become shepherd because their land has turned barren.

With polluted effluents continuing to be seen in water bodies and the TNPCB detecting illegal units every now and then, there is doubt over the genuineness of the trial run,” a farmer and retired agriculture economist from Tamil Nadu Agricultural University, pointed out.

Farmer and secretary of Tirupur Groundwater Protection Association, termed the trial run an eyewash, as untreated effluents were still found in large quantities in open areas and streams in the surroundings of dyeing units.

The tragedy of Tirupur, began years ago- and it was first felt by the 1.5 lakh farmers of over 100 villages of Tirupur. Erode and Karur districts. A farmer Athipalayam village, used to be proud of his lush, green 24 acres of paddy, sugarcane and coconut trees. That was before the dyeing units began to flourish in neighboring Tirupur and started pumping effluents into the river. Today the vast barren fields leading up to his house bear only a few patches of shrubs, grass and hollow tree stumps- skeletal remains of an ecological disaster that has struck the region.
Table I. CHEMICALS USED IN TEXTILE PROCESSING AND HAZARDS ASSOCIATED WITH THEIR UNSAFE DISPOSAL

<table>
<thead>
<tr>
<th>Chemicals Used in Indian Textile Industry</th>
<th>Hazards</th>
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<tbody>
<tr>
<td><strong>a. Detergents:</strong> Non-ionic detergent based on nonyl-Phenol Ethoylates</td>
<td>Non bio-degradable, generates toxic metabolites highly poisonous to fish</td>
</tr>
<tr>
<td><strong>b. Stain remover:</strong> Carry solvents like CC14</td>
<td>Ozone depletion, ten times more than CFC</td>
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<tr>
<td><strong>c. Oxalic acid</strong> used for rust stain removal</td>
<td>Toxic to aquatic organisms boosts COD</td>
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<tr>
<td><strong>d. Sequestering agents:</strong> Polyphosphates like Trisodium, Polyphosphate, Sodium hexameta phosphate</td>
<td>Banned in Europe still used in India and household detergents</td>
</tr>
<tr>
<td><strong>e. Printing gums:</strong> Preservative Pentachlorophenol is used in Europe &amp; India</td>
<td>Dermatitis, liver &amp; kidney damage, carcinogenic banned</td>
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<tr>
<td><strong>f. Fixing agent:</strong> Formaldehyde and Benzindie</td>
<td>Harmful, internationally banned</td>
</tr>
<tr>
<td><strong>g. Bleaching:</strong> Chlorine bleaching</td>
<td>Itching, harmful</td>
</tr>
<tr>
<td><strong>h. Dyeing:</strong> Amino acid liberating groups</td>
<td>Carcinogenic, internationally banned</td>
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The effluent discharged into the stream and on land has severe impact on agriculture, fisheries and on drinking water. With the filling up of Orthupalyam dam with effluent also percolated were unable to irrigate their land. The effluent also percolated down to join the groundwater making the water unfit for both irrigation and for drinking. The yield of the crop has declined and the quality of the soil has also deteriorated. As a result of this, the water is not stored in dam
The fish mortality at Orathupalyam reservoir has compelled the Fisheries Department to stop fish culture here. Both the ground water and the surface water are unfit for consumption.

River in Triupur, the result of effluents pumped into it by dyeing units.

Figure – 2 : The Killing Fields : Dead Fish Flot in the Noyyal

The water quality of Noyyal River has been found to be highly polluted. High levels of biological oxygen demand (BOD), chemical oxygen demand (COD), faecal coliform, faecal streptococcus and total dissolved solids (TDS) were observed in the surface water samples from the Noyyal River. High TDS levels in the river water indicated the discharge of treated and untreated industrial effluent, as well as disposal of partially treated sludge along the banks of the river.

14 Ibid
15 The Times of India Delhi : Aug 21,2011;Section : Deep Focus ; P:25
16 Ibid
From 1980 to 2002, the cumulative TDS load discharged by the Tiruppur units alone is estimated to be 2.87 million tonnes. Around 80 per cent of the pollution load has accumulated in the Tiruppur area. Rainfall (annual average of 617 mm) has only a marginal effect in reducing the severity of the impact.

Figure: 4 Treated Effluents Samples Collected from April 2008 to March 2009.

Treated effluents samples were collected every month from the outlet of 7 operational CETPs from April 2008 to March 2009. At the same time Noyyal River water samples were collected at three locations (i.e). Mangalam (2 km upstream of Tiruppur), Kasipalayam (5 km down stream of Tiruppr) and Anaipalayam (20 km down stream of Tiruppur). Similarly at Orathupalayam dam (32 km down stream of Tiruppur) also water samples was collected in the same period. The Total Dissolved Solids (TDS) in the river was found to be alarmingly high – between 5,500ppm and 7000ppm. The permissible level fit for human consumption is 2000ppm. TDS levels as per the records maintained by the PCB always peaked during the period between October and May, the peak season for the garment sector.

Problems such as skin allergy respiratory infections, gastritis general allergy and ulcer were found to be common in villagers. The maximum numbers of cases reported was related to water borne diseases and it was medically accepted that the polluted water had significant influence on these diseases. Due to the increase in infertility cases, the number of new fertility clinics is growing every day in Tirupur Erode, Karur and Coimbatore. The hospitals in the worst affected districts, Erode and Trippur report an increase in infertility treatments for people dwelling near the Noyyal. The doctors report a 67% decrease in sperm

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19 file:///G:/DEAD%20RIVER%E2%80%99S%20REVENGE.html.
count (from 120 million to 40 million) from men living downstream of the polluting industries and effluent discharge. The water pollution resulted in decreases in male sperm count while in females, it created ovarian complications and hormonal changes leading to loss of oestrogen and abortions\textsuperscript{20}. The farmers are slowly realizing that the water pollution has finally caught up to the humans after decreasing the field productivity followed by decreasing farm animal productivity\textsuperscript{21}.

In Tirupur District, the groundwater wells located near the river had high TDS as compared to the ground water samples located far from the river. Water levels in the bore wells are lowering due to the large scale exploitation of groundwater for industrial application. Also, the quality of water is poor from the deeper aquifers especially the TDS & TSS parameters. Generally, the water is not suitable for the textile industry and for drinking. The depth of bore well in Tiruppur area varies from 1000 to 1200 feet\textsuperscript{22}. Agricultural areas away from the Noyyal River and tanks ground water levels have dropped below 800ft in place. Closer to the Noyyal River and in Urbanized areas the situation appears to be better\textsuperscript{23}.

![Figure: 5 Ground Water criticality status map as of 2004 (Source CGWB) Online data. Map prepared by Ecoinformatics Lab ATREE)](image)
The Central Ground Water (CGWB) maps support the idea that ground water is over exploited in the upper parts of the Noyyal sub-basin. Down stream of Coimbatore and Tirupur, the problem of over exploitation disappears.

5.1 NOYYAL RIVER – A LEGAL JOURNEY

W.P.No.1649 of 1996 filed by Mr. P.R. Kuppusamy, Advocate, as the president of Karur Taluk Noyyal Canal Agriculturists Association praying for directions to the PCB to take action against polluting dyeing and bleaching units polluting the Noyyal river by discharging their trade effluents directly or indirectly into the river and further take steps to clean up the river of its present pollution.

On 06.03.1997 By order of the High Court, time was granted to complete the construction of Individual Effluent Treatment Plants by the end of April 1997 and all the construction of Common Effluent Treatment Plants by On 10.06.1997. If the units failed to set up the Individual ETP or the CETP within the time prescribed and obtain consent, the TNPCB and the District Collector, Coimbatore District were directed to ensure the units did not continue to operate and were sealed and TNPCB shall not consider their application for consent until further orders. On 11.02.1998 Joint memo filed by the parties to the effect that the units connected to Common Effluent Treatment Plant presently under the construction would complete and commission the plants on or before 11.05.1998.

The bleaching and dyeing units agreed of the constitution of Flying Squads by the Pollution Control Board (PCB) for the purpose of entry inspection and gathering of samples without any prior notice to ensure that all the Effluent Treatment Plants were functioning and meet the standards set by the Board. The PCB was to monitor the functioning of the effluent treatment plants by constituting Flying Squads. Industry agreed to pay the costs of clean up of the Orthupalayam Dam as and when the estimated were drawn up finalized by the PCB.

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24 Karur Taluk Noyyal Canal Agriculturists Association v TNPCB and others

205
On 26/2/1998 W.P.No.1649 of 1996 was disposed of in terms of the said joint memo filed by the parties. It was also made clear that in default thereof, it was for the Pollution Control Board to take appropriate steps. The Pollution Control Board also undertook to implement the Pollution Laws in accordance with law. It was observed that the industries have been allowed only as an interim measure to continue for three months and if they fail to obtain consent within three months the Pollution Control Board is directed to implement the Pollution Control and Environmental laws forthwith.

On 08.01.1999 The appeal by industry before the Hon’ble Supreme Court was disposed of with a direction to the petitioner to go before the Hon’ble High Court to ventilate their grievances. The Chief Engineer, Water Resources Organization, Pollachi Region Furnishes estimate for desilting the chemicals in the water spread area of Noyyal Orthupalayam reservoir Estimated at Rs.12.50 crores. Since 2001 -2003 Repeated communications had been send by the TNPCB to the industry to deposit Rs.12.50 crore for cleaning up of the Orthupalayam Dam.

The allegations of the farmers were that;

- Inspite of the final order passed on 29.02.1998, based on the joint memo filed by the parties no steps had been taken to implement the said orders.
- No steps had been taken by the industrial units to install the necessary equipments or machineries to treat the polluted trade effluents in their units and obtain consent on or before 11.05.1998, after satisfying the standards prescribed by the Pollution Control Board, inspite of their specific undertakings made in the joint memo dated 11.02.1998.
- The Pollution Control Board had also failed to implement the Pollution Control and Environmental laws, inspite of the specific directions issued by the Hon’ble High Court in the orders dated 29.02.1998, for reasons best known to themselves.
- On the other hand the Pollution Control Board had issued consent to the units, even though they had not completed and commissioned the necessary and required treatment systems to meet the standards
prescribed by the Board, in violation of their own undertakings and the orders dated 29.02.1998 passed by the Hon’ble High Court.

On 16.10.2003 alleging that innumerable representaion made to the authorities concerned had given no result, the Noyyal Ayyacutdars’ Association moved the High Court in W.P.No.29791 of 2003, praying for a writ of mandamus directing the respondents to implement the orders of this Hon’ble Court dated 26.2.98 and made in W.P.No.1649 of 1996, passed in pursuance of the joint memo field with the consent of all the parties and in furtherance thereof direct respondents 1 to 3 to clean the river water stored at Orathupalayam dam within a stipulated time frame, with its own funds and then get the same reimbursed from the bleaching and dyeing units in Tirupur area and prevent future pollution of the Noyyal River from beginning to end. They also sought interim orders to prevent further discharge of effluent into the Noyyal.

The Hon’ble Supreme Court of India in its order dated 28.08.1996 in W.P.(C).No.914 of 1991 stated that the standards stipulated by the Board regarding TDS and approved by the NEERI, Nagpur shall be operative and the textile processing units in the State of Tamilnadu shall comply with the said standards.

On 22.09.2004 one another writ petition was field by CARE Trust, Coimbatore praying for a writ of mandamus forbearing the Government of Tamilnadu from in any way desilting the Orathupalayam dam and subsequently direct the State Government to clean the Orathupalayam dam by advances methods like setting up ozone treatment plants and Reverse Osmosis Plants in Orathupalayam dam and direct the respondents 4 to 8 to set up Ozone Treatment Plants and Reverse Osmosis Plants in their unit. On 18.10.2004 Order was passed in W.P.No.27540 of 2004 to the effect that the Government is at liberty to take appropriate steps or action to prevent further inflow of polluted water from the polluting units on Noyyal River pending further orders.

25  *Tirupur Dying Factory Owners v Noyyal River Ayyacutdars Protection Association & others*

26  *Vellore Citizens Welfare Forum v Union of India & others*
As per the said orders the TNPCB then issued show cause notices to all the 729 bleaching and dyeing units at Tirupur to achieve Zero Discharge by 31.03.2005 as suggested in the action plan.

On 05.05.2005 Based on the joint memo filed by the parities, the Hon’ble High Court appointed an Expert Committee consisting of Six members, with the Collector, Coimbatore District as the Co-ordinator, mentioning its terms of reference to suggest ways and means to clean the Orthupalayam Dam and to prevent the pollution in the Noyyal River.

On 14.07.2005. The Hon’ble High Court expressed its displeasure on the conduct of the industrial units in not installing the Reverse Osmosis Plants as agreed to reach Zero Discharge status and recorded “it is agonising to see that all the periodical orders passed by this Hon’ble Court have been consistently disobeyed”.

On 01.08.2005 by consent all the parties, as recommended by the Expert Committee, the Hon’ble High Court appointed a Committee comprised of 3 lawyers, to monitor the implementation of the Zero Discharge systems by the units. On 19.07.2006 The PWD was directed to commence forthwith the clearing and cleaning of the river course from Tirupur upto the dam and keep the river course free of slush formed during the past over 10 years. After several reports field by the Expert Committee and the Monitoring Committee, the High Court passed an order on 26.12.2006 issued the following directions:

(a) The CETPs are given time upto the 31 st of July, 2007 to achieve the Zero Liquid Discharge (ZLD) of trade effluents subject to the following conditions :

(i) The concerned CETPs are directed to pay a fine on pro rate basis at the rate of six paise per litre from 1st January, 2007 to 31st March, 2007 at the rate of eight paise per litre from 1st April, 2007 to 31st May, 2007; and at the rate of ten paise per litre from 1st June, 2007 to 31st July, 2007.

(ii) The fine amount payable by the respective CETP shall be arrived at by multiplying the fine amount i.e. six, eight or ten paise, as the case may be, by
the total quantity of discharge of each Member Units of CETP as per the consent certificate or as the quantity found in the application for consent and also by the total number of working days in a month. The fine amount thus calculated shall be paid by the respective CETPs on the last date of every month. In case the CETPs or any of them commit any default in payment of fine, the Pollution Control Board shall direct closure of such defaulting CETP and the Member Units and also disconnect the power supply to such defaulting CETP and the Member Units.

(iii) The CETPs or any of them on achieving Zero Liquid Discharge Shall satisfy the pollution Control Board about their ZLD status and the Pollution Control Board upon verification shall issue appropriate certificate from which date, such CETP shall not be liable to pay the fine. In any event, if the CETPs or any of them fail to achieve the ZLD on or before 31st July, 2007, the Pollution Control Board shall forthwith direct closure of such CETPs and the Member Units and also disconnect the power supply to such defaulting CETP and the Member Units.

(iv) The respondents 4 to 7 herein are directed to deposit the balance sum of Rs.8.50 Crores out of Rs.12.50 Crores estimated by the P.W.D. towards the cleaning and desilting operations of the Orathapalayam dam to be carried out by the Public Works Department in two equal installments, the first of such installments being payable on or before 28th of February, 2007 and the second installment to be paid on or before the 30th April, 2007.

(v) The respondents 4 to 7 are directed to deposit a sum of Rs.22,999,548/- being the remaining of the total compensation of Rs.24,79,98,98,548/- awarded by the Loss of Ecology Authority in its Award dated 17.12.2004. This amount shall also be payable in two equal installments, the first of such installments being payable on or before the 28th of February, 2007 and the second installment to be paid on or before the 30th of April, 2007.

(vi) The respondents 4 to 7 are further directed to deposit a sum of Rs.12 crores as an ad-hoc compensation towards the estimated loss for the years 2005, 2006 and 2007. This amount shall be payable in two equal installments, the first of
such installment being payable on or before 15th June 2007 and the second installments to be paid on or before 31st July, 2007.

Against this order the industry moved the Supreme Court which ultimately disposed of the matter in October 2010, granting time to the industry to complete and operationalise the Zero Liquid Discharge system in 3 months time.

Complaining of non-compliance with the order of the Supreme Court, farmers again approached the High Court by filing a contempt application. On January 29, 2011, the Bench directed, the Tamil Nadu government to shut down all dyeing and bleaching units on the banks of the polluted Noyyal and disconnect their electricity supply, holding that no unit should be allowed to reopen and operate unless it achieves a stage of zero-discharge of untreated effluents. The court passed this decision in the course of hearing a contempt of court petition field by the Noyyal River Ayacutdars Protection Association.

In another development the State Government at the request of the PCB issued a government order to advance a loan of Rs.75 crores to the Board for purposes of distribution of compensation to more than 500 members of the Noyyal Ayactudars Association, the Petitioner who had been waging the relentless legal battle from 2003.

Scores of petitions came to be filed before the High Court challenging this government order alleging that this was unfair discrimination as approximately 28,000+ farmers had been found affected by the LoE and that to grant compensation of Rs.75 crores to only 500+ of these farmers was intended to purchase peace with the Petitioner Association. In November 2012 the Madras High Court quashed this government order and ordered recovery of 25 crore already distributed to 360 people before it was stayed by the court.

Finally as per the Hon’ble High court order dated 29-01-2011 out of the 752 dying units registered in Tripur, 654 were still functioning at the time of the court ruling action was initiated against them in February. Their power supply was disconnected and they were saved with closure notices. Only nine units with their
own. Individual Effluent treatment plants (IETPS)- were allowed to keep functioning.

‘It is three years since the Madras high Court ordered the closure of all dying and bleaching units in the Tiruppur knit were for policing the Noyyal River, but the pollution menace continues. The order was passed on January 28, 2011 an a petition moved by farmers that the units did not adhere to the direction of the Supreme Court and High Court to comply with Zero Liquid Discharge (ZLD) harms in effluent treatment. Though there have been some efforts by the dying sector to improve the effluent treatment method after the court order the pollution has been largely continuing.

5.2 ROLE OF TNPCB IN TIRUPUR ISSUE:

The main intuitional response to the problem of pollution came from the judicial system which respondend to the public interest petitions by mandating effluent treatment plants (individual and common). The Tamil Nadu Pollution Control Board is in charge of testing the effluents from the CETPs which were put in place in 2008. However, a report by an environmental consultant in 2009 found that although the CETPs executed by the Tamil Nadu Water Investment Corporation Ltd. were fully operational from an environmental Perspective, they were disastrous because the Reject Management System was Completely bypassed. The CETP was able to separate out the good water or the permeate ‘from the bad water or the reject but then failed to develop as a safe disposal system for the reject. The reject from all the CETPs was simply being dumped locally.

According to the TNPCB (Tamil Nadu Pollution Control Board), 8.8-crore liters of effluents, after primary treatment in effluent treatment plants, are being let out into the Noyyal every day. TNPCB Board stipulates that the river should not be more than 2,100 parts per million (ppm). But the TDS level in the water in the Orathupalayam dam area is above 9,000ppm; in summer, when

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27 [RIVER%E2%80%99S%20REVENGE.html](file:///G:/DEAR%20RIVER%E2%80%99S%20REVENGE.html)
28 [Pollution%20of%20Noyyal%20%20Continues%20%20unabated%20%20The%20Hindu.html](file:///G:/Pollution%20of%20Noyyal%20%20Continues%20%20unabated%20%20The%20Hindu.html)
30 Frontline issue Volume 22-Issue 17, Aug 13 – 26, 2005
water evaporation is higher, the level of TDS is even higher\textsuperscript{31}. The effluent from the various bleaching and dying units has undesirable parameters, higher than the permissible limit specified by the Pollution Control Board. This is because of the usage of various bleaching and dying chemicals.

For effluent treatment, USD 10 million was spent for fixed costs. Which are highly subsidized by the Government. In the recent budget the Government proposed to provide a one-time grant of Rs. 200 crore to the Government of Tamil Nadu towards the cost of installation of a Zero Liquid Discharge system and the money was issued to the Tirupur Corporation on Oct 17-2010.\textsuperscript{32} Now the industrial units have two options. The first one is to enhance the existing effluent treatment plants through Reverse Osmosis (RO) and the second is to switch over to Cleaner Production Technologies (CPT)\textsuperscript{33}.

There was then a World Bank Supported project that helped in improving the status ground water and made it fit for normal use. As per the directive of Madras High Court Zero Liquid Discharge (ZLD) should be strictly followed in Tirupur Knitwear cluster during the effluent Treatment process. Failure to implement this order led to a court ordered closure of all dying units and bleaching units. The Court while pronouncing the closer order, had directed that Common Effluent Treatment Plants (CETPs) / Individual Effluent Treatment Plants (IEPTs) be permitted to operate only if they achieved ZLD norms.\textsuperscript{34}

It is still likely that the closure of many textiles units has reduced the pollution load in the Noyyal after 2011. However there is also increasing concern that some textile units have shifted to interior areas, usually farmlands and that they may be disposing the effluents locally in various ways. One method is to dump the effluence on their own or neighbouring lands and hope that the effluents gets assimilated through percolation seepage and evaporation. Due to that dumping effluents, in one well the white – level- tape came out black\textsuperscript{35}.

\begin{itemize}
\item \textsuperscript{31} 2nd International Conference on Environmental Science and Development IPCBEE vol.4 (2011)
\item \textsuperscript{32} Ibid
\item \textsuperscript{33} Ibid
\item \textsuperscript{34} The Hindu Trippur Feb11, 2014.
\item \textsuperscript{35} Environment and Development Discussion paper No:2 Feb.2014 www.atree.org
\end{itemize}
Most of the substantive action on the Noyyal has progressed through judicial action (Court rulings) rather than administrative action on the part of TNPCB. The TNPCB apparently was silent on this issue, as the practice continued for more than a year. In effect the entire pollution load was being released back into the Noyyal in 2009, and the expensive CETP performed no real pollution reduction function at all. To what extent this issue has been rectified today is unclear. In Trippur many of the EPTs were not functioning as proposed and their discharge were not complaint with CPCB norms. Interestingly some ETPS has negative efficiency (i.e. quality of outflow was worse than inflow) for TDS sulphate and BOD / COD. The plants are not inspected frequently enough to ensure compliance.

The effluent treatments plants setup and current practices of water usage in Trippur are inadequate and not sustainable. If unchecked these will cause irreparable damage to the ecosystem threatening not only the livelihoods of all those employed in Trippur, but also the farmers in the vicinity of these textile units. It is also recommended that the Government deploy additional plants for effluent treatments and discharge and also make adequate provision for sludge storage and disposal.

5.3 THE TAMILNADU POLLUTION CONTROL BOARD

Tamil Nadu has a great tradition of preserving it’s environment. To protect and preserve its environment the Government has established Tamil Nadu Pollution Control Board (TNPCB) in 1982. Pollution control power rests with the Tamil Nadu Pollution Control Board (TNPCB). The stated objective of TNPCB is “to control, prevent and abate pollution of streams, wells, land and atmosphere in the state to protect the environment from any degradation by effective monitoring and implementation of pollution control legislations”. The listed function of TNPCB cover all aspects of pollution control, including comprehensive planning monitoring of groundwater and surface water bodies, inspection of in dividual and common effluent treatment plants (IETPs and CETPs), setting of standards and ensuring compliance. The Tamil Nadu Pollution control laws and rules relating to environmental protection in the state are as follows.
• The Environment (Protection) Act, 1986
• The Environment (protection) Rules 1986
• The Municipal Solid Wastes (Management and Handling) Rules, 2000.
• Noise pollution (Regulation and Control) Rules, 2000.
• The Batteries (Management and Handling) Rules, 2001.

TNPCB functions with its head office at Chennai. It has 25 district offices. TNPCB has established 3 Advanced Environmental Laboratories at Chennai, Salem and Madurai. TNPCB plays an important role in the establishment of Common Effluent Treatment Plants (CETPs) for clusters of small polluting industries in various parts of the state. Tamil Nadu is pioneering state in India in establishing (CETPs).

In this chapter dying industries in Tirupur district has been analyzed by empirical study. Due to the effluents from these industries the Noyyal River has become unfit for both industry and domestic purpose. To protect the Noyyal River from this pollution various writ petitions were filed before the High Court and Supreme Court, that legal journey has also been discussed under this chapter.