

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL (SZ) CHENNAI**  
**ORIGINAL APPLICATION NO. 261/2017(SZ)**

KURUVICHIRASRI.NAGARAJATEMPLE

VERSUS

KUNNATHUNADUGRAMA PANCHAYAT AND OR

**INDEX TO TYPED SET OF PAPERS**

<b>Sl. No.</b>	<b>Date</b>	<b>Description of Documents</b>	<b>Page No.</b>
1.	<b>1.12.2020</b>	REPORT FILED BY THE KERALA STATE BIODIVERSITY BOARD	<b>1-8</b>

Dated on this 23<sup>rd</sup> day of December 2020

Filed on :23/12/2020

**VIDYALAKSHMI VIPIN**

**STANDING COUNSEL FOR SEIAA,KERALA and KSBB**

Door No. 8-B (New No. 19),

Casa Major Road,

Egmore, Chennai – 600008

Ph: 9176790131

Email Id: vidyalakshmij@wialegal.com

**REPORT OF KERALA BIODIVERSITY BOARD-IMPACT OF A  
DRINKING WATER PROJECT AT KUNNATHUNAD  
GRAMAPANCHAYAT PROPOSED TO BE IMPLIMENTED IN THE  
KURUVICHIRA POND IN THE VICINITY OF KURUVICHIRA  
NAGARAJA TEMPLE ON BIODIVERSITY AND ENVIRONMENT OF  
POND (ORDER O.A. NO. 261 OF 2017 (SZ) OF THE HON. NATIONAL  
GREEN TRIBUNAL SOUTHERN ZONE, CHENNAI).**

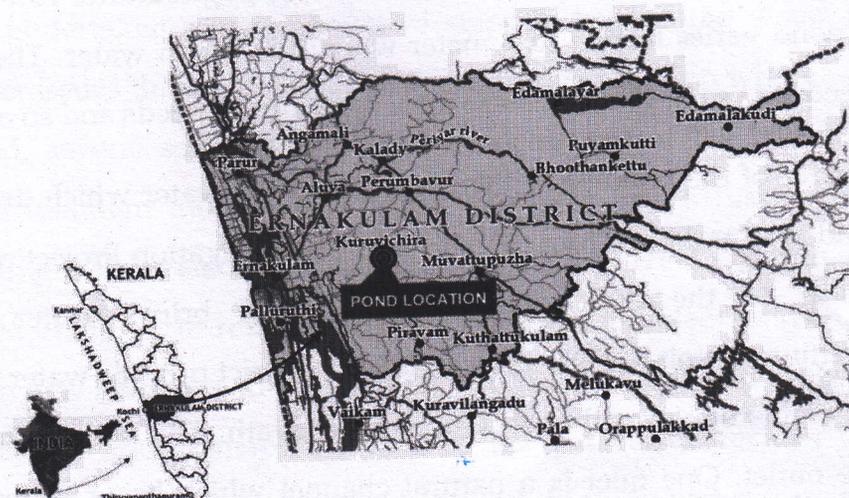
**Background**

In the order O.A. No. 261/2017 dated 18/11/2020, the Hon. National Green Tribunal had directed Kerala State Biodiversity Board (KSBB) to submit a report on the impact of the implementation of a drinking water project, proposed by the Kunnathunad Gramapanchayat, in Kuruvichira with reference to its existing biodiversity and the prevailing environment. A team consisting officials of KSBB and Kerala State Pollution Control Board (KSPCB) visited the site on 01.12.2020 and submitted the report on 11.12.2020.

**Detailed report on the potential biodiversity and environmental issues that may arise when converting an existing pond to a drinking water project**

**a. Field Observations**

The Kuruvichira pond is situated at the 5<sup>th</sup> ward of Kunnathunad Gramapanchayat geographically located at 76°26'12.17"E longitude and 10°1'8.11"N latitude, approximately 2.5 km away from the nearest town Pattimattom (Figure 1 & 2).



**Figure 1: Map showing pond location**



**Figure 2:** A close view of Kuruvichira pond (Source: Google Earth)

Kuruvichira pond is a natural shallow pond that act as a storage tank for irrigation purposes and functions as water conservation, flood control and as a protection to the ecology of the surrounding area. The pond is 54.1149 cent in area surrounded with natural vegetation, rubber and other cultivars. The aquatic life may vary according to water physical chemical or biological parameters. Occasionally these ponds were polluted by discharge of domestic sewage, agricultural run-off etc. The depth of the pond varies from 1 to 4 meter when filled with water. The pond had been left unused for years. The locals use it for agricultural needs and so on.

The water sources of the pond are either the natural rainwater which drained from the nearby land area and also from the Periyar Valley irrigation Project canal which is passing near to the area. The irrigation canal brings water from the Bhoothathankettu reservoir of Periyar river, Idukki district provide water to the hilly areas and the plains of Kunnathunad Gramapanchayath. The pond is having two inlets and one outlet. One inlet is a natural channel which bring water from the surrounding area in to the pond and other which is linked with the irrigation canal.



**Figure 3:** Kuruvichira pond during the time of field visit

***b. The intended Drinking water project of Kunnathunad Gramapanchayat***

Kunnathunad Gramapanchayat is located in Kunnathunad Taluk of Ernakulam District. The total geographical area of the Gramapanchayat is 18.576 sq. km. with a population of 29822, and has two revenue villages, Kunnathunad and Pattimattom. Rubber takes the foremost place in crop category followed by coconut and vegetables. The cultivation of paddy in the panchayat is limited to 65 hector only.

The GP has undertaken many innovative steps to reduce the water scarcity and drinking water issues through various projects. In this situation where water scarcity is exacerbated, several schemes are being implemented at the panchayat level to conserve and maintain the available water resources and to use water efficiently without wasting it. Ever since the introduction of 13th Five-Year Plan, considerable emphasise are going on to reduce the drinking water problem of the GP and were looking for to new resources to alleviate the problems. Ponds and tanks are the local source of water in the gramapanchayats. So the panchayat decided to revive the available ponds in order to alleviate the repeated drinking water scarcity of the area in every year. In this context, the panchayat authority had decided to revive,

rejuvenate and convert the Kuruvichira pond, in to a drinking water project for providing sufficient water to the inhabitants.

***c. Implementation of Drinking water project in Kurivichira pond - Potential Biodiversity and Environmental issues.***

'Chira' - which literally mean a place or area where water is held for irrigating the nearby fields. Kuruvichira is named one among such water storage area locally known as Pond ('*kulam*'). As per the record of the Pattimattom village, the pond area is owned by the panchayat authority (Government land) and lies amidst of private land without having any path to reach other than barefoot though the outlet channel (bund area). This is a natural rain fed pond also fed with the water from Periyar valley irrigation project facilitating water for agricultural activities of the area. A general status and biodiversity of the pond and its adjoining area were already submitted to the Hon'ble Green Tribunal.

So far as the drinking water problem of the gramapanchayat is considered, the panchayat authority intended to build a drinking water project in the existing Kuruvichira pond. Through this project the panchayat aimed to generate treated and purified drinking water and provide to the people who are facing drinking water scarcity. This project was only in paper, neither a detailed project plan was put forward nor any action taken in this regard by the Panchayath authority till date. The aim of the current project was to revive, rejuvenate and conserve the Kuruvichira pond so as to prevent its further degradation and ensure it wise use for the benefit of local communities in the form of drinking water and also for agricultural practices.

***Present status of Kuruvichira pond***

The pond is now in a stage of total degradation due to severe siltation and the accumulation of waste and debris from the surrounding area. During the time of field visit the pond water very low and dry and flourished with dense mat of aquatic plants. Figure 3 & 4 depicts the current scenario of pond.



**Figure 4:** The pond is covered with aquatic weed Salvinia and pistia



**Figure 5:** The pond is filled with soil falling from the adjoining area

Algae and other aquatic weeds (eutrophication) are thriving because of the influx of nutrients from nearby areas into the pond. If current situation continues for a long period, the pond will be totally destroyed.

***The Impact of intended drinking water project on the existing biodiversity and environment of the area.***

The Kunnathunad Gramapanchayat has put forward a plan to rejuvenate and renovate and convert the Kuruvichira pond into a drinking water source through de silting, increase its storage capacity, develop ecofriendly boundary wall, repairing

of sluices and constructing retaining structures its inlet and outlet arrangements, water treatment plants etc. No detailed project plan has been prepared by Panchayat so far.

*a. Impact on pond ecosystem*

The pond is now on the verge of destruction as it is not protected and conserved. The encroachment and land diversion restrict the natural flow of water in to the pond which will inevitably alter the water budget and may considerably change the natural habitat of pond which will adversely affect the pond ecosystem stability and most importantly the pond ecology. Generally, over time this pond is filled up with dead materials and is gradually drying up, human impact will accelerate this process. As a result, the organic material is getting deposited in the bottom which causes eutrophication and area finally seems like a swamp and create foul smell by producing methane.

So far as the biodiversity of the pond is considered, it does not have any significant role as special habitat for a particular species.

**Recommendation:** The implementation of this drinking water project is unlikely to cause any major damage in the area. However, the implementation of this project will lead to protection of pond and environmental protection. The Kerala State Biodiversity Board had not received any draft of proposed Kuruvichira pond drinking water project put forwarded by the Kunnathunad Gramapanchayat. Hence, it may not be possible to predict or evaluate the potential impact of the project on pond biodiversity and its environmental quality.

*b. Impact on water quality*

The Kurivichira pond is a non-perennial pond recharged with rainwater, land drains and also water from the irrigation canal. The Water quality characteristic of the pond is determined by both natural processes and human influences. The effects of these activities can often be minimized through proper management plan and if the causative factors were identified by conducting water quality analysis. The water

quality of the pond water was not assessed due to lack of water availability in the pond during the visit.

**Recommendation:** To maintain this pond as a drinking water source, the water quality of the water should be monitored regularly before and after the treatment process to maintain good water quality.

**c. Impact on biotic parameters.**

In a report submitted earlier to the Hon. NGT, the existing biodiversity and environment prevailing in the area is well elaborated. However, there are no such species that depend exclusively on the pond ecosystem for existence.

**Recommendation:** There should be a special consideration for conservation of biodiversity of surrounding areas if the drinking water scheme is implemented.

**Concluding remarks**

To conclude, high siltation, low water availability and subsequent eutrophication adversely affects the biological parameters of the pond and finally the biological food chain of the ecosystem. Altogether, all these activities are creating a lot of stress to the dying pond ecosystem not only in its physical setting but also on the biological diversity.

So far as the present status of pond and the drinking water problems of the Grampanchayat is considered, the conversion of Kuruvichira pond into drinking water project may be allowed. This project will revive and rejuvenate the pond and its surrounding and also improve the aesthetic value of the area.

Above all, there should be a clear and proper scientific plan in the rejuvenation and implementation of drinking water project. Even if the project is not implemented, the panchayat will have to take necessary steps to revive and rejuvenate the Kuruvichira pond.