Item No. 20 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 25/2025
(IA No. 290/2025)

Yashweer Singh Applicant

Versus

Ministry of Health and Family Welfare & Ors. Respondent(s)

Date of hearing: 06.05.2025

CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICAL MEMBER
HON'BLE DR. A. SENTHIL VEL, EXPERT MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER

Applicant: Mr Yashweer Singh, Applicant in Person (Through VC)

Respondents: Mr. Gigi. C. George, Adv. for M/o Health & Family Welfare
Mr. Chhavi Pant Joshi, Joint Director, Ministry of Health & Family Welfare

ORDER

1. In this original application, the Applicant has raised a grievance against release of two highly invasive alien species of fish namely Gambusia *affinis* (Mosquitofish) and Poecilia reticulata (Guppy) as biological control agents for controlling the mosquitos. The Applicant alleges that these fishes have been declared as Invasive Alien Species (IAS) by the National Biodiversity Authority and one of them is also listed among the 100 world's worst invasive alien species by the International Union for Conservation of Nature (ICUN).

2. Respondent No. 1 has filed the reply dated 30.04.2025 taking the stand that these species are important for the vector control program, as many reports indicate the significance of these two species of fish in the management of mosquito larvae and their crucial role in the global vector

program. The stand of Respondent no. 1 is that the primary advantage of using larvivorous fish for mosquito control is their eco-friendly nature, which avoids the use of chemical insecticides. The stand of Respondent No. 1 in this regard is as under:

> *"xxx …….xxx……xxx*
> *19. That it is historical use of larvivorous fish to control mosquito larvae. As far back as 1904, fish had been used in Bombay City for the control of An. stephensi, (a Malaria vector which breeds in wells) by Bentley and others (Covell 1928). In the construction of Sarda Canal Project between 1920 and 1928, Clyde (1931) had referred the use of larvivorous fish. Over the years, both species have been widely utilized in Malaria control programmes across the globe. In Hyderabad city an operational release of Gambusia affinis in 1967 controlled the breeding of An. stephensi in hundreds of wells in about 2 years. In 1983, a bioenvironmental malaria control strategy was conceptualized by Malaria Research Center (currently NIMR), ICMR and first implemented in Nadiad, Kheda district, Gujarat. In several village councils, guppy fish was cultured along with Indian carps and the money generated was used for village development. After the success in Kheda, similar bioenvironmental malaria control projects were launched across diverse geo-epidemiological zones in India. Which included rural, urban, and industrial areas, each with unique terrain, vector species, and socio-economic conditions. In 1986, the control of mosquito breeding in over 100 experimental villages near Haldwani was attempted by using the Gambusia. This enabled to bring down larval density of An. culicifacies to low levels.*
>
> *20. That these species important for vector control programme as many reports indicate the significance of two species of fish Gambusia affinis and Poecilia reticulata in the management of mosquito larvae and their crucial role in global vector control programmes. Mosquitoes, in their larval stage, thrive in aquatic environments, making them an ideal target for control measures. These species are known for their natural ability to consume mosquito larvae, making them effective biological agents in reducing mosquito populations in aquatic habitats. In specific situations where mosquito breeding habitats are well defined and water conditions are suitable, or where chemical larviciding is not feasible, indigenous or exotic fish with a known tarvivorous potential can be used for larval control. Although larvivorous fish have been used extensively based on the empirical knowledge, certain scientifically designed trials have proved the operational efficiency of their use in malaria control (WHO 2003).*
>
> *21. That one of the primary advantages of using larvivorous fish for mosquito control is their eco-friendly nature. Unlike chemical insecticides, which can harm non-target organisms and disrupt ecosystems, larvivorous fish primarily target mosquito larvae. Biological control using larvivorous fish, particularly Gambusia affinis and Poecilia reticulata, has proven to be a valuable tool in the fight against mosquito-borne diseases. These fish offer a*

sustainable, environmentally friendly alternative to chemical insecticides and have been successfully integrated into Malaria control programmes, worldwide. It is important in Malaria control programmes to continue the use of larvivorous fish, particularly in areas where chemical control methods are not feasible or have become ineffective due to resistance. Additionally, integrating larvivorous fish with other vector control strategies, such as biological and environmental interventions, will provide a comprehensive and sustainable approach to malaria prevention.

22. That it is submitted that the controlling mosquito populations, especially those responsible for transmitting diseases such as malaria, dengue, and chikungunya, remains an essential part of global public health efforts. Traditionally, chemical insecticides were used to target adult mosquitoes, leading to significant environmental degradation, the development of resistance in mosquito populations, and the unintentional death of non-target organisms (WHO, 2010). In light of these adverse effects, there has been an increasing shift towards environmentally friendly and sustainable alternatives. One such alternative is the use of biological control agents, particularly larvivorous fish, which target mosquitoes at their vulnerable larval stage. Numerous scientific studies and field trials have confirmed the effectiveness of larvivorous fish in reducing mosquito populations, particularly in areas with limited access to chemical contro} methods. The introduction of Gambusia affinis in Kunduz valley in Afghanistan significantly reduced Anopheles' larval densities and vector biting rates in rice fields. Similarly, in Egypt and Iran, introduction of Gambusia affinis helped to combat Malaria in marshes and water bodies."

3. Learned Counsel appearing for Respondent no. 1 submits that a joint meeting of the competent authorities of Respondents No. 1 to 3 took place on 08.04.2025, which has proposed that the joint Expert Committee will now be formed with the decision of the competent authority. He submits that the joint Expert Committee will go into the issue:

4. The Applicant appearing virtually has referred to the material which has been enclosed along with the IA No. 290/2025 and has submitted that this material needs consideration at the stage of the decision-making, to which learned Counsel for Respondent No. 1 has no objection.

5. Hence, we direct the joint Expert Committee to consider the material disclosed by the Applicant in IA No. 290/2025 while examining the issue and taking an appropriate decision in accordance with law.

6. Mr. Chhavi Pant Joshi, Joint Director, Ministry of Health & Family Welfare, is present who will ensure that the material enclosed along with IA No. 290/2025 is placed before the joint Expert Committee for examination. We are hopeful that the joint Expert Committee will examine the issue and will take an appropriate decision in accordance with law within a period of six months.

7. The OA is accordingly disposed of. IA No. 290/2025 is also disposed of.

Prakash Shrivastava, CP

Sudhir Agarwal, JM

Dr. A. Senthil Vel, EM

Dr. Afroz Ahmad, EM

May 06, 2025
Original Application No. 25/2025
(IA No. 290/2025)
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