



India's ENDOSULFAN

Disaster

A review of the Health impacts and status of remediation.

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Preface

The endosulfan tragedy which occurred in Kasaragod district of Kerala, India is now well known. It is considered by many experts in the field of pesticide toxicity as one of the worst pesticide disasters to happen to a region and its people. The tragedy occurred for various reasons, starting with the recommendation to use such a chemical in a populated, water-body rich area like Kasaragod. It was then continually aerially sprayed by the Plantation Corporation of Kerala on its cashew plantations for 20 years, without even once looking into its impacts.

After several studies, court cases, public protest etc, the State of Kerala banned the sale and use of endosulfan within its boundary in 2003. The enormity of the health problems in the area was brought to the notice of the government by the local people as well as various organisations like Thanal, Endosulfan Spray Protest Action Committee (ESPAC) etc. This moved the government to start an Endosulfan Relief and Remediation Cell in the year 2007 and since then it is working under the Kasaragod Jilla Panchayath (Local government at the District level) to give some relief to the affected people. Not only the government but some organisations and individuals are also working for the welfare of the affected communities, however small it may be.

This report is a preliminary appraisal of the impact of the remedial and relief efforts among the affected community and has been compiled primarily with the help of community doctors, government doctors, officers in charge of the relief cell and activists associated with the relief measures.

Apart from this rehabilitation work, one important result of the ban of endosulfan is that it has made a lot of changes in the health scenario of the affected area and this is vouched by many doctors working in the area. A quick appraisal of these changes in the year 2008 was also carried out.

Local health practitioners had documented increased incidences of congenital anomalies, delayed puberty, mental retardation, abortions and cancer during the years of endosulfan spraying. However these doctors are now reporting that, following the ban of endosulfan in 2003, there is a significant decrease in cases of these diseases, for example no new cases of cancer, no children born with congenital anomalies or neurobehavioural abnormalities.



Cashew Plantations

Brief background and timeline of the events at Kasaragod

The aerial spraying of endosulfan over the cashew plantations in Kasaragod district in Kerala, India was started in 1978. This was done 3 times a year over an area covering 15 Grama Panchayaths (Local Government at the village level) in Kasaragod³. There were many warning signals about its impact from the beginning, including the mass deaths of bees, fishes, frogs, birds, foxes and also congenital deformities in domestic animals like cows⁴. Since 1979 there had been local outcry from farmers and media concerning the health effects of the pesticide spraying.

In 1994, independent health observations by a local doctor, Dr. Mohankumar revealed that there was a rising incidence of cases of mental illness and congenital anomalies in Kasaragod. He initially considered the possibility of heavy metal or radioactive toxicity of the water in the area (small streams and ponds) since some of the health disorders were more in the people staying near these water sources. He had a letter on this issue published in a journal for doctors published by Indian Medical Association, asking the experts to conduct a study in the area. He took action by writing to the media and other doctors¹. Later in 1998, Leelakumari Amma, a staff of the Krishi Bhavan (Agriculture Department's office at the village level) at Periya Panchayath witnessed the deterioration of health of her two children and herself – loss of voice and hormonal problems – after she came to live in a village inside the spraying area. She then lodged a complaint in the local court along with two other farmers to stop the aerial spraying in the interests of the people's health and the environment.

In 1998 a Sub-court temporarily stopped the spraying of endosulfan in Periya Panchayath where Leelakumari Amma stays.

Several national and international groups conducted health and toxicological studies between 1998 and 2002; and arrived at the conclusion that the abnormal health problems at Kasaragod were due to the spraying of endosulfan.^{2,3,4&5}

The commonly noted unusual diseases were neurobehavioral disorders, congenital malformations in girls and abnormalities of reproductive tract in males³. Another report showed increased rate of cancers and gynecological abnormalities as well⁶. Later the Kerala State health department also conducted medical camps in various regions and subsequently they also conducted a study. The report reaffirmed the relationship between endosulfan and the health problems in Kasaragod.

In 2002 the Kerala High Court banned the sale and use of endosulfan in Kerala, and following this the State Government also issued a ban order in 2003. Local efforts for relief and rehabilitation started at Kasaragod with the help of the local panchayath, local organisations and the Calicut Medical College in 2003. In 2005 the Central Government issued an order that the labels on the pesticide bottles must carry a message that this pesticide is not for sale in Kerala.⁸ This order does not seem to have been implemented by the Central Government effectively.

Facilitated by Thanal and the Kasaragod Jilla Panchayath, a consultative workshop was conducted in August 2005, which was attended by various health experts and social workers to formulate a plan to bring the relief and remuneration package to reality. The Special Purpose Cell for Implementing Relief, Remediation and Rehabilitation was set up by 2007 with the support of the State Government of Kerala. It is an independent and transparent body which is looking into all aspects of the relief work – health, social, environmental, policy and financial.

The Endosulfan Victims Relief and Remediation Cell^{9&15}

The Endosulfan Victims R&R Cell is the outcome of the consultative workshop held in 2005 between the Kasaragod Jilla Panchayath, Grama Panchayaths of the affected villages, health, social and agriculture departments of the Government of Kerala and civil society groups like Thanal and ESPAC. The Cell was initiated formally in 2007 and is located in the district headquarters of the Kasaragod Jilla Panchayath. It is a government-approved body and has 34 members – 10 members from the government including the Jilla Panchayat, 11 members from the Grama Panchayaths of the affected villages and 13 members from civil society.

Meetings are held almost every 2 or 3 months to discuss the issues related to the remediation measures for the victims and the future activities of the Cell. The initial amount that was allocated by the state government for the relief and remediation measures was Rs. 50 Lakh. It was decided by the Cell that the given amount can be used as follows: Rs. 37 Lakh for compensation (medical and other) of affected families, Rs. 6 Lakh for research work in the affected area and Rs. 7 Lakh for aids like wheel chairs and spectacles.



The main activities so far have been:

1) Conducting health surveys and medical camps to create 'victim lists' at the level of each Panchayat with the help of the associated Primary Health Centre (PHC).

The initial surveys revealed 103 people who required tertiary medical and surgical care and were sent for treatment to Kasturba Medical College, Mangalore (KMC). Of these, 63 received treatment there and the rest needed rehabilitative measures. Surgical care has been provided for all the patients who required it; the major surgeries have been conducted at KMC Mangalore. The Cell has borne the costs of the surgery and hospital stay.

2) The survey had revealed a high rate of physical disability and these patients have received aids such as wheel chairs, hearing aids and spectacles. A total of approximately 250 such aids have been distributed and the project continues as the need arises.

3) A Solatium of Rs. 50,000 has been given for the families of the deceased victims. In the first phase 123 families were given the amount; and now in the second phase another 45 families have received the amount. Presently about 300 more families of the deceased have been cleared for payment of solatium, making the total approved list of deceased endosulfan victims to nearly 500.

4) The medicines are also being provided for most of the patients at the closest Public Health Centre (PHC). Medicines for seizure and the other psychiatric conditions have been made available at these PHCs and have helped in symptomatic relief for the patients. These medicines are usually not available in PHCs in India.

5) The recent state budget has not allocated any extra amount for the activities of the Cell. They plan to raise money through a new website dedicated to the victims of the endosulfan spraying.¹⁵



Victim's House

If any victim has been left out of the "victims list", an application letter can be written by him/her to the Cell informing the same. The Cell then instructs the local PHC to confirm that the person is indeed suffering as a consequence of the spraying.

The PHC officer then informs the Cell about his/her findings. The coordinator of the Cell is still receiving such requisition letters from patients. The Cell is finding it difficult to compensate more victims due to the shortage of funds¹⁴.

There was a vision when the Cell began its function for initiating community-based rehabilitation, special schools and pensions but these things have not taken shape yet because of the geographic profile and scattered distribution of people in the affected areas, as well as lack of trained special-care personnel and expertise in the area. The lifespan of the Cell has not been decided and it may continue to function as per the need of the people.

The Health Situation in Kasaragod as of October 2008

Since the late 1970s there had been a rise in the incidence of unusual diseases like congenital anomalies, delayed puberty, mental retardation, abortions and cancer.⁶

Dr. Mohan Kumar, a local practitioner in the affected areas had documented his observations about these illnesses and was one of the first persons to bring this to media attention during the mid 1990's. Another doctor Dr. Sripathi Kajampady who is running a clinic in this area has also noted several health disorders, especially among women and children. The people of Kasaragod were exposed to endosulfan directly by the spraying and also by the contaminated water, food and air.^{2&3} Several studies conducted later did reveal the links between the diseases and the endosulfan spraying.^{2,3,4&5}

Dr. Mohan Kumar and Dr. Sripathi Kajampady have a better picture of the disease trends there because of their long association with people in the area. They comment that there has been a change in the disease profile of the villages over the last few years, after the spray has stopped, as compared to the previous years. They could not recollect any child who had been born, under their supervision, with congenital anomaly during the last few years.¹⁰ There has been no new case of children presenting with neurobehavioral abnormalities¹⁰. The number of abortions has also reduced to a very few¹⁰.

The PHC medical officers who are new here mention that they have not encountered any new cases of neurobehavioral problems or congenital anomalies. Three of the four doctors mentioned that the incidence of cancer has decreased but one doctor says that it continues to be the same¹⁰. Endocrine problems like delayed puberty, abortions, menstrual abnormalities have all decreased¹⁰. The patients with these conditions are all old cases (those who got the disease more than 5 years ago).

The medical records at the PHCs also give valuable information about the trends.

The PHC disease registers at the Vaninagar PHC at Kasaragod have been maintained for separate diseases and there has been no new entry in the records for seizures, mental retardation, disability and cancer since the year 2000.¹¹ . The number of new entries for cases with gynecological problems too has decreased¹¹. The cancer patients who were registered have all expired and no new cases have been registered in the last 8 years.

Other Relief measures:

Apart from the measures initiated by the Endosulfan Cell, relief activities are also being conducted by a non-profit organization called Solidarity Youth Movement (SYM) and an educational program by the Central Government called Sarva Shiksha Abhiyan (SSA).

SYM is providing food and other basic provisions for affected persons on a monthly basis since 2007. They are also constructing houses for affected families lacking decent housing facilities. Medical support through camps and paramedical care is also being provided. Some of the children and youth are also being supported for higher education.¹²

The SSA has initiated a pilot project in Kasaragod in an effort to mainstream 108 physically and mentally challenged children. This is being conducted through weekly meetings, parent training and medical and rehabilitation measures. The children have been assessed for the level of disability and are being provided with whatever aids that have been prescribed for them. They are being taught exercises and are given opportunities for social interaction; and the children with mild mental disability will be given formal education.¹³



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