



ENVIRONMENTAL RESPONSIBILITY AND DAMAGES: ROLE OF MULTINATIONALS IN INDIAN ECONOMY

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Abstract

Although classified as a yellow label (highly toxic) pesticide by the Central Insecticides Board, India is one of the largest producers and the largest consumer of Endosulfan in the world. Of the total volume manufactured in India, three companies — Excel Crop Care, Hindustan Insecticides Ltd, and Coromandal Fertilizers — produce 4,500 tonnes annually for domestic use and another 4,000 tonnes for export. Endosulfan is widely used in most of the plantation crops in India. Toxicity of endosulfan and health issues due to its bioaccumulation came under media attention when health issues precipitated in the Kasargod District (of Kerala) was publicised. This inspired protests, and the pesticide was banned in Kerala as early as 2001 following a report by the National Institute of Occupational Health. The present paper tries to evaluate the effects of Endosulfan on environment and humans and the genesis of problems caused in Kasargod District Of Kerala.



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INTRODUCTION

Endosulfan is a pesticide belonging to the organochlorine group of pesticides, under the Cyclodiene subgroup. It was introduced in the 1950's and it emerged as a leading chemical used against a broad spectrum of insects and mites in agriculture and allied sectors. It is used in vegetables, fruits, paddy, cotton, cashew, tea, coffee, tobacco and timber crops. It is also used as a wood preservative and to control tse-tse flies and termites.

RESEARCH METHODOLOGY

Both Primary and Secondary data are used.

Primary data is collected in certain cases through questionnaire surveys

Secondary data is collected from various reports.

BACKGROUND

Endosulfan is a highly toxic, ubiquitous environmental pollutant that causes long-term harm to humans and wildlife. The chemical is out of patent and is marketed by many different companies under a variety of names like Agrosulfan, Aginarosulfan, Banagesulfan, Cyclodan, Endocel, Endoson, Endonit, Endomil, Endosol, Endostar, Endodaf, Endosulfer, E-sulfan, Endorifan, Hildan, Redsun, Seosulfan, and Thiodan. Endosulfan is widely considered to be a Persistent Organic Pollutant (POP) and is readily absorbed by stomach, lungs and through the skin.

It has been banned in over 68 countries. Some areas where it is banned are Belize, Singapore, Tonga, Syria, Germany, the USA, the Brazilian state Rondonia, the UK, Sweden, Netherlands, Colombia, and the Indian state Kerala. It is severely restricted in Australia, Bangladesh, Indonesia, Cambodia, Japan, Korea, Kazakhstan, Kuwait, Philippines, Lithuania, Sri Lanka, Taiwan, Thailand, Denmark, Yugoslavia, Norway, Finland, Russia, Venezuela, Dominica and Canada.

This pesticide is classified as a Highly Hazardous chemical by the US Environmental Protection Agency (EPA) and the European Union, as a Persistent Toxic Substance by the United Nations Environmental Programme (UNEP), as a Category II - Moderately Hazardous chemical by the World Health Organization (WHO), and as Extremely Hazardous chemical by the Industrial Toxicological Research Centre (ITRC) in India.

However, India is the largest producer, consumer and exporter of Endosulfan.

The endosulfan tragedy happened in Kasaragod district of Kerala in India. It is not a well-known tragedy. It is considered by many experts in the field of pesticide toxicity as one of the world's worst pesticide disasters.

The Plantation Corporation of Kerala (PCK), a public sector undertaking under the State Government, which owns three cashew plantations covering 4600 hectares in Kasargod, sprayed endosulfan aerially in these plantations for 24 years (1976 to 2000), three times a year. These uninterrupted spraying in spite of several warnings about its disastrous impact on health and environment has resulted in several chronic, critical and life-threatening ailments in the areas surrounding the plantations.

This tragedy occurred because a toxic chemical was used continuously in a populated area. Global consensus reached on adding Endosulfan to list of banned substances and phasing it out as an Agrichemical. Use of Endosulfan is Banned by Stockholm Convention on Persistent Organics Pollutants.

OBSERVATIONS AND FINDINGS

Eleven Gram Panchayats covering twelve villages (group and sub-villages) have been severely affected. These villages are Enmakaje, Belur, Kumbadaje, Badiadka, Muliya, Karadukka, Periya, Pullur, Ajanur, Kallar, Panathady, Kayyur, Cheemeni.

In these villages there is a very high concentration of chronic health complications like Mental, Physical and Behavioral disorders, Sensory loss, Neurological ailments, Cardiovascular diseases, Congenital Anomalies, Dermatological and Musculoskeletal disorders etc.

The effects of Endosulfan are

Delayed reproductive development (late sexual maturity)

Autism

Bioaccumulation (substance does not leave body)

Endocrine disruption (stunting of hormones)

Long-rangecontamination

Neurotoxicity

Long-rangecontamination

Sensory Loss

Endosulfan blocks the inhibitory receptors of the Central Nervous System, disrupts the ionic channels and destroys the integrity of the nerve cells

The spraying of endosulfan in the cashew plantations of State-owned Plantation Corporation of Kerala caused a disaster on the biodiversity of the area, a study by the Dr. V. S. Vijayan of Salim Ali Foundation shows.

A quick survey by Dr. Vijayan and his team indicates that the pesticide hit the plants and animals of the area besides causing endless human sufferings. The area showed a decline in plant diversity between 40 and 70 per cent, particularly for native species, compared to the natural habitat. Fishes were the worst hit.

In general, the area, particularly those close to the forests were rich in wildlife, birds and butterflies as reported by the local communities. In Kallar area even elephants had been

reported. In Rajapuram Estate where the plantation is contiguous with forests, elephants are present even now.

A traditional farmer reported that a large number of wildlife, including, Nilgirilangur, tiger, jackal, wild boar, jungle cat, mouse deer, mongoose, squirrels, flying fox, blacknaped hare, sparrow, parakeets, crows, frogs, honey bees, snails were present in the in Enmakajepanchayat. However, he said that “everything else, except the human beings, disappeared during the spray”.

Death of fishes, frogs, and snakes were noted in the very first year of the spray itself. Abnormalities and deformities were recorded in cattle. Animals such as jackal, porcupine, wild boar, civet cats, and bats, which were once common in the area, completely disappeared during the spray.

Dead snakes, squirrels, hares, peacocks, crows were found in the cashew plantations and adjacent areas during the period of spray. However, there are signs of their return during the last two to three years; that is, five to six years after stopping the aerial spray.

Honey bees which were abundant and were a source of income for most farmers, became almost completely absent during the period of spray. Butterflies abundant prior to the spray disappeared during the spray, although some of them appeared to be on the path of recovery, the study says.

Fishes that are common in streams of the region, it adds, are absent in streams running through areas where endosulfan was sprayed. Balitorine loaches, the true indicators of the hill stream habitat, is absent in many streams, and when present, their abundance is extremely low. *Mesonemachilustriangularis* and *M. guentheri* reported earlier could not be located in the survey.

Of the 18 species recorded from 12 streams covering sprayed areas of various panchayats, only two species have a wider distribution. The highly specialized, typical hill stream fishes of the southern Western Ghats such as Tor khudree, Garramullya, *Mesonemacheilustriangularis* and *Mesonemacheilusguentheri* are extremely rare in the streams surveyed. It is also important to note that these species are highly sensitive to any change in the environment, the study says.

Of 20 species that reportedly constituted the regular catch of the fisher folk for commercial purpose prior to the aerial spray, only ten are present now. The fishers reported massive death of fishes during the spray. Some of the species had a discernible size difference between

those collected currently from Kasaragod and those from elsewhere-- those from the rivers of Kasaragod are smaller.

Only two species of frogs, namely *Ranaverrucosa* and *Nyctybatrachus major* were recorded by the team from the area. Species such as *Micrixalus*, and *Rana temporalis* adapted to the torrential streams were absent.

Most of the common birds such as crows, mynas, parakeets, drongos, and koel disappeared during the period of spray. It is reported that since crows were absent, certain communities felt incompleteness in performing their religious rites after deaths.

Major species of birds missing in the plantations were flycatchers, babblers, and endemics such as small sunbird, crimson-throated barbet, and white-bellied tree pie. Common birds absent in the plantations were, fairy bluebird, large cuckoo shrike, and large wood shrike.

Many parts of the world have fallen prey to this pesticide, that has affected a lot of humans, animals and the environment. The Supreme Court of India had passed an interim order on May 13, 2011, as a major number of victims were reported to be affected in Kasargode (Kerala), and banned the production, distribution and use of endosulfan.

The government is to come up with a health package for endosulfan victims in Palakkad following detection of symptoms in 188 people in Kollencode and Muthalamadapanchayats in the district.

A full-scale survey in the district is also being thought of by the Health Department as mental retardation, paralysis, and physical deformity have been reported among the 188 people, who are “suspected” victims of the rampant use of endosulfan.

Announcing this in the Assembly on Thursday , Minister for Health V.S. Sivakumar said the health package, on the lines of the one for Kasaragod, would be announced in consultation with Chief Minister OommenChandy. The government was ready to set up a committee to look into the health issues, and was for providing all medical treatment and assistance.

The Health Department had carried out a survey among 50,000 people in Kollencode and Muthalamadapanchayats on November 19 and 20, 2010. As many as 46 showed symptoms, and 19 were below 15 years of age.

The other 142 “suspects” were detected in a survey carried out in the district on May 3 and 9 in 2011 as per the directive of the National Human Rights Commission in Palakkad district. The survey showed that there were 17 endosulfan victims in Kumaramputhur, 18 in Akethethara, 14 in Sholayur, 26 in Puthur, 31 in Ozhalapathi, 16 in Nelliampathy, and 20 in Nandiyode.

In Kasaragod

The Health Minister said there were 5,227 confirmed victims of endosulfan in Kasaragod district. Intervening, Minister for Agriculture K.P. Mohanan said pesticides, including endosulfan, that figure on the 'Red list' had been banned in the State. A squad comprising officials from the Revenue and Agriculture departments had been set up to confiscate endosulfan being smuggled into the State from across the border, he said.

Government claimed that Endosulfan victims in the district will get Rs.50,000 to settle their bank loans. The victims' families could claim the amount to repay the loans other than those taken for building house, purchase of luxuries goods and the loans taken from private financiers.

This was announced at a district-level meeting of the Endosulfan Rehabilitation Cell chaired by Minister-in-charge of the district K.P. Mohanan here on Friday.

The government has authorised the District Collector to take action on the loans up to Rs.50,000.

The Cell has sought the government to sanction Rs.7 crore to settle 1,100 loans.

The meeting decided to include three more endosulfan victims in the official list which would make them eligible for free medical treatment and other assistance.

The meeting also decided to take steps to float tenders to buy ambulances for nine of the 11 endosulfan-affected panchayats in the district notified by the government.

MITIGATION AND SUGGESTIONS

- The families reported to non- availability of funds which should be made immediately
- Risked and affected villagers to be relocated to safer places
- Government should not allow the continued production of Endosulfan till 2017 and should immediately Ban the pesticide.

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