



Centre for
**PESTICIDE SUICIDE
PREVENTION**

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**Banning highly hazardous pesticides in India will save lives and
reduce total suicide numbers**

Expert submission

**From: the Centre for Pesticide Suicide Prevention
University of Edinburgh
UK**

**To: Dr S K Malhotra,
Agriculture Commissioner
Department of Agriculture & Family Welfare
Ministry of Agriculture & Family Welfare
Government of India**

May 30, 2018

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Dr S K Malhotra,
Agriculture Commissioner,
Department of Agriculture & Family Welfare,
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Government of India,
Krishi Bhawan,
New Delhi

through

Kavitha Kuruganti,
lead Petitioner in Supreme Court of India WP (Civil) 1079 of 2017

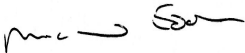
Dear Dr Malhotra,

We respectfully submit our expert opinion on the importance of the immediate ban of certain highly hazardous pesticides (HHPs) from the agriculture in India. Cognisant of the current review of the use of some HHPs in India, we submit that the ban on the highlighted in this document HHPs is not only imperative for saving health and the environment, but for saving lives of vulnerable populations in India.

The Centre for Pesticide Suicide Prevention is a research and policy initiative of the University of Edinburgh, UK. The Centre aims to substantially reduce the global number of suicides that occur after intentional ingestion of pesticide. We work in low and middle-income countries with national pesticide regulators, civil society and other stakeholders to identify highly hazardous pesticides used for self-poisonings. With the help of this information, we work with authorities and other stakeholders to help improve pesticide regulation and ban or phase out HHPs that cause most suicides.

Based the Centre's academic and policy work on pesticide management, we strongly support the immediate ban of the HHPs mentioned in the submission. If needed, we are happy to provide additional evidence.

Sincerely yours,



Director, Michael Eddleston



Policy Director, Leah Utyasheva

30 May, 2018

Intentional pesticide poisoning is a major clinical and public health problem in India

1. Highly hazardous pesticidesⁱ (HHPs) not only harm our health and environment and pollute our food and water. They also cause over 150,000 suicide deaths globally each year, many of which occur in India.
2. Of the 800 000 individuals who die from suicide worldwide each year - one death every 40 seconds - about 15-20% die from pesticide self-poisoning.ⁱⁱ In 1990-2007, pesticide suicides accounted for 30% of all suicides annually, comprising an estimated 300,000 deaths per year globally.ⁱⁱⁱ Although currently lower, in the WHO South East Asia region, it likely causes around 38.5% of all suicide deaths.
3. According to official statistics, in India 10.9% (14,352) of 131,666 suicides in 2014 were from insecticide poisoning. However, this is likely to be an underestimate.^{iv} A nationally representative survey estimated that 92 000 (49.2%) of 187,000 Indian suicides in 2010 resulted from poisoning, with the great majority following pesticide ingestion.^v Poisoning was the leading method of suicide in both men and women.^{vi} In India, HHPs such as methyl parathion, monocrotophos, diazinon, and phosphamidon have been particularly important causes of death, each killing hundreds of thousands of people over the last few decades.

Means restriction is an effective approach to suicide prevention

4. In India, where small-holder farmers use high strength pesticides and fertilisers to increase farm productivity, the ready access to and wide availability of HHPs make them an easy option for poisoning during acute crises. In comparison with developed countries, where agricultural strength pesticides are only available to licensed workers and where few people now work in agriculture, HHPs are freely sold in shops and stored in many homes in rural Indian communities. Unlike relatively low toxicity medicines commonly used for self-poisoning in the west, HHPs are typically lethal if ingested. This means that fatality of self-poisoning is much higher in Indian agricultural communities than in industrialised countries, with resulting high rates of suicide.
5. Most persons who engage in suicidal behaviour do not want to die, with suicide serving as a response to psychosocial stressors.^{vii} A large proportion of pesticide suicides are impulsive, with a person contemplating suicide for less than 10 minutes.^{viii} If a person is prevented from using a highly lethal method, they may use a method with lower lethality, with an increased chance of survival, or the suicidal impulse may pass. Relatively few people go on to find an equally lethal method of suicide. Surviving a suicidal period allows the person to find support from family, community, and medical/psychological services and other ways to deal with the stress.
6. Means restriction has proven to be highly effective in the reduction of suicide in the UK after the domestic gas supply was made less toxic. This strategy has also been shown to be highly successful in reducing pesticide suicides. Restrictions on the import and sale of HHPs have been followed by not only by falls in the number of people dying from pesticide self-poisoning but also dramatic falls in the overall suicide rate, from any cause.^{ix} Equally effective, but less toxic, alternative pesticides and agricultural practices - in particular integrated pest management (IPM) - are available to replace HHPs.

7. Implementing legislation to limit the use of HHPs in agriculture has been a highly successful approach to suicide reduction, reducing overall suicide numbers in countries where small-scale farming is common,⁴ such as Sri Lanka, South Korea and Bangladesh.
8. The best evidence comes from Sri Lanka. After the introduction of HHPs into small-scale rural agricultural practice in the 1960s, the suicide rate increased from 5/100,000 people older than 8 years to 57/100,000 in 1995.⁵ Taking note, the Pesticide Registrar banned parathion and methylparathion in 1984 and then all WHO Class I toxicity pesticides in 1995.⁶ There was a sudden, rapid fall in total suicides from that time (Figure 1 below). Subsequent bans of WHO Toxicity Class II pesticides endosulfan (in 1998), dimethoate, fenthion, and paraquat (in 2008-2011) has led to further major reductions in case-fatality for pesticide poisoning and suicides.⁷⁻⁹ The overall suicide rate is now 17 per 100,000 - a 70% reduction over 20 years - and continues to fall.

Of note, the fall in overall suicide rate clearly shows that people who previously died from HHP ingestion but who now survived the poisoning with less toxic pesticides were not simply switching to other equally lethal methods (such as hanging or shooting). The rate of self-poisoning did not fall. Instead, reducing the toxicity of pesticides resulted in people surviving their act of self-harm and going on to lead productive lives.

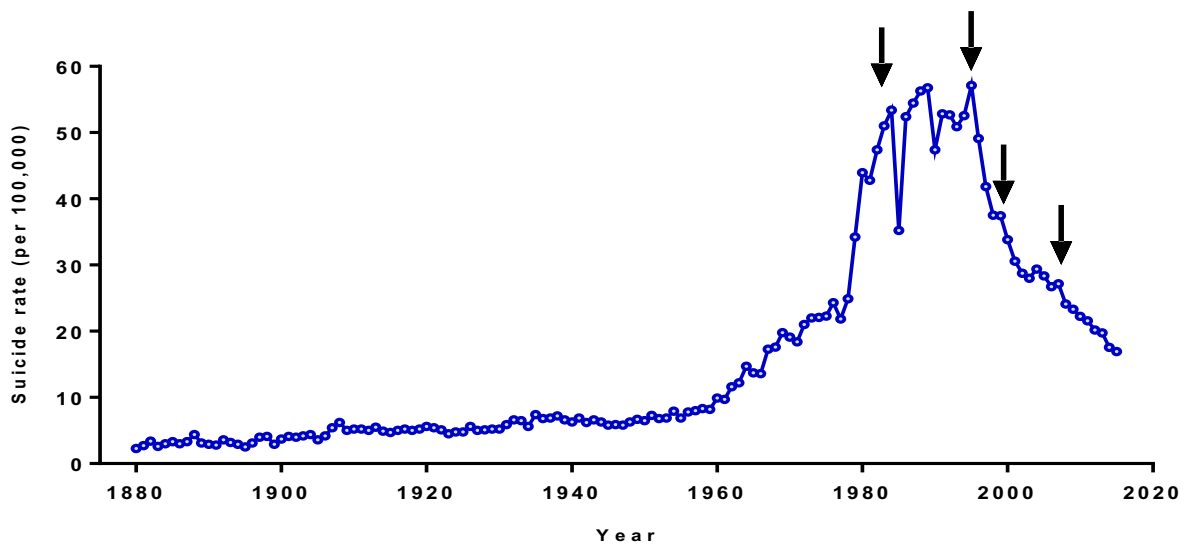


Figure 1. Incidence of suicide in Sri Lanka from 1880 to 2015. The timing of pesticide bans is shown with arrows (1984: parathion, methyl-parathion; 1995: all remaining WHO Class I toxicity pesticides, including methamidophos, monocrotophos; 1998: endosulfan; 2008: dimethoate, fenthion, paraquat). Data were obtained from Police Records.^x

9. Banning HHPs is a cost-effective way to save lives. In Sri Lanka, this approach saved an estimated 93,000 lives at the remarkable cost of \$50 per life and <\$2 per disability-adjusted life year (DALY).

Fulfilling India's international and constitutional commitment

10. When HHPs are used as the means of suicide, the main affected human right is the right to life. According to Article 21 of the Constitution of India “No person shall be deprived of his life or personal liberty except according to a procedure established by law.”^{xi}
11. States that have ratified such binding international treaties as the International Covenant on Civil and Political Rights (ICCPR)^{xii} and the International Covenant on Economic, Social and Cultural Rights (ICESCR)^{xiii}, or that adhere to the Universal Declaration of Human Rights (UDHR)^{xiv}, have a legal obligation to respect, protect and fulfill the human rights of people residing on their territories. By allowing such dangerous chemicals to be available and easily accessible in poor households, and by failing to ensure their population's safety, States infringe on the internationally recognized human rights.
12. According to international human rights law, States must take all appropriate measures to protect life, health, and well-being of their populations. Article 3 of the UDHR states that “everyone has the right to life, liberty and security of person”.^{xv} According to Article 6 of the ICCPR, every human being has the inherent right to life, which must be protected by law.^{xvi} Regional human rights systems also put it at the centre of their framework. Article 2 of the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR) States that ‘Everyone's right to life shall be protected by law’.^{xvii} The African Charter on Human and People's Rights (ACHPR) entrenches the right to life in Article 4.^{xviii} Article 4 of the American Convention on Human Rights provides similar guarantees.^{xix} The right to life is also recognized as part of customary international law, making it obligatory to the States that had not ratified major human rights treaties.
13. In addition to the negative obligation to avoid arbitrary deprivation of life, State's obligation to protect life imposes positive obligations: in the 1982 General Comment on the right to life under the ICCPR, the Human Rights Committee stated that the right to life in Article 6 ‘cannot properly be understood in a restrictive manner’ and ‘requires that States adopt positive measures’.^{xx} This means that the State is under the obligation to establish a legal framework to “ensure the enjoyment of the right to life by all individuals”, including “an obligation to take appropriate positive measure in order to protect life from all possible threats”.^{xxi}
14. State's positive obligation in relation to the right to life is most developed under the European Court of Human Rights (ECtHR).^{xxii} In its jurisprudence, the ECtHR underlines that the right to life has a special place in the entire regime of human rights and international law - “the right to life is pre-imminent to all others, as without it enjoyment of any of the other rights and freedoms in the Convention is rendered nugatory”.^{xxiii} According to the ECtHR, state obligation extends beyond refraining from the intentional and unlawful taking of life^{xxiv}, and “beyond a primary duty to secure the right to life by putting in place effective criminal law provisions”.
15. In the case of pesticide suicides, the balancing between person's autonomy to kill oneself and the protection of life needs to take into account that the majority of pesticide self-poisonings are impulsive acts without the long-standing desire to die.^{xxv} This fact firmly speaks to the prevailing State interest in preserving life of people in its jurisdiction, and of its obligation to protect their life from impulsive acts. To quote the UN' s Human Rights Committee, “[w]hile generally respecting personal autonomy and the importance

of freely exercising rights under the Covenant, States parties should presume that individuals planning or attempting to commit suicide may experience a temporary crisis that hinders their ability to take rational decisions with long term implications, and they should take adequate measures to prevent suicides, especially among vulnerable population groups”.^{xxvi}

Following up on the decriminalization of suicide

16. In its extensive jurisprudence on Article 21 of the Constitution of India, the legal profession of India and the Supreme Court frequently underline the importance of preserving the right to life, including in cases of suicide. In deliberating decriminalisation of attempted suicide, in 2008, the Law Commission of India stated that an “attempt to suicide may be regarded more as a manifestation of a diseased condition of mind deserving treatment and care rather than offence to be visited with punishment.”^{xxvii}
17. The Mental Health Act 2017 reaffirms a “presumption of severe stress in cases of attempt to commit suicide”: “any person who attempts to commit suicide shall be presumed, unless proved otherwise, to have severe stress”. Section 115(2) of the Act mandates the Government to provide care, treatment and rehabilitation to a person who has severe stress and who attempted to commit suicide, to reduce the risk of recurrence.^{xxviii}
18. The WHO estimates that about 20% of all suicides could be prevented through restricting access to poisons, in particular pesticides.^{xxix} From the public health perspective, restricting access to the means of suicide (i.e. banning and removing HHPs from agricultural practice through legislation and importation limitations, and otherwise reducing availability) is likely to be the most effective way to prevent deaths due to pesticide self-poisoning, especially where the intent is low,^{xxx} and pesticide poisoning a common means of suicide.^{xxxi}

Protecting the health of farmers

19. Many of the HHPs suggested for ban in the Writ Petition 1097 were involved in the tragedy of 2017 which saw over 60 people (mainly farm workers) die due to accidental inhalation of pesticides in Yavatmal district of Maharashtra. The HHP ban is in line with the proposal by the Maharashtra Commissionerate of Agriculture that was forwarded to the Central Insecticide Board and the Registration Committee.^{xxxii} The proposal seeks ban on five pesticides found to be used by the inhalation victims, and a ban on all HHPs with red triangle mark on the packages. These pesticides include acephate 75% SP, monocrotophos 36% SL, diafenthiuron 50% WP, fipronil 40% + imidacloprid 40% WG, profenofos 40% + cypermethrin 40% EC.

Implementing Sustainable Development Goals

20. Rapidly reducing and progressively eliminating exposure to toxic chemicals that are hazardous to human health and the environment is essential not only for the protection of human rights and dignity, but also for achieving the Sustainable Development Goals (SDGs).^{xxxiii} The 2030 Agenda for Sustainable Development and 17 Sustainable Development Goals adopted by the General Assembly of the United Nations in 2015

include goals and targets directly related to addressing toxic chemicals, including pesticide poisoning and prevention of suicide. Broadly speaking, all SDGs are affected by pesticide self-poisoning but the most relevant and directly related is SDG 3 on Good Health and Wellbeing.

21. SDG 3 aims to ensure healthy lives and promote well-being for all people, at all ages. This goal includes target 3.4. 'to promote mental health and well-being and reduce mortality from non-communicable diseases by one third by 2030. Within Target 3.4, suicide rates are proposed as indicators of progress (3.4.2). The SDG also include target 3.9 'to substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination by 2030'.^{xxxiv}
22. The Strategic Approach to International Chemicals Management (SAICM), adopted by the International Conference on Chemical Management (ICCM) in 2006 sets out strategies, policies and plans of action for the 2020 goal "to achieve the sound management of chemicals throughout their lifecycle so that, by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment". The latest fourth session of the Conference on Chemical Management, which took place in October 2015, named HHPs as one of its emerging policy issues that needed resolution in order to achieve the 2020 Goal, and adopted a comprehensive Strategy to address HHPs in the context of the SAICM.^{xxxv}

By fully implementing recommendations of the Anupam Verma Committee report to begin with, but going beyond the report too, India will show its commitment to human rights and sustainable development as well as save lives.

23. India has already carried out a series of pesticide regulations, to reduce the hazards associated with pesticide use. Twenty-eight pesticides, including ethyl parathion, chlorfenvinphos, and several organochlorine insecticides, together with several highly hazardous formulations (eg. carbofuran 50%), have been banned.
24. The Anupam Verma Committee reviewed the use of 66 pesticides that are banned, restricted, or withdrawn in one or more countries but which continue to be registered in India. Of these pesticides, 13 were recommended to be banned, 27 to be reviewed in 2018, and 6 to be phased out by 2020. These government commitments remain however unfulfilled. The WP (Civil) 1097 of 2017 Public Interest litigation case by Kavitha Kuruganti & Ors aims to speed up the implementation of this government's commitment.
25. The Registration Committee constituted under Section 5 of the Insecticide Act, 1968, recommended a complete ban of the 12 pesticides mentioned in para 26 with effect from 1st January, 2018. (The DDT pesticide is already banned for use in agriculture).
26. The 12 pesticides to be banned are: benomyl, carbaryl, diazinon, fenarimol, fenthion, linuron, MEMC, methyl parathion, sodium cyanide, thiometon, tridemorph, trifluralin. Several of these pesticides have been responsible for many thousands of pesticide suicides in India and worldwide. Poisonings with these pesticides often require intensive care and mechanical ventilator support which is expensive and may financially cripple the family.

27. Methyl parathion (often called Metacid or Folidol) is a WHO Extremely Hazardous (Class Ia) organophosphorus insecticide^{xxxvi} that has been responsible for many tens if not hundreds of thousands of suicide deaths in India.^{xxxvii} Indian methyl parathion products are also exported to Nepal where they have caused many hundreds of suicide deaths.^{xxxviii} It was banned in Sri Lanka in 1983 because of its importance for suicide, resulting in a sudden halt in the exponential increase in suicide rate caused by the agricultural Green Revolution^{xxxix} (Figure 1). Ironically, it is the same pesticide that was the trigger for India to bring in a statutory regulatory regime called Insecticides Act 1968, after a fatal accident of contamination that killed many in Kerala.
28. Fenthion is a WHO Moderately Hazardous (Class II) organophosphorus insecticide that has been reported as responsible for severe OP poisoning in India.^{xi} The literature suggests that it is less commonly involved in attempted suicide than Class Ia insecticides such as methyl-parathion and monocrotophos. The bans of Class I insecticides in Sri Lanka in the 1990s resulted in fenthion becoming common and a major problem.^{xii} It was banned in 2008-11, associated with a fall in overall suicides^{xiii} (Figure 1).
29. Carbaryl (often called Sevin) is a WHO Moderately Hazardous (Class II) carbamate insecticide. It is produced via methyl isocyanate; a leak of methyl isocyanate being used to make carbaryl caused the Bhopal disaster. It has been associated with suicide worldwide.^{xliii}
30. Diazinon is a WHO Moderately Hazardous (Class II) organophosphorus insecticide that was probably the most common cause of severe poisoning and suicidal death in India in the 1960s and 70s.^{xliv} More recently, its importance has lessened compared to monocrotophos and methyl-parathion but it is still commonly used for self-poisoning.^{xlv}
31. The 6 pesticides to be phased out by 2020 are alachlor, dichlorvos, phorate, phosphamidon, triazophos, trichlorfon. Four of these pesticides (see paragraphs 32-35) have been responsible for hundreds of thousands of pesticide suicides. All are too toxic to be safely used and stored in resource poor Indian rural agricultural communities. These pesticides should be banned now to rapidly reduce the severity of acute self-poisoning and the number of pesticide suicides across India.
32. Phorate is a WHO Extremely Hazardous (Class Ia) organophosphorus insecticide that is probably the most toxic pesticide in current use anywhere worldwide. It is so toxic that it is considered a potential chemical weapon in many countries. It is a well-recognised cause of severe poisoning and suicide in India^{xlvi} as well as direct and indirect means of killing wild animals such as leopards and tigers.^{xlvii} Like many class Ia and Ib insecticides, many patients die before hospital presentation resulting in under-representation in hospital-based case series.
33. Phosphamidon is a WHO Extremely Hazardous (Class Ia) organophosphorus insecticide that has been a key cause of suicide in the Punjab, Tamil Nadu,^{xlviii} and elsewhere.^{xlix}
34. Dichlorvos is a WHO Highly Hazardous (Class Ib) organophosphorus insecticide that is recognised to cause severe poisoning and deaths in Indiaⁱ and Nepal.ⁱⁱ It is also a particular problem in China, where many thousands of people have died after suicidal ingestions.ⁱⁱⁱ

35. Triazophos is a WHO Highly Hazardous (Class Ib) organophosphorus insecticide that has been reported in suicide attempts in India.^{liii}
36. The pesticides to be reviewed in 2018 are: acephate, atrazine, benfuracarb, butachlor, captan, carbendazim, carbofuran, chlorpyrifos, deltamethrin, dicofol, dimethoate, dinocap, diuron, 2,4-D, malathion, mancozeb, methomyl, monocrotophos, oxyfluorfen, pendimethalin, quinalphos, sulfosulfuron, thiodicarb, thiophanate methyl, thiram, zineb, ziram.^{liv}
37. Several of these pesticides are highly hazardous and simply too toxic to be stored and used safely by small-scale farmers in India. They have been responsible for thousands of pesticide suicides across India and Asia, in particular monocrotophos, carbofuran, dimethoate, and quinalphos, as well as fatal accidental poisoning. Many of the pesticides have been banned in other South Asian countries, resulting in marked reductions in pesticide suicides.
38. Monocrotophos is a WHO Highly Hazardous (Class Ib) organophosphorus insecticide that is a key cause of suicide in India. During 1997-2002, around 25% of 8000 cases of poisoning admitted to MGM hospital, Warangal, were due to monocrotophos, with an estimated 35% of these patients dying.^{lv} This insecticide was responsible for more than 40% of all deaths. Monocrotophos was also the number 1 cause of poisoning death in Surat in 2003-4.^{lvi} It was also responsible for the deaths of 23 children and hospitalisation of another 48 children in Bihar after they ate a school lunch cooked with monocrotophos-contaminated oil.^{lvii} Monocrotophos, together with methamidophos, was responsible for the majority of suicidal deaths in Sri Lanka during the late 1980s, early 1990s. Their bans resulted in a rapid 25% reduction in overall suicide nationally^{lviii} (Figure 1).
39. Dimethoate is a WHO Moderately Hazardous (Class II) organophosphorus insecticide that is a common cause of suicide worldwide, with cases reported from across India,^{lix} particularly Maharashtra. After the bans of WHO Class I insecticides, plus endosulfan, in Sri Lanka in the 1990s, dimethoate became the most important cause of suicide nationally.^{lx} After its ban along with 2 others in 2008-11, the overall suicide rate fell markedly^{lxi} (Figure 1).
40. Quinalphos is a WHO Moderately Hazardous (Class II) organophosphorus insecticide that is relatively more toxic than other Class II insecticides, resulting in only low concentration products being permitted in Sri Lanka. It is a common cause of pesticide suicide in India^{lxii} and in Sri Lanka.
41. Carbofuran is a WHO Highly Hazardous (Class Ib) carbamate insecticide that is more toxic than most other Class Ib compounds. It is only permitted as a 3% powder in Sri Lanka due to its high toxicity. It is the active metabolite of the WHO Moderately Hazardous (Class II) carbamate insecticide carbosulfan. Cases of suicide with liquid formulations of carbofuran have been reported in India^{lxiii}; carbofuran has also been used to poison leopards in India.^{lxiv}
42. Acephate is a WHO Moderately Hazardous (Class II) organophosphorus insecticide that is metabolised after ingestion to the WHO Highly Hazardous (Class Ib) organophosphorus insecticide methamidophos. There have been few cases of poisoning with either pesticide in India.^{lxv} Methamidophos, together with the monocrotophos, was

responsible for the majority of suicides in Sri Lanka in the late 1980s, early 1990s. Its ban in 1995 resulted in a rapid 25% reduction in total suicides in Sri Lanka over the following few years^{lxvi} (Figure 1).

43. Chlorpyrifos is a WHO Moderately Hazardous (Class II) organophosphorus insecticide that has been a common cause of severe poisoning and suicide in both India^{lxvii} and Sri Lanka.^{lxviii}
44. We note that the committee recommended the continued use of paraquat in India. This WHO Moderately Hazardous (Class II) herbicide is devastating in suicide attempts, with more than 50% of patients dying, many after ingesting just a small sip.^{lxix} After the bans of WHO Class I insecticides and endosulfan in Sri Lanka during the 1990s, paraquat became a key cause of suicidal death.^{lxx} Its ban, along with fenthion and dimethoate, in 2008-11 reduced the overall Sri Lankan suicide rate by 50% compared to the early 2000s^{lxxi} (Figure 1). The introduction of paraquat into Chinese agriculture in the 2000s coincided with a massive number of paraquat suicides^{lxxii}, not previously seen. High concentration paraquat was banned during 2014-16 in a national attempt to reduce this number of suicides.^{lxxiii}
45. The committee also recommended the continued restricted use of aluminium phosphide. This fumigant has caused a devastating epidemic of suicide deaths in northern India since it was first introduced in agricultural practice at the end of the 1970s^{lxxiv}, likely killing many tens of thousands of people. Ingestion of a single 3 g tablet causes death in more than 50% of cases. Efforts have been made to make the pesticide less available for suicide by banning its public use, with some success.^{lxxv} However, suicides with aluminium phosphide continue to this day,^{lxxvi} with large case series from recent years.^{lxxvii} It seems difficult to keep the public from accessing aluminium phosphide. This pesticide therefore should also be banned and replaced with less acutely toxic pesticides.
46. We note that the committee did not even consider the use in India of carbosulfan, fenobucarb, flufenoxuron, profenofos, propanil, and despite their severe toxicity after ingestion, involvement in rural suicides, and national bans outside of India. Carbosulfan and fenobucarb (BMPC) are both WHO Moderately Hazardous (Class II) carbamate insecticides that kill 6-10% of people who ingest them in self-harm.^{lxxviii} Carbosulfan is now the number one cause of suicide in Sri Lanka. Flufenoxuron is a newly developed benzoylurea insecticide that causes cardiovascular shock and severe metabolic acidosis that requires haemodialysis. Patients have died and required expensive critical care treatment.^{lxxix} It is not clear why the committee chose to not review the use of such dangerous pesticides in rural India.
47. It is possible that living in close proximity to organophosphorus insecticides, as many rural households do, causes depression and suicidal ideation.^{lxxx} More research is required to address this important issue that may drive rural suicides.
48. The opportunity is now available for the government of India to make a significant contribution to national suicide prevention. Around 90,000 suicides occur each year from pesticide poisoning, many in poor rural communities. Banning the pesticides highlighted here will remove many highly hazardous pesticides from these communities, making self-poisoning much less dangerous than it currently is. The experience of Sri Lanka and

Bangladesh in South Asia have clearly demonstrated that banning highly hazardous pesticides from agricultural practice will save lives at little or no agricultural cost.

About the organisation:

49. The Centre for Pesticide Suicide Prevention is a research and policy initiative of the University of Edinburgh, UK, building on the work of its Director in South Asia. The Centre aims to substantially reduce the global number of suicides that occur after intentional ingestion of pesticide. We work in low and middle-income countries (LMICs) with national pesticide regulators, civil society and other stakeholders to identify highly hazardous pesticides used for self-poisonings. With the help of this information, we work with authorities and other stakeholders to help improve pesticide regulation and ban or phase out HHPs that cause most suicides. Our work is done with the help of local staff, and experts who have led similar work in Asia. Removing HHPs from agriculture will benefit households and communities by reducing suicide as well as benefiting the environment and public health. The organization is supported by an Incubation Grant of the philanthropic organization GiveWell USA.

50. The Centre for Pesticide Suicide Prevention has initiated this submission having heard about the ongoing Supreme Court of India case regarding the ban of HHPs identified by the Anupam Verma Committee report. We consider it of utmost importance to use this moment to strongly support the need for the immediate ban of HHPs identified in the report. Ideally, for the protection of health, lives and the environment, other class I toxicity HHPs mentioned in this submission (paras 44-46) need to be banned too.

ⁱ Highly Hazardous Pesticides (HHP) means pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or GHS or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered to be and treated as highly hazardous. WHO, FAO, International Code of Conduct on Pesticide Management. Guidelines on Highly Hazardous Pesticides. 2016, Rome.

ⁱⁱ Mew E, Padmanathan P, Konradsen F, Eddleston M, Chang SS, Phillips M, Gunnell D, The global burden of fatal self-poisoning with pesticides 2006-15: systematic review. *Journal of Affective Disorders* 219 (2017) 93-104.

ⁱⁱⁱ Mew et al., The global burden of fatal self-poisoning with pesticides 2006-15: systematic review.

^{iv} The national data only disaggregates self-poisoning into “insecticides” and “other poisons”. The lack of a more general “pesticides” category, which also includes rodenticides, fungicides and herbicides, is likely to result in an underestimation of the number of pesticide suicides. See V. Patel, C. Ramasundarahettige, L. Vijayakumar, J.S. Thakur, V. Gajalakshmi, G. Gururaj, W. Suraweera, P. Jha. Suicide mortality in India: a nationally representative survey. *Lancet*, 379 (2012), pp. 2343-2351.

^v Mew et al., The global burden of fatal self-poisoning with pesticides.

^{vi} V. Patel, et al, Suicide mortality in India: a nationally representative survey. *Lancet* (2012).

^{vii} WHO Restricting Access to the Means for Suicide, at

http://www.who.int/mental_health/prevention/suicide/pesticides/en/. Accessed March 24, 2017.

^{viii} Deisenhammer E, Ing C, Strauss R, Kemmler F, Hinterhuber H, Weiss E, The duration of the suicidal process: How much time is left for intervention between consideration and accomplishment of a suicide attempt? *J Clin Psychiatry* 70:1, January 2009; Conner KR, Phillips MR, Meldrum S, Knox KL, Zhang Y, Yang G, Low-planned suicides in China. *Psychol Med*. 2005 Aug; 35 (8): 1197-204, Eddleston M, Karunaratne A, Weerakoon M, Kumarasinghe S, Rajapakshe M, Sheriff MH, Buckley NA, Gunnell D, Choice of poison for intentional self-poisoning in Rural Sri Lanka, *Clin Toxicol (Phila)* 2006; 44(3):283-6.

^{ix} Gunnell D, Knipe D, Chang, Pearson M, Konradsen F, Lee WJ, Eddleston M, Prevention of suicide with regulation aimed at restricting access to highly hazardous pesticides: a systematic review of the international evidence, *Lancet Global Health*, August 11, 2017.

^x Knipe D, Gunnell D, Eddleston M, Preventing deaths from pesticide self-poisoning – learning from Sri Lanka’s success. *Lancet Global Health*, 2017, 5(7), e651-e652.

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- ^{xi} The Constitution of India [India], 26 January 1950, available at: <http://www.refworld.org/docid/3ae6b5e20.html>. Accessed 15 May 2018.
- ^{xii} *International Covenant on Civil and Political Rights*.
- ^{xiii} UN General Assembly, *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, United Nations, Treaty Series, vol. 993, p.3.
- ^{xiv} *Universal Declaration of Human Rights*.
- ^{xv} UN General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, 217 A (III). Art. 3;
- ^{xvi} UN General Assembly, *International Covenant on Civil and Political Rights*, 16 December 1966, United Nations, Treaty Series, vol. 999. Art. 6.
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