

PLHavemann EPA Submission

Tena Koutou

Thank you for the opportunity to submit

- LLB(HONS), LLM University of London,
- Retired Professor - UK, Canada, Australia and NZ
- Senior Res Fellow , SAS University of London,
- Adjunct Prof.JCU
- Research and teaching in Law , Criminology and Sociology and Environmental Studies

Technically a decision ban these substances recommended by this submission is outside the scope of this re-assessment

Nonetheless a ban would be consistent with the EPA's statutory duties under *HSNO Act 1996*. The DCM should be mindful of the principles of the Act stated in **Section 5**:

All persons exercising functions, powers, and duties under this Act shall, to achieve the purpose of this Act, recognise and provide for the following principles:

(a) the safeguarding of the life-supporting capacity of air, water, soil, and ecosystems;

(b) the maintenance and enhancement of the capacity of people and communities to provide for their own economic, social, and cultural well-being and for the reasonably foreseeable needs of future generations

Based upon what is at stake in terms of known harms and their ecocidal consequences, the **precautionary approach** must be followed as provided for under **Section 7, HSNO Act 1996**. The **precautionary approach** referred to derives from Principle 15 UN Rio Declaration 1992 to which NZ is a signatory. Principle 15 states:

'In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation'.

Therefore most cost-effective way to protect bees and other insect pollinators against adverse effects arising from post-application exposure to the substances in fact requires the banning of the application of these substances to plants. Such a

ban ought to be imposed until such time as there is irrefutable scientific evidence that they can be applied without post-application harm to pollinators (and humans).

The EPA staff report appears to rely on data spanning 1970s to 2009.

Consideration of this archais data must not be taken in a vacuum that **ignores climate change and its serious impacts on ecosystems and pollinators in particular**. Is the data fit for purpose in the present context? I submit the answer is NO.

Consistent with sections 5 and 7 of the HSNO Act I repectfully submit that a **radical re-think of the EPA 's methodology** is needed in this context to provide elementary base-line data for making the decision you are called upon to make credible and evidence based:

- **A national pollinator census,**
- **Contemprary review of all the literature on OPs and all other pesticides currently used or potentially to be used in NZ**
- **National Pollinator Plan to sustain and grow this population.**

- **Ecosystems Services** analysis of the contribution of pollinators to the NZ economy.
- Evaluation of alternatives to pesticide use
- **Public Health Analysis** human deaths and illness attributable to pesticide use.

Given your section 5 duty to secure :

the maintenance and enhancement of the capacity of people and communities to provide for their own economic, social, and cultural well-being and for the reasonably foreseeable needs of future generations

Pollination is a priceless and irreplaceable ecosystem service and hence of enormous value to human beings, but it is not a 'free good'; instead, it requires urgent nurturing. This situation has been recognised since the 1990s, e.g. by the UN CBD's **International Pollinator Initiative** and regional initiatives, currently the **African, Brazilian, European and UK National Pollinator Initiative** and **North American** initiatives.

See Janet N Abramovitz, 'Putting a value on Nature's "Free" Services' World Watch (1998); Convention on Biological Diversity <http://www.cbd.int/agro/pollinator.shtml>

Ecosystem Services

In 2009 it was estimated that the worldwide economic value of crop pollination was **150 billion euros annually**.

See Kjohl, Nielsen & Stenseth (2011) 1 at <http://www.fao.org/fileadmin/templates/agphome/documents/Biodiversity-pollination/Climate_Pollination_17_web__2_.pdf>

Pollination is a basic ecosystem service. The slow genocide of pollinators that is occurring worldwide, unless addressed, will usher in an unimaginable global food crisis and associated violent conflict.

See IPCC 5th Annual Review: Summary for Policy Makers (2014)

New Zealand is a party to the CBD and the UNFCCC and but there does not appear to be similar activity in Oceania which includes New Zealand? This demonstrates an alarming lack of initiative for a region and a state so fundamentally dependent on agriculture!

Pollution caused by unsustainable development involving the use of pesticides like DDT has long been threatening the carrying capacity of the Earth through the destruction and degradation of critical ecosystems. See Rachel Carson, *Silent Spring*, 1962.

In a 2014 refereed journal article : ‘Conclusion on a world wide Integrated assessment on the risks of neonicotinoids and fipronil to biodiversity and ecosystem functioning’ in *Environmental Science Pollution Research* (2014) Van der Sluijs et al employ an ecosystem services approach , identify knowledge gaps etc

And conclude

‘ the adequacy of the regulatory process in multiple countries ... must be closely considered and be cognizant of past errors. For example DDT ...Organophosphates have been largely withdrawn because of belated realization that they posed great risks to human and wildlife health....

Why has this not happened in NZ???

In the USA, data on the decline of pollinator populations and the link with substances such as organophosphates and carbamates

illustrate the catastrophic impacts these substance have on pollinators.

To quote **Marion Ellis** in a **2010 paper not cited by the EPA** ?:

'Despite the dependence on honey bees for the pollination of crops in the USA, colony numbers have declined by 45% over the past 60 years (NAS, 2007). Most honey bee losses from 1966-1979 were attributable to organochlorine, organophosphorus, carbamate, and pyrethroid pesticide exposure. Efforts to restrict pesticide application during bloom provided some relief; however, the residual activity of some pesticides was never effectively addressed. Colony losses were especially severe from 1981 to 2005 with a drop from 4.2 million to 2.4 million, although some of the decrease is attributable to changes in how colony numbers were estimated.'

See Johnson, R.M., M.D. Ellis, C. Mullin, M. Frazier. 2010.

Pesticides and honey bee toxicity - USA. Invited review.

Apidologie. DOI: 10.1051/apdio/2110018 at

<<http://www.extension.org/pages/27967/pesticides-applied-to-crops-and-honey-bee-toxicity#.VBdneS6SzBe>>

Sadly, this EPA application (APP 202142), though well-intentioned, is merely tinkering with 'controls' and is doomed to

perpetuate the process of pollinator genocide. Pollinators do have some predictable patterns; however, they are not the predictable 'drones' upon which so-called control systems are based.

Ninety percent of pollination is performed by wild bees, moths, hover flies and other insects whose behaviour patterns are much less well known than honey bees' and upon which little testing has yet been done.

See Damien Carrington, 'Poison Ban is Good for Bees', Mail & Guardian, 3 May 2013 at

<<http://mg.co.za/article/2013-05-03-poison-ban-is-good-for-bees>>

In addition there are multiple routes whereby bees are exposed to pesticides. This phenomenon does not just apply to neonicotinoids.

See Krupke, Hunt, Eitzer, Ardino and Given, 'Multiple routes of pesticide exposure for honey bees living near agricultural fields' (2012) PLoS ONE 7 (1) at

<<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0029268>>

Further, the bio-accumulative and synergistic impacts of pesticides remain poorly understood as evidenced by the massive loss of bees over the last 60 years and most recently (since 2006) to colony collapse disorder (CCD). Surely this lack of knowledge and certainty ought to trigger the precautionary approach in section 7

See Pesticide Action Network of North America, 'Pesticide and Honey Bees: the State of the Science' (2012) at <<http://save-bees.org/wp-content/uploads/bees-and-pesticides.pdf>>

Further, the IPCC 5th Assessment Report asserts that climate change is now severely impacting on the ecosystems necessary for bees and other pollinators to survive and impairing their capacity to deliver pollination as a basic ecosystem service upon which human life depends.

See

See IPCC 5th Assessment Report: Summary for Policy Makers (2014) 20-21 at <https://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf>

Emily Gosden, 'Bees and the crops they pollinate are at risk from climate change' The Telegraph, 29 Mar 2014

at

<http://www.telegraph.co.uk/earth/earthnews/10730667/Bees-and-the-crops-they-pollinate-are-at-risk-from-climate-change-IPCC-report-to-warn.html>

Climate change is likely to interrupt the mutualistic synchrony between plants and pollinators upon which both depend -- and on which the human food supply in turn depends. Precise knowledge about these phenomena is lacking.

See Kjochl, Nielsen and Stenseth, Potential Effects of Climate Change on Crop Pollination (2011) at

http://www.fao.org/fileadmin/templates/agphome/documents/Biodiversity-pollination/Climate_Pollination_17_web__2_.pdf.

Hence extreme caution is required concerning any threat to pollinator populations.

Up to 90% of all flowering plants require pollinators to survive. In the USA, one third of the agriculture that provisions essential parts of the human food chain relies on pollination by honeybees.

See Centre for Food Safety, 'Food & Climate: connecting the dots, choosing a way forward' at

<http://www.centerforfoodsafety.org/files/foodclimate_med_32825.pdf>

Pollination is a basic ecosystem service. The slow genocide of pollinators that is occurring worldwide, unless addressed, will usher in an unimaginable global food crisis and associated violent conflict.

See IPCC 5th Assessment Report: Summary for Policy Makers (2014)

HUMAN CANCER

The US President's Cancer Panel found that the true burden of environmentally induced cancer, e.g. from pesticides, is greatly underestimated.

See Susanne Reuben, Reducing Environmental Cancer Risk: What We Can Do Now (2010) at

<http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf>;

Beyond Pesticides 'Daily News Blog' 11 May 2010 at

<<http://www.beyondpesticides.org/dailynewsblog/?p=3593>>

Some estimates suggest that 40-70 % of human cancers are currently linked to chemicals introduced into the environment, often in the quest for profit from food production and processing. Insecticides or 'plant protection substances' are among the contributors to the modern global epidemic.

There are well known risks of 'irreversible damage' from these substances but there is no scientific certainty that it is possible to avoid these catastrophic risks by implementing so-called 'appropriate non-contact periods' for organophosphate or carbamate plant protection substances.

It is disingenuous for the chemical industry to claim that there are enforceable means whereby it is possible to regulate the application of these substances in order to ensure that bees and other insect pollinators will not be adversely and ultimately lethally affected. These so-called 'plant protection substances' have been developed without concern for their cumulative and synergistic effects on pollinators and other species such as homo sapiens. Such substances are linked to CCD (colony collapse disorder) as well as the decimation of pollinators even in jurisdictions where these substances are subject to the (albeit self-administered by farmers and horticulturalists) 'controls' on their application recommended by the manufacturers and/or required by environmental protection regulators.

EPA Decision

DMC should step outside of its box and call on the EPA to advise the Minister to ban, in other words implement a permanent non-contact period for, organophosphate or carbamate SO CALLED 'plant protection' substances as well as neonicotinoids. These ecocidal substances must be removed from use.

Instead Government should promote organic agriculture and agro-ecological systems in order to protect bees and other insect pollinators as well as humans against adverse effects arising from 'post-application' exposure to the substances.

See Centre for Food Safety, 'Food & Climate : connecting the dots, choosing a way forward' (2014) at http://www.centerforfoodsafety.org/files/foodclimate_med_32825.pdf >

Further, the EPA should be demanding the use of Green Chemistry alternatives instead of the current cocktail of toxins being accepted for registration in New Zealand. State governments in the USA are adopting Green Chemistry initiatives, e.g. Michigan Green Chemistry initiative and the California EPA's plan to promote green chemistry initiatives.

See Reuben... Presidents Cancer Panel (2010) 7

<http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf>

As the emerging green chemistry illustrates, it is counter-productive to characterize the options as 'pro' versus 'anti' pesticides and to allow the pesticide industry to bamboozle government and producers into thinking that there is no alternative (TINA)!

See Emma Bryce, 'London Bee Summit: Pesticide or No Pesticides?' The Guardian 28th January 2014 at

<<http://www.theguardian.com/environment/world-on-a-plate/2014/jan/28/honeybee-neonicotinoids-pesticides-bee-summit-colony-collapse-disorder>>

THANK YOU