



## Pesticides and international environmental governance

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**International environmental conventions may constitute a last resort when people and governments do not have the power to enforce existing national legislation. Unfortunately to the Nicaraguan farm workers who are still affected by earlier times' use of the pesticide DBCP, this pesticide is not included under the Stockholm Convention on Persistent Organic Pollutants. Their fate serves to remind us of the detrimental – and deathly – consequences of the inadequacy of international environmental governance.**

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The use, trade and disposal of pesticides categorised as 'persistent organic pollutants' is regulated internationally through the Stockholm Convention on Persistent Organic Pollutants (POPs). The convention was negotiated during the 1990s, adopted in 2001 and entered into force in 2004. It has fostered legislative action throughout the world, including in Nicaragua.

### **DBCPC: a persistent organic pesticide**

In 2009, 815 men died from chronic kidney disease in Chinandega in the north-western part of Nicaragua. Their death adds to the list of the thousands of men in Nicaragua and elsewhere who have died from chronic kidney disease or become sterile. They all share the fact that they worked in plantations where the pesticide DBCP (1,2-Dibromo-3-Chloropropane) was used throughout the 1960s, 1970s and, in many cases, well into the 1980s.

DBCPC, or Nemagon as it is known in Nicaragua, was widely used as a pesticide in the United States, Central America and other tropical and sub-tropical regions to protect crops from attacks from nematode worms in the soil. In 1977, employees who had handled DBCP at the Occidental Chemical Plant in California were found to be sterile. A few months later, the Environmental Protection Agency

### **POLICY RECOMMENDATIONS**

International environmental conventions constitute a legitimate legal and political platform for addressing environmental problems that cross boundaries in their origins and/or impacts. In accordance with international declarations on sustainable development such as the 1992 Rio Declaration on Environment and Development

- governments should strive to strengthen international environmental cooperation, including legally binding environmental conventions and their effective implementation.

With reference to international environmental conventions, development cooperation should seek to contribute to:

- facilitating and strengthening the claim-making capacity of citizens, aiming to protect their environmental rights.
- enabling national and local authorities to effectively implement, monitor and enforce existing national and international environmental legislation.



suspended all uses of the pesticide in the United States, except in the pineapple plantations in Hawaii. Later, DBCP was also listed as having carcinogenic effects. However, the United States continued to export DBCP to Nicaragua and other countries until 1985.

DBCP has been found to be quite persistent in groundwater, with an average half-life of twenty years. In 1997, twenty years after the use of DBCP was suspended in California, DBCP residues were still being found in 370 of the 1,884 wells tested, and more than an estimated 500,000 Californians were exposed to DBCP from their water supply according to the Californian Department of Health Services. Recent information reveals that drinking water supplies in 38 cities in California and elsewhere continue to be affected by DBCP residues.

## **The pesticides lawsuit against Dole Food and Dow Chemicals**

As the dust settled in California and DBCP levels in the groundwater slowly started to decline, Nicaraguan farm workers began raising their voices, realising that in their case national justice was not enough.

In 2005, more than 3,000 farm workers – ‘the Nemagon victims’ – marched the 150 kilometres from the plantation areas around Chinandega to Managua, where they camped for three months, ‘presenting their claims and exposing their pain’. They had won a legal case in Nicaragua’s Supreme Court against Dow Chemical Co., Shell Chemical

### **THE IMPORTANCE OF INTERNATIONAL ENVIRONMENTAL CONVENTIONS**

International environmental conventions provide an important legal and political platform for international development cooperation. They commit the parties to the conventions not only to develop the legislative and administrative framework necessary to enforce the conventions, but also to assist each other in meeting their obligations under them. In this way, international environmental conventions are important, not only in their own right as legal documents, but also because they produce a trail of legislative and administrative initiatives among the parties to the conventions and thereby contribute to shaping environmental development cooperation. Last but not least, for people – and sometimes also governments – in countries which lack the necessary institutional capacity and political power to enforce existing national and international environmental legislation, international environmental conventions also constitute a ‘lifeline’ through which to claim their rights.

**These years the world is witnessing a renewed interest in tropical agriculture. New and powerful actors are attracted to the sector by rising food prices and growing demands for bio-fuels. This makes international cooperation and regulation aimed to protect environmental and other rights more needed today than ever.**

Co. and Dole Food Co, holding these companies responsible for their health problems. However, the court ruling was not recognised by the US companies and was ruled non-enforceable by a Los Angeles judge.

Two years later, in 2007, a Los Angeles-based lawyer decided to take the case and brought it up in the Los Angeles Superior Court. Twelve workers alleged sterilisation and accused Dole Food Co. and Dow Chemical Co. of negligence and fraudulent concealment in using DBCP.

The jury awarded USD 3.2 million to six of the twelve workers in compensatory damages. Jurors found that DBCP was defective and that its risks outweighed its benefits. They also found that Dole acted with malice and actively concealed the danger from its own workers. Both companies acknowledged that DBCP can be linked to male sterility and that DBCP was used in Nicaraguan banana plantations after being banned in the United States in 1977. Dow also acknowledged that the possibility of harm existed.

## **The legal framework for pesticide regulation in Nicaragua**

Nicaragua has a comprehensive legal framework for the regulation and control of pesticides and hazardous chemicals. The central legal document on the subject, Law 274, was passed in 1998. However, already back in 1993, just after the Rio Summit on Environment and Development, a national registry of permitted pesticides was created by presidential decree. According to this presidential decree, no pesticide that was prohibited in its country of origin could be included in the registry and thus any longer be legally imported, distributed or used in Nicaragua. By implication, this meant that DBCP was declared illegal in Nicaragua in 1993. Later on, Nicaragua explicitly prohibited a number of specific pesticides, and restricted the use of others, through Law 274 and subsequent ministerial resolutions and agreements. The first of these agreements was approved

immediately after the signing of the Stockholm Convention in 2001, and all pesticides included under the convention were prohibited, while the use of others was restricted. In some cases, however, the restrictions are very light.

The overall responsibility for enforcing the legal framework on pesticides rests with the Ministry of Agriculture, Livestock and Forestry (MAGFOR) in close collaboration with the Ministry of Environment and Natural Resources (MARENA) and Ministry of Health (MINSA). MARENA is the designated national authority for the Stockholm Convention. Over the years international organisations such as GEF, the World Bank, USAID, Finnida, Danida and several others have contributed to the development of the legal framework for pesticide regulation, as well as to its application. This has involved support for the ministries, national NGOs and civil-society organisations involved. Much of this cooperation has taken place with reference to mutual responsibilities under the Stockholm Convention.

Despite this support, MARENA recently characterised Nicaragua as having 'a strong legal framework for the regulation of chemical substances combined with a weak enforcement capacity'. Apart from the limited capacity for, e.g., reliable monitoring of the level of pesticide residues in food products and water supplies, the inspection of pesticide suppliers is inadequately funded and sporadic. As a consequence, even pesticides which have been prohibited for more than a decade, such as DDT, Toxaphene and Aldrin, may still be obtained from official pesticide suppliers, and, although prohibited, pesticides may also be sold in general stores, where also food is handled and sold. Moreover, according to MARENA, pesticide waste disposal, both of obsolete pesticides and of empty pesticide containers, is still an unresolved problem in Nicaragua.

### **Globalised agriculture accentuates the need for strong international environmental conventions**

In 2010, the Chinandega farm workers took to the roads again, this time heading towards the Managua headquarters of the Pellas Group, a conglomerate of companies in Central America and the United States owned by the Nicaraguan Pellas family.

The workers claim that the high and growing incidence of chronic kidney disease is associated with working on the sugar plantations owned and operated by the San Antonio Mill, which is part of the Pellas conglomerate. This claim may not be exaggerated. According to Bingham and Monforton (see further readings), experiments undertaken as early as in 1961 on rats, guinea pigs and rabbits showed significant toxic effects from exposure to DBCP – not only antispermatogenic effects, which later led to the ban on DBCP in the United States, but also kidney damage. Bingham was the US Assistant Secretary of Labour



'Nemagon victims' marching in protest. © AP, Esteban Felix, 2005.

and Occupational Safety and Health in 1977 when DBCP was first associated with male sterility.

The use of DBCP was banned in Nicaragua in 1993, but as it is a persistent organic pollutant, it may still be found, for example, in the water used in households and for irrigation on the vast sugarcane plantations. The authorities that are formally responsible for monitoring water quality do not have certified laboratories, and no systematic measurements take place. However, in 2006, researchers from the Centre for Water Resources Research (CIRA), Universidad Nacional Autónoma de Nicaragua-Managua, examined samples from fifteen drinking-water wells in Chinandega. They found that all fifteen wells contained DBCP residues, in most cases in combination with other pesticide residues such as Hexachlorobenceno (BHC), Dieldrin and DDT.

Meanwhile, apparently the jury is still out with respect to the cause of the growing incidence of chronic kidney disease. In the media, the disease is alternately labelled the 'silent killer', a 'mystery disease' and an 'epidemic'. In addition to and sometimes even instead of exposure to DBCP residues, long working hours, de-hydration and consumption of locally fabricated liquor – conditions which for generations have characterised work and life on and around sugarcane plantations in many parts of the world – are also mentioned as possible causes.

At a United Nations summit of health ministers, El Salvador's Minister of Health recently called for chronic kidney disease to be included in the list of top chronic illnesses in the



Americas, hoping to attract UN funding which would enable independent studies of the disease. However, the call faced opposition from the US delegation and was not accepted.

Should chronic kidney disease become recognised as a work-related health hazard, it would be inconvenient first of all for the Nicaraguan sugar mills, which have begun to catch glimpses of the new and promising business opportunities emerging due to the surging demand for bio-ethanol, particularly from the United States. However, it would also be inconvenient for the World Bank and the International Finance Corporation (IFC), as they have provided substantial loans to promote bio-fuel production in Nicaragua, among others to the San Antonio Mill, since 2006.

### **The detrimental consequences of inadequate national and international environmental governance**

The Nemagon case in Nicaragua illustrates the importance of international environmental cooperation and regulation to control the use and harmful effects of persistent pesticides; or rather, as a photographic negative, it illustrates the detrimental – and deathly – consequences of its absence.

The fact that DBCP is used to treat the soil rather than the crop itself implies that the harmful effects are geographically contained in the soil and groundwater on the location of its previous use. Hence, the incentives to develop international regulation are less than for pesticides whose residues are transmitted more widely, for example, through the products they are used to protect when these are traded across borders.

This leaves the harmful effects from earlier use of DBCP as an issue to be dealt with nationally and privately: nation-

“Nicaragua relies on a good legal base for the control of the majority of chemical substances, but due to a lack of human, operational and financial resources, it is not always possible to fully apply the legal framework.”

Ministry of Environment and Natural Resources 2010:58  
(author’s translation).

ally, for example, through the far from always successful attempts of the government to provide safe drinking water to people, as well as the attempts to provide legal protection to DBCP victims; and privately, for example, through the repeated mobilisations, appeals to national and international organisations, allegations and court cases which have unfolded in the wake of the decades of DBCP use in Nicaragua and elsewhere. In the absence of sufficient national capacity to enforce existing legislation, to undertake or contract high-quality independent and systematic environmental monitoring (for instance, of water quality) or to draw on international research on the harmful effects from DBCP exposure, this is an uphill battle.

International cooperation – bilateral as well as multilateral, for example, under the auspices of multilateral environmental conventions such as the Stockholm Convention – has proved its ability to play a crucial role in ‘levelling the battlefield’ and to protect human health and the environment from the effects of hazardous chemicals. At a time when the interest in tropical agriculture is growing sparked by rising food prices and the growing demand for biofuel, attracting new and powerful stakeholders, the voices and destinies of the less powerful victims of pesticide use in Nicaragua remind us that international environmental cooperation is needed today more than ever.

### **FURTHER READING**

- Bingham, E. and C. Monforton. 2013. ‘The pesticide DBCP and male infertility’. In: *Late lessons from early warnings: science, precaution, innovation*. Copenhagen: European Environment Agency. 2013. Chapter 9.
- Envio. 2005. <http://www.envio.org.ni/articulo/2972>.
- The documentary *Bananas* (2010) reports on the court case brought by twelve Nicaraguan farm labourers against Dole and Dow, the fruit company Dole having demanded Dow Chemicals (one of DBCP manufacturers) to continue supplying DBCP also after 1977 (<http://www.bananasthemovie.com/pesticide-lawsuits-%E2%80%93-a-dbc-p-overview>).
- OEHHA-California EPA. 1999. ‘Public Health Goal for 1,2-Dibromo-3-chloropropane (DBCP) in Drinking Water.’ Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. ([http://oehha.ca.gov/water/phg/pdf/dbcp\\_f.pdf](http://oehha.ca.gov/water/phg/pdf/dbcp_f.pdf)).

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