Collaboration between the World Health Organization and the National Institute of Environmental Health Sciences:

Highlights from 30 years of Partnership

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Foreword

Dear Colleagues,

It is with great pleasure that we present to you the highlights of nearly 30 years of collaboration between the National Institute of Environmental Health Sciences and the World Health Organization to promote global environmental health. During this period, the world has witnessed a dramatic transformation, not only in the understanding of the links between environmental chemicals and human health, but also in the knowledge of how to prevent diseases associated with the environment and how to partner with communities to ensure positive and lasting change. There has also been a transformation in the ways that scientific information is shared and communicated; in the 1980s most people had never heard of the internet and it was necessary to publish documents and send them around the world by mail in order to assure that the most up to date information was shared. It often took months from the time a new finding was published until it reached people who needed the information. Today, scientific information circles the globe and reaches scientists, policymakers, and community members on the same date it is released. This document is dedicated to the memories of three individuals who played critically important roles in ensuring the success of this collaborative agreement: Dr David Rall, Dr Thressa Damstra and Dr Jenny Pronczuk de Garbino. It was their hope that in the future the knowledge and information about global environmental health would help people to work towards healthier environments and healthier communities around the world.

Maria Neira
Director
Public Health and Environment
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Executive Summary

For nearly 30 years, the World Health Organization (WHO) and the National Institute of Environmental Health Sciences (NIEHS) have worked together under the auspices of a cooperative agreement to enhance global environmental health through research, training, capacity-building, and information-sharing activities. In advancing activities throughout this exceptional collaborative timeframe, both WHO and NIEHS utilized their respective strengths, capacities, and leadership roles in the interest of advancing global public and environmental health. The earliest years of the collaboration focused on a chemical-specific or target-organ approach, characterized by the production of single-issue Environmental Health Criteria documents. By the late 1990s the organizations moved towards addressing environmental health and chemical safety issues in a more integrated way, taking into account multiple and cumulative exposures and the resulting co-morbidity. The exceptional cooperative activities resulted in increased global attention and innovative research in several emerging topic areas, notably endocrine disrupting chemicals, toxicogenomics and biomarkers, integrated risk assessment methods, and the health of vulnerable populations including children.

History and background

This report does not represent an exhaustive record of all activities covered in the lengthy span of the WHO-NIEHS Cooperative Agreement. Rather, it aims to present in broad terms the rationale for creating the Cooperative Agreement, the approach taken to the work it supported, and how its key activities and outputs adapted to reflect major events and changes in the international policy environment throughout this period. In this way, the overall aims and achievements can be seen across the three decades, and the effects on the wider arena of global chemical safety.

Hundreds of thousands of chemicals circulate widely in the environment, affecting the health of rich and poor alike, in both developed and developing countries. In many ways, these chemicals contribute directly to economic development and productivity, by enhancing countries' capacity to boost their agricultural and industrial production. Many of these chemicals, however, pose severe health risks.

Types of hazard – key examples

- Chemical: Bhopal, India, 1984: 2,000 dead, 8,000 deaths from chronic effects, an estimated 50,000 totally or partially disabled
- Radiation: Chernobyl nuclear reactor explosion, Ukraine, 1986. Estimated 40,000 short-term deaths, half a million exposed to radiation long-term.
- Volcanic action – release of gases and chemical compounds: in 2010 alone, Mount Eyjafjallajøkull in Iceland caused global disruption to air travel for weeks. Mount Merapi's double eruption in Indonesia caused evacuation and loss of livelihood of tens of thousands of poor people.
- Transboundary waste dumping: usually from industrialized countries to developing nations, often in sub-Saharan Africa. A case in Cote d'Ivoire in 2006 resulted in several deaths and 44,000 seeking medical help. Financial implications were estimated at US$130 million.
- Oil spills: Deepwater Horizon 2010, Exxon Valdez 1989, Niger Delta (ongoing)
  In addition to environmental and wildlife damage, and loss of livelihood, the food chain is affected through oil-contaminated zooplankton which are an important source of food for many species of fish and whales.
- Milk contamination, 2008: 50,000 babies affected with kidney stones and renal failure, and 4 deaths, through addition of melamine to infant formula in China.

These may be felt immediately and directly, as in the accident at Bhopal, or in the numerous chemical spills and other industrial disasters that may not make headlines but do cause substantial health damage. Or they may, along with other environmental threats, become a "creeping catastrophe" that insidiously eats away at health security, leading to decreases in national productivity and increases in healthcare needs. For the very poor and vulnerable with few social and economic safety nets, environmental

chemicals can and do spell disability and early death. Examples abound, and those given below are only illustrative of a wide and growing problem.

Despite all precautions, legislation, regulation and international conventions existing in this domain, the continuity of major environmental disasters over decades underscores the need for a strong coordinated global response.

Genesis of the International Programme on Chemical Safety

Following discussions at the seminal 1972 UN Conference on the Human Environment in Stockholm, the World Health Assembly requested WHO to study the problem of long-term strategies to control and limit the impact of chemicals on human health and the environment. This followed increasing recognition that the ever-increasing trade in and use of chemicals could only increase the threats to environmental health both in the present and the future. Therefore, a collaborative approach to a sound and thorough evaluation of their impact was needed, which would have the benefit of avoiding duplication of effort while putting scarce resources to the best possible use.

In 1977, the World Health Assembly therefore requested the Director-General of WHO to examine, in collaboration with appropriate national institutions and international organizations, the possible options for international cooperation in this area. A Programme on Chemical Safety was then implemented, through the establishment of a central unit at WHO HQ in Geneva, to plan and coordinate the work carried out by a network of national and international institutions.

The International Programme on Chemical Safety (IPCS) was initially conceived as a WHO activity; however, the need to ensure close collaboration