

## Conference or Workshop Item (Refereed)

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Contact CEH NORA team at  
[noraceh@ceh.ac.uk](mailto:noraceh@ceh.ac.uk)

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#### WE 038

##### The international panel on chemical pollution, IPCP

M. Scheringer<sup>1</sup>, A.L. Bergman<sup>2</sup>, J. Weiss<sup>3</sup>

<sup>1</sup>ETH Zürich, Zürich, Switzerland

<sup>2</sup>Stockholm University, Stockholm, Sweden

<sup>3</sup>VU University Amsterdam, Amsterdam, Nederland

Hazard and risk assessment of chemicals is a highly complex task, because there are thousands of chemicals and a wide range of effects in numerous species that need to be assessed. Therefore, careful evaluation and interpretation of both the available scientific knowledge and the existing data gaps and uncertainties is essential. This evaluation and interpretation should be focused on the needs of decision makers outside the scientific field. Because every single chemical may pose highly complex questions for the assessment of exposure and effects, additional capacities for work at the interface between science and politics are highly desirable. Here we present a new institution working at this interface, the International Panel on Chemical Pollution, IPCP. The IPCP focuses on chemical pollution problems of global relevance and is a platform where academic scientists can jointly evaluate their findings and collaborate on the transfer of these findings to decision makers. In several existing interface institutions in the field of chemicals assessment, scientists are called in as individuals and/or representatives of their institutions. Often, scientists from academia, government and, in some cases, also industry work together in these interface institutions. Taking a different approach, the IPCP is a platform primarily for academic scientists who want to share their knowledge about certain aspects of chemical pollution problems and want to join a global network that supports them in conveying their knowledge to decision makers at the national and international level. We present the objectives and work approach of the IPCP, also in comparison to other interface institutions, such as the International Programme on Chemical Safety, and provide an overview of the current activities of the IPCP with a focus on communication of scientific results to the public.

#### WE 039

##### PREPARE knowledge exchange initiative: Pharmaceutical Release into the Environment under Pandemic and Regional Epidemics

C. Singer<sup>1</sup>, A.C. Johnson<sup>1</sup>, J. Holmes<sup>2</sup>

<sup>1</sup>Centre for Ecology & Hydrology, Wallingford, United Kingdom

<sup>2</sup>University of Oxford, Oxford, United Kingdom

PREPARE is a Natural Environment Research Council-funded Knowledge Exchange Initiative which is a multi-disciplinary network aimed at providing a foundation of scientific understanding on the fate and effect of widespread pharmaceutical use during a pandemic and epidemic. By bringing together industry and the research community, it is anticipated that the Initiative partners will contribute to a thorough assessment of the risks, a more thorough assessment of the known-knowns and an informed determination of the knowledge gaps. It is the aim of PREPARE to not only identify novel hazards but also to spark innovative solutions and coordinate the research to fill knowledge gaps.

PREPARE has held three workshops that focused on the human and environmental risks posed by widespread antiviral and antimicrobial use during an influenza pandemic. The issue is that during the course of an influenza pandemic, large quantities of drugs are projected to be used to treat cases of influenza and influenza-associated complications. With few exceptions, a large proportion of the ingested pharmaceuticals are excreted from the human body in a biologically-active form to ultimately enter WWTPs and rivers. The antibiotic-component of the pharmaceutical response can be expected to challenge and non-uniformly inhibit the growth of microorganisms within WWTPs on which their treatment effectiveness depends. Whilst this is predicted to reduce the overall organic removal of a WWTP, the greatest risk is the loss of nitrifying microorganisms. Inhibition of the microorganisms responsible for nitrification may lead to accumulation of nitrite nitrogen in the WWTP effluent, a form of nitrogen which is particularly toxic. A loss in WWTP functioning during an influenza pandemic would result in insufficiently treated wastewater entering the receiving rivers, leading to eutrophication, loss of aquatic life, and fish kill. In the case of those rivers which serve as abstraction points for drinking water, as the Thames River does for London, there are immediate implications for the quality of source water for human consumption. In summary, even if we accept the environmental hazards, it is necessary that we be aware of, and plan a response to a pandemic situation where very high drug use is prescribed. The PREPARE network is open to industrial, policy and academic stakeholders.

#### WE 040

##### WILDCOMS

T. Maes<sup>1</sup>, R.F. Shore<sup>2</sup>, M.G. Pereira<sup>3</sup>

<sup>1</sup>CEFAS, Lowestoft, United Kingdom

<sup>2</sup>NERC Centre for Ecology and Hydrology, Lancaster, United Kingdom

<sup>3</sup>Centre for Ecology & Hydrology, Lancaster, United Kingdom

Disease and contaminants can both pose major risks to wildlife and human populations. Disease is a natural driver regulating the dynamics of wildlife populations, but some diseases warrant particular attention because they (i) cause major mortalities that lead to population crashes, (eg., VHD in rabbits), (ii) threaten wildlife species of high conservation concern (for example squirrelpox virus in red squirrels), or (iii) pose a potential threat to Man (eg., rabies, avian influenza). The wildlife Disease & Contaminant Monitoring and Surveillance (WILDCOMS) Network is a collaborative project among the major disease and contaminant monitoring schemes for vertebrate wildlife that operate in the United Kingdom. These schemes are run by various government agencies and laboratories, research centres, institutes, and academia. The overall aim is to establish a network which will foster and facilitate knowledge exchange, harmonisation towards best practice, and productive collaboration between: (i) partner organisations; (ii) surveillance schemes and end-users. It will aim to provide end-users with an integrated overview of environmental disease and contaminant risk. The specific objectives will be to develop the network and use it to address common challenges, specifically maximising dissemination of information to stakeholders and harmonisation towards common operational procedures to facilitate interaction and collaboration.

#### WE 041

##### Nyabondo integrated vector management project

S.S. Imbahale<sup>1</sup>, M. Outa<sup>1</sup>, P. Osire<sup>1</sup>, J.I. Githure<sup>2</sup>, R.W. Mukabana<sup>1</sup>

<sup>1</sup>International Centre of Insect Physiology and Ecology (icipe), Nairobi, Kenya

<sup>2</sup>Research Triangle International, Kigali, Rwanda

Malaria remains a major vector borne disease in many countries in sub Saharan Africa. This is true for Kenya where an integrated vector management program was implemented on Nyabondo plateau to manage mosquito populations with the main goal of interrupting malaria transmission. Malaria mosquitoes spend a considerable part of their life cycle in water. Water-based stages are immobile, hence vulnerable to control measures that target them. Brick making is the main economic activity on Nyabondo plateau. This activity leaves behind numerous pits in which water accumulates to create conducive mosquito breeding habitats. Abandoned fish ponds add to this to aggravate the mosquito problem on the plateau. We combined the biological larvicide *Bacillus thuringiensis israelensis* (Bti) and introduced mosquito-eating fish *Oreochromis niloticus* in abandoned ponds to test its effectiveness for mosquito control in Nyabondo. In addition, because most of these habitats are man-made the involvement of community members through capacity building and knowledge transfer has been implemented as a critical part to ensure sustainability of malaria control measures. Application of Bti within breeding habitats reduced 86.3% of larvae by day 1 and 95% by day 4 when compared with day 0 i.e before Bti was applied. There was a 100% reduction in mosquito larvae within active (stocked with fish) ponds when compared to un-stocked fish ponds (abandoned). Mosquito vector control needs complementary strategies that target both the adult and larval stages. The two main habitats mentioned (brick pits and abandoned ponds) are as a result of human activities and therefore the project will continue to encourage and involve the community in the control measures.

#### WE 042

##### Risk perception analysis of the use of pesticides in rural areas: a study with farmers in Bom Repouso (Brazil)

E. Espindola<sup>1</sup>, A. Espindola<sup>2</sup>, T. Nunes<sup>3</sup>, L. Lopes<sup>4</sup>

<sup>1</sup>University of São Paulo, São Carlos, Brazil

<sup>2</sup>Universidade Federal de São Carlos, São Carlos, Brazil

<sup>3</sup>Universidade de São Paulo, São Carlos, Brazil

<sup>4</sup>UNESP, Araraquara, Brazil

Bom Repouso is localized in Minas Gerais State, Brazil and approximately 50% of its population resides in rural areas, producing potato and strawberry in large scale to support the national demand. However, the intensive use of pesticides by farmers has resulted in undesirable effects after 20 years. How notified by the farmers, cancer and suicide cases are increasing in this region, as such as the environmental problems. Therefore, our hypothesis is that the exposure to pesticides could be recognized as an important environmental risk factor, but farmers underestimate the consequences. Then, we tried to understand how farmers think about and respond to risk in relation to the pesticides, as well as improve the communication of risk information among lay people, technical experts and decision-makers. Methodological instruments included seminars; field studies (2009-2010) to identification of the Preliminary Assessment of Risk and interview with 50 farmers (selected among the 22 neighborhoods from the rural areas), assessing their perception about risks associated to the current production model. Preterit data (obtained in 2005-2008) were also incorporated in the research, which allow us to recognize the social-economical profile of the 1480 farmers and information about local structure. The results showed up the expansion of the agriculture, with considerable effects in social and environmental aspects, which are related to the total absence of planning in the sector and also the manner in which farmers are making their activities. In spite of the low levels of education and that almost all the respondents have never participated in a pesticide education program, farmers (70%) perceive the risks associated with pesticides. Nonetheless, their attitudes (such as the non-use of PPE, inappropriate methods of disposal of empty containers and unsafe use of pesticides) demonstrate total negligence. Also, most of them underestimate the real effect of pesticides and overestimate another one to explain the effects that were observed. Therefore, the continuous use of pesticide results from other aspects, such as cultural, besides the absence of economic and political incentive to improve another way of farming in Bom Repouso. Considering these results is possible to assume that those who promote and regulate health and safety need to understand how people think about risk, because without it, well-intended policies may be ineffective.