

**Safe Planet: the United Nations Campaign for Responsibility  
on Hazardous Chemicals and Wastes**

# Background Note

**Contact**

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Safe Planet: the United Nations Campaign for Responsibility on Hazardous Chemicals and Wastes highlights solutions to the growing problem of harmful substances and hazardous wastes.

This ambitious campaign for ensuring the safety of the environment and human health against hazardous chemicals and wastes shows how each of us can take responsibility for keeping our planet safe.

Solutions are available through initiatives undertaken by the leading global chemicals and waste management instruments – the Basel, Rotterdam and Stockholm conventions.

To raise awareness of these solutions, Safe Planet has invited a group of high-profile artists and musicians, business leaders, film stars, human rights advocates, scientists and sports heroes to speak out about the increasingly heavy burden chemicals and wastes place on human bodies and the environment.

The Safe Planet Supporters come from all corners of the planet. Drawing from their own life experience, they show how all of us can take responsibility to meet the challenge of harmful substances and wastes. Many have pledged to share information about their own chemical body burden to call attention to the need for action.

The challenge of eliminating harmful substances and hazardous wastes from the planet is enormous, while the window for taking decisive action is limited and narrowing. There are over 80,000 chemicals used in industry and commerce and there are several thousand high production volume chemicals. This means many chemicals have the potential to enter people's bodies.

*Safe Planet: the United Nations Campaign for Responsibility on Hazardous Chemicals and Wastes* invites high-profile personages and international experts to engage in a dialogue on how human biomonitoring information can support the Millennium Development Goals and World Summit on Sustainable Development 2020 target to achieve sound management of chemicals and wastes.

In the course of the *Safe Planet Campaign*, selected public figures have volunteered to have their bodies tested and pledged to make their personal chemical “body burdens” public, to raise global awareness of the need for action on the threats posed by hazardous chemicals and wastes.

The Campaign will also highlight the concrete measures and solutions that are available through initiatives undertaken by the three leading global chemicals and waste management instruments – the Basel, Rotterdam and Stockholm Conventions.

# 1. Cooperation and coordination among the Basel, Rotterdam and Stockholm Conventions

The three global Conventions together provide for the life-cycle management of hazardous chemicals and wastes, most comprehensively in the case of persistent organic pollutants (POPs), which are covered by all three treaties. The Conventions address such significant chemical pollutants as dioxins and furans, hazardous pesticides and DDT, polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), PFOS, and the heavy metals arsenic, cadmium, mercury and lead.

Calls for increased synergies amongst the Conventions were made some years ago as governments realized that insufficient cooperation and coordination at the global, regional and national levels were hindering the achievement of the sound management of chemicals throughout their full life-cycle: from their production, trade and use, to their recycling, disposal or destruction.

A major reform in the environmental governance of chemicals and wastes was reached in a series of simultaneously staged meetings of the Basel, Rotterdam and Stockholm Conventions on 22 to 24 February 2010, in Bali, Indonesia. The Parties to the three Conventions adopted an omnibus decision in Bali which provides a ground breaking framework for the achievement of coordination and cooperation at all levels between the legally separate instruments. The framework provides Parties, the secretariats and key partner organizations with a mechanism that will strengthen the impact of the work of the three Conventions at all levels by synergizing their capacities and approaches to chemicals and waste management.

The synergies process constitutes a unique development in the world of Multilateral Environmental Agreements. It reflects a strong collective commitment to evolve towards a common vision for change. It capitalizes on commonalities, while fully respecting the legal autonomy of each Convention; strengthens existing mechanisms, while making them more efficient. Synergies also fosters a regional approach towards the implementation of activities, and enhances national and regional capacities required for Parties to develop a more sustainable approach towards the full implementation of the three Conventions.

## a. Persistent organic pollutants

Persistent organic pollutants (POPs) are a group of toxic chemicals which share particularly hazardous properties. These are:

- Persistence - extreme stability in the environment
- Bio-accumulation and bio-magnification through the food chain due to their lipophilicity (they build up in fatty tissues as POPs are characterized by low solubility in water and high solubility in lipids)
- Propensity to global geographical distribution due to their semi-volatility

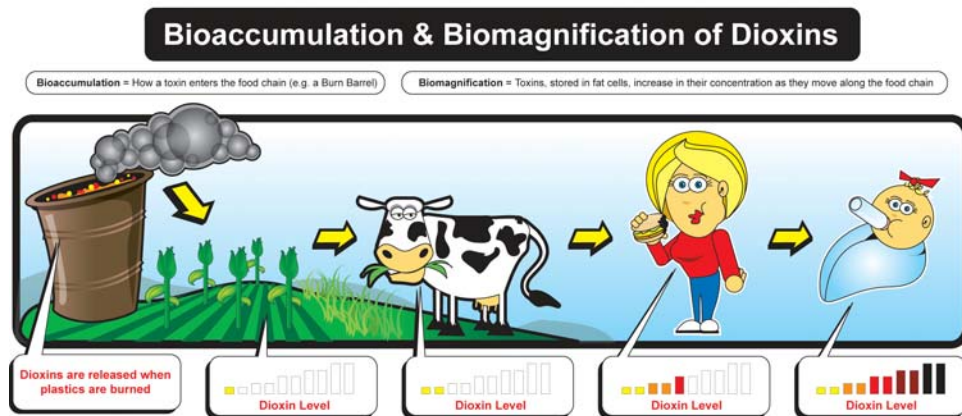
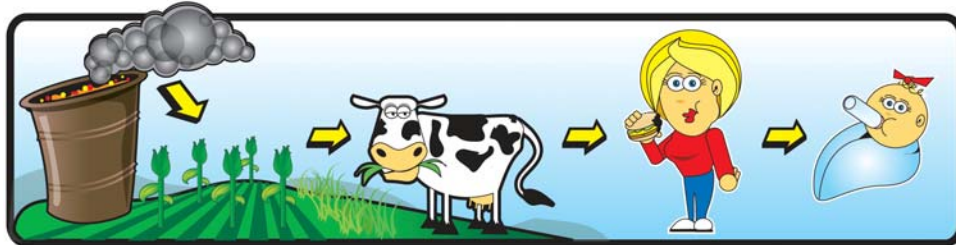
Persistence:

Due to their chemical structure and properties, POPs show a high resistance to degradation caused by photolytic chemical, biological, and chemical agents and remain intact in the environment for long periods of time. For perfluorooctane sulfonate (PFOS) and its related substances, no studies have demonstrated any signs of biodegradation. PFOS does not hydrolyse, photolyse or biodegrade in any environmental condition tested.<sup>1</sup>

Bio-accumulation and bio-magnification:

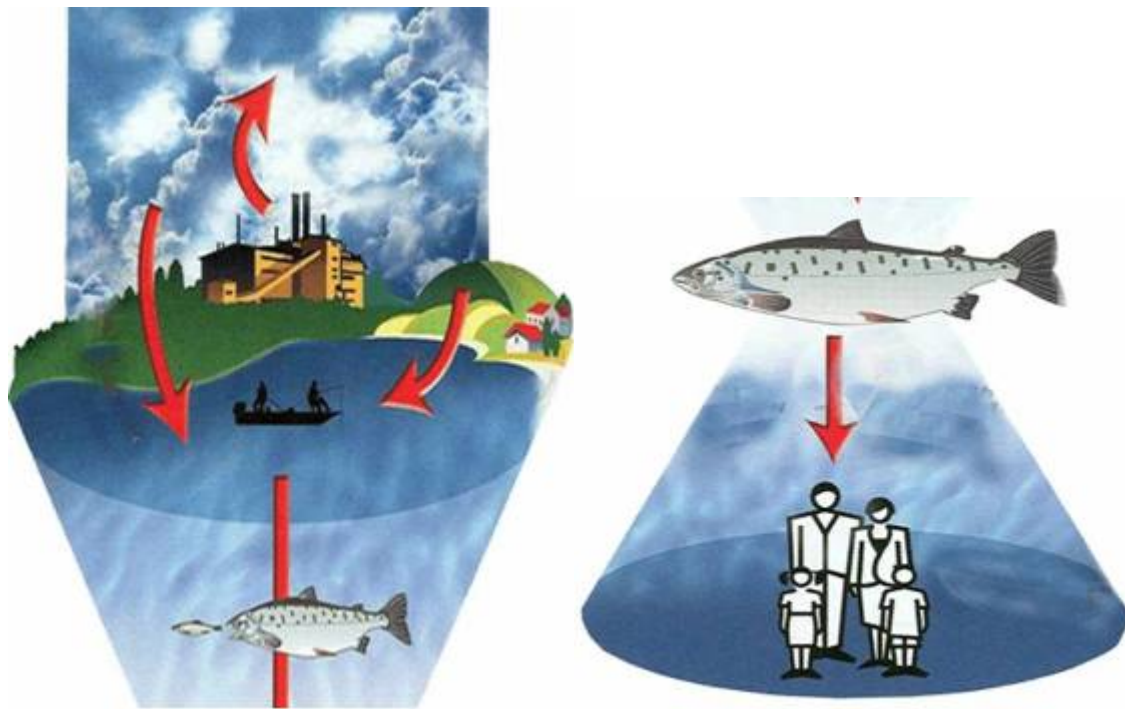
Many POPs enter the food chain and bio-accumulate and bio-concentrate in the fatty tissues of humans and wildlife. These processes lead to bio-magnification, in which tissue concentrations of a contaminant increases as it passes through two or more trophic levels in the food chain. Through this process POPs can bio-magnify several thousand times, from the trace levels to be found in the environment, up to the concentrations to be found in the fatty tissue of organisms being on the top of the food chain.

**Bioaccumulation & Biomagnification of Dioxins**



**Figure 1. Bioaccumulation and biomagnification of dioxins**

<sup>1</sup> OECD, 2002. Co-operation on Existing Chemicals - Hazard Assessment of Perfluorooctane Sulfonate and its Salts, Environment Directorate Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology, Organisation for Economic Co-operation and Development, Paris, November 21, 2002.



**Figure 2. Fate and transport of persistent organic pollutants (POPs)**

Long-range environmental transport:

Moreover, POPs become widely distributed geographically because of a process called the "grasshopper effect". This process, which is often seasonal, involves a repeated pattern of release of a chemical into the atmosphere, such as through evaporation, and its subsequent deposit elsewhere, such as through rainfall. Due to the persistent nature of POPs, the chemicals are spread widely throughout the world through numerous iterations of this cycle. Therefore the POPs are also referred to as "travellers without passports".

As a result of these properties, POPs can be found virtually everywhere on our planet in measurable concentrations, including in our bodies and in human breast milk. There is sufficient evidence that long-term exposure -even to low levels- of POPs leads, among others, to increased cancer risk, reproductive disorders, alteration of the immune system, neurobehavioral impairment, endocrine disruption, genotoxicity and increased birth defects.

It has been recognized that to tackle the problem of POPs, a global effort is needed with the ultimate goal of stopping POPs further entering into the environment throughout our planet.

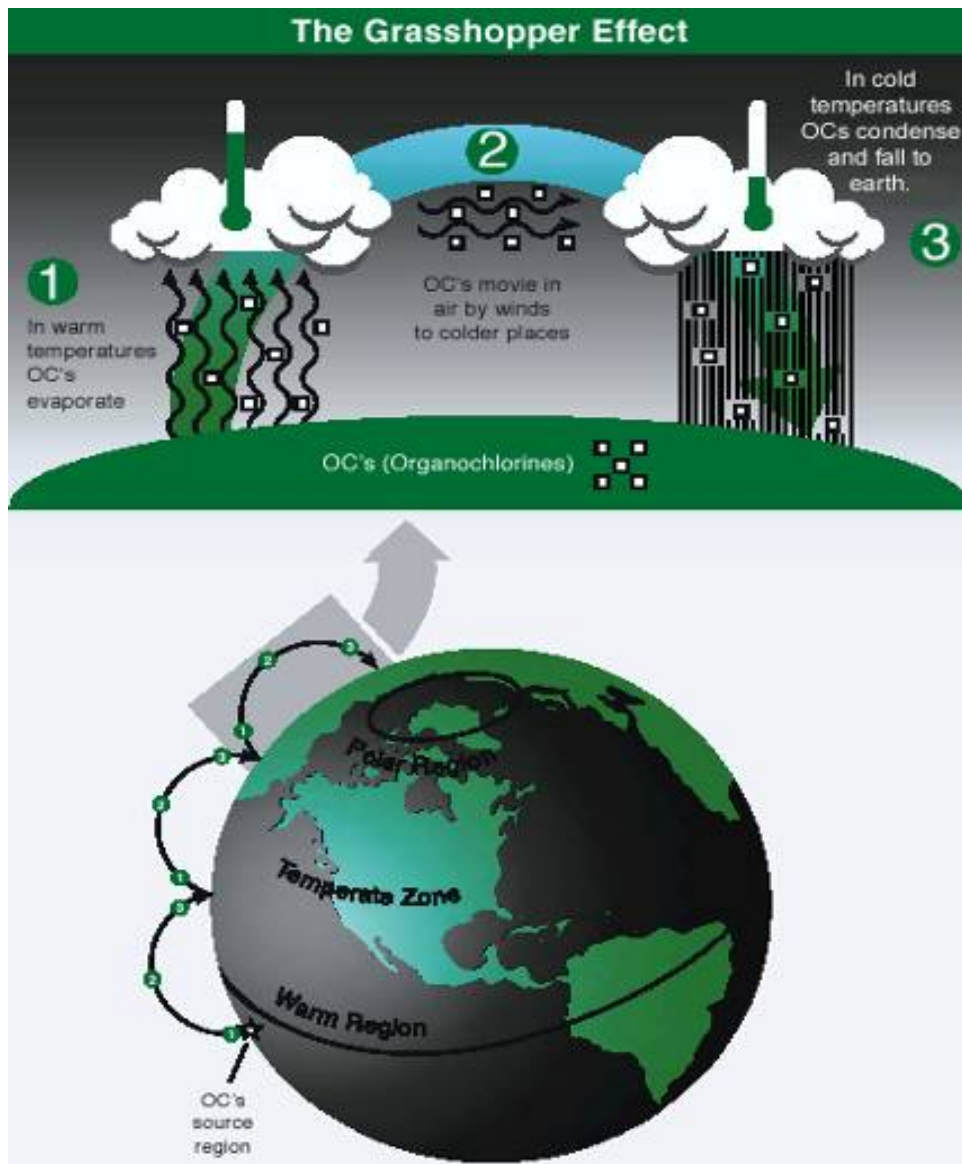


Figure 3. The "Grasshopper Effect" of transboundary pollutants

## b. Stockholm Convention

The **Stockholm Convention on Persistent Organic Pollutants (POPs)** provides a global platform for achieving the ultimate goal of ridding the planet of POPs through a set of measures and tools. The main objective of the Stockholm Convention is protecting human health and the environment from persistent organic pollutants. As of June 2010, 170 countries had committed themselves to this objective.

The Stockholm Convention on Persistent Organic Pollutants was adopted in 2001.<sup>2</sup> The Convention seeks the elimination or restriction of production and use of all intentionally produced POPs (i.e. industrial chemicals and pesticides). It also seeks the continuing minimization and, where feasible, ultimate elimination of the releases of unintentionally produced POPs such as dioxins and furans.

The Stockholm Convention is unique in that it prohibits the production of any new chemicals with POPs characteristics.

Currently 21 POPs are subject to various measures under the Stockholm Convention.<sup>3</sup> Some of them were/are intentionally produced and used as pesticides and/or industrial chemicals. They are subject to elimination or severe restrictions of production and use, with the ultimate goal of their elimination once suitable alternatives become available.

The international community is placing a lot of efforts into the step-by-step phasing out and elimination of PCBs through the *PCB Elimination Network (PEN)* and the finding of suitable alternatives through the *Global Partnership on DDT* to replace DDT, which is still used in some countries for the malaria vector control.

Another group of POPs is unintentionally formed and released from thermal processes involving organic matter and chlorine, as a result of incomplete combustion or chemical reaction.

Parties to the Stockholm Convention are required to take measures to reduce the total releases of unintentional POPs with the goal of their continuing minimization and where feasible, ultimate elimination. Such processes include, besides some large-scale industrial processes, bad waste management practices such as open burning of waste.

The open burning of waste has been identified as a major source of unintentionally released dioxins and furans in many developing countries. The United Nations Environment Programme (UNEP) project to reduce the unintentional production of persistent organic pollutants (POPs) from the open burning of plastic wastes implemented by the NGO *Green Belt Movement* is a good example of how such global problems can be addressed and managed on a local-community level. Only when we understand that we are all concerned will we achieve major improvements and our planet be cleansed gradually of toxic chemicals.

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<sup>2</sup> The Convention entered into force on 17 May 2004. The Convention website is [www.pops.int](http://www.pops.int).

<sup>3</sup> The initial twelve POPs were: aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene, polychlorinated biphenyls (PCBs), DDT, polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF). Since 2009 nine new POPs are also listed: chlordecone, hexabromobiphenyl, lindane, alpha hexachlorocyclohexane, beta hexachlorocyclohexane, tetrabromodiphenyl ether and pentabromodiphenyl ether (found in commercial pentabromodiphenyl ether), hexabromodiphenyl ether and heptabromodiphenyl ether (found in octabromodiphenyl ether), perfluorooctane sulphononic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOS-F) and pentachlorobenzene.

## c. Basel Convention

The **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal** deals with the avoidance and minimization of the generation of hazardous wastes and the prevention of the “transboundary” movement of such waste, which is the movement of such wastes across international frontiers, with certain exceptions. It provides a platform for eliminating products or hazardous substances, which are wastes.

The Basel Convention was adopted in 1989.<sup>4</sup> As of March 2009, the Convention had 173 Parties.

During its first decade, the Convention’s principal focus was the elaboration of controls on the transboundary movement of hazardous wastes and the development of criteria for environmentally sound management of the wastes.

More recently the work of the Convention has emphasized full implementation of treaty commitments, promotion of the environmentally sound management of hazardous wastes, a “life-cycle approach” and minimization of hazardous waste generation.<sup>5</sup>

Wastes from electrical and electronic equipment are of immense concern globally due to the trafficking of “e-waste” from the advanced industrial countries to the countries of the developing world. They are a leading example of a product waste stream which is being addressed by the Convention.

The Basel Convention’s **Mobile Phone Partnership Initiative (MPPI)**<sup>6</sup> and **Partnership for Action on Computing Equipment (PACE)**, aimed at the management of obsolete and used computers, provide examples of concrete efforts to tackle the growing problem of e-waste.

The ability of developing countries and countries with economies in transition to protect human health and the environment from hazardous substances and wastes is limited by their need to deal with poverty and the “classic” development issues, such as access to education, health care and safe housing, fresh and clean water supply and investment in basic and critical infrastructure. Chemical exposures may threaten sustainable development through harm to health and environment, exasperating the challenges of these development issues. The negative impacts of hazardous chemicals and wastes are disproportionately borne by poor communities.

**Private sector initiatives** play an important role in linking sustainable development and sound chemicals management to poverty reduction. The International Chemical Council Associations (ICCA) *Responsible Care* programme promotes sustainability within the chemical industry, including clear expectations that chemical companies operating in the developing world operate in an environmentally sound and socially responsible manner.<sup>7</sup> There is a recognized need to ensure that the commitments of the chemical

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<sup>4</sup> The Convention entered into force on 5 May 1992. The Convention website is [www.basel.int](http://www.basel.int).

<sup>5</sup> Hazardous wastes are those wastes that are: explosive, flammable, poisonous, infectious, corrosive, toxic or ecotoxic.

<sup>6</sup> Mobile Phone Partnership Initiative was launched in 2003. The ninth meeting of the Conference of the Parties to the Basel Convention by its decision IX/8, adopted the Guidance Document on the Environmentally Sound Management of Used and End of Life Telephones (UNEP/CHW.8/2/Add.3, UNEP/CHW.9/11). See also <http://www.basel.int/industry/mppi.html>.

<sup>7</sup> See <http://www.responsiblecare.org>.



industry to protect the environment and human health are honoured throughout the chain of production, consumption, and disposal or destruction of hazardous substances and wastes.

The Basel Convention highlights opportunities to seek synergies between poverty reduction and sound management of chemicals and wastes. It encourages the private sector to engage more fully in harnessing the potential of green chemistry and waste management to the development agenda of the planet's poor.

The Parties to the Convention have launched the **Basel Waste Solutions Circle** to highlight high-visibility projects that contribute concretely to protecting human health and livelihood through waste management.<sup>8</sup>

## d. Rotterdam Convention

The **Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade** promotes shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm. The Convention is the leading global chemical right-to-know instrument. It was adopted in 1998. As of 15 July 2010, the Convention had attracted 134 Parties.<sup>9</sup>

In the 1980s, UNEP and the Food and Agriculture Organization of the United Nations (FAO) developed voluntary codes of conduct and information exchange systems, culminating in the Prior Informed Consent (PIC) procedure introduced in 1989. The Convention replaces this arrangement with a mandatory PIC procedure and information exchange mechanism on hazardous chemicals and pesticides.<sup>10</sup>

The Rotterdam Convention provides a mechanism for countries to consider restricting the use, or banning the import, of a chemical on the grounds of human health and environmental concerns. The Convention does not in itself ban or restrict chemicals in trade.

It is also important in providing a mechanism for exchange of scientific, legal and economic information regarding the hazards, risks, toxicology and ecotoxicology of certain substances. The Rotterdam Convention is therefore a major global platform for exercising the sovereign rights of nations to give or withhold consent to trade in specific chemicals. It provides information to both Governments and the public on certain hazardous chemicals in order to protect human health and the environment.

Information exchange and the accessibility of information are key components of effective implementation of the three chemicals and wastes Conventions. The Conventions are jointly preparing a

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<sup>8</sup> The Basel Waste Solutions Circle was launched in November 2009 in support of the 2008 Bali Declaration on Waste Management for Human Health and Livelihood.

<sup>9</sup> The Convention entered into force on 24 February 2004. The Convention website is [www.pic.int](http://www.pic.int).

<sup>10</sup> The Prior Informed Consent procedure applies to the following 28 hazardous pesticides and 11 industrial chemicals: asbestos (actinolite, anthophyllite, amosite, crocidolite, tremolite), polybrominated biphenyls (PBBs), polychlorinatedbiphenyls (PCBs), polychlorinated terphenyls (PCTs), tris (2,3 dibromopropyl) phosphate and tetraethyl lead (TEL) and tetramethyl lead (TML).

clearing-house mechanism which would serve the information needs and right-to-know demands of the chemical and waste stakeholder communities.

The Rotterdam Convention's prior informed consent (PIC) procedure, which facilitates notification and exchange of information about banned or severely restricted substances between countries, provides a useful model of information exchange from which all three Conventions may draw benefits.

## e. Greater Strength in Sync

The simultaneous extraordinary meetings of the Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions, known as the 'ExCoP', marked a new beginning for the three conventions. The ExCoP was held from 22 to 24 February 2010, in conjunction with the 11<sup>th</sup> Special Session of the Governing Council / Global Ministerial Environment Forum of the United Nations Environment Programme, in Bali, Indonesia, on 24-26 February 2010.

On the occasion of the ExCoP, UNEP and FAO announced the launch of ***Safe Planet: the United Nations Campaign for Responsibility on Hazardous Chemicals and Wastes*** at a special event – *The United Nations Body Burden Forum* – held on 24 February 2010. *The United Nations Body Burden Forum* introduced a test bio-monitoring project which is being conducted by the *Safe Planet Campaign*.

The *Safe Planet Campaign* was endorsed by celebrities from around the globe, including Japanese composer **Ryuichi Sakamoto**, Czech Zoologist **Miroslav Bobek**, and American actors **Ed Begley Jr.** and **Bryan Cranston**.

Messrs. Begley and Cranston issued statements in Bali that they had agreed "to undergo a medical test that will reveal [their] own chemical 'body burden', a snapshot of our exposure to hazardous chemicals and wastes" during the event.

They were joined in pledging to release publicly the results of their chemical body burden by Russian scientist **Olga Speranskaya** and **Yuyun Ismawati of Indonesia**, recipients of the Goldman Environment Prize 2009 for Europe and Islands and Island States, respectively; and **Peter Kenmore**, Co-Executive Director of the Rotterdam Convention (FAO).

H.E. Mr. **Jan Dusík**, Minister of Environment of the Czech Republic, and United Nations Under-Secretary General **Ján Kubiš**, Executive Secretary of the U.N. Economic Commission for Europe, welcomed the launch of *Safe Planet: the United Nations Campaign for Responsibility on Hazardous Chemicals and Wastes*.

Prof. **Wangari Maathai**, the United Nations Messenger of Peace and recipient of the Nobel Peace Prize, also welcomed the launch of the *Safe Planet Campaign*.

Dr. **Nao Badu**, Chairman and Chief Executive Officer of the National Economic and Fiscal Commission, Papua New Guinea, and Ms. **Stine Lise Hattestad Bratsberg**, an Olympic Gold Medalist and advocate for corporate social responsibility, serve as Honorary Co-Chairpersons of the *Safe Planet Campaign*.

## 2. Selected activities of the Safe Planet Campaign

### a. The art exhibition “*Substantialis Corporis Mixti*”

Safe Planet organized an international art exhibition, entitled “*Substantialis Corporis Mixti* (Substantial Form of the Blended Body): the Synergies Exhibition of the Basel, Rotterdam and Stockholm Conventions”, on the occasion of the 18<sup>th</sup> session of the Commission on Sustainable Development in May 2010. The exhibition brought together 10 artists from five countries, including

**Anila Quayyum Agha** (Lahore, Pakistan and Indianapolis, USA)

**Santiago Cárdenas Arroyo** (Bogota, Colombia)

**Barbara Benish** (Horaždovice, Czech Republic)

**Brian Collier** (Kansas City, USA)

**Christopher Edgar** (Ferney-Voltaire, France)

**Chris Jordan** (Seattle, USA)

**Floyd Newsum** (Houston, USA)

**Lynn Randolph** (Houston, USA)

**Miloš Šejn** (Jablonec nad Nisou and Prague, Czech Republic)

**Sharon Sprung** (USA)

**Mark Cervenka** of the University of Houston–Downtown acted as curator of the exhibition, which was hosted by the Czech Government at the historic Bohemian National Hall at the Czech Center in New York.<sup>11</sup>

### b. “We help gorillas”, a project of the Prague Zoo

Safe Planet supported the launch of Prague Zoo’s international project, “We Help Gorillas”, to promote mobile phone recycling and raise awareness of the threats to gorilla populations living in Africa’s Congo Basin. Equipment purchased through the sale of recycled mobile phones was delivered in July 2010 to the Dja Biosphere Reservation in Cameroon.

The ‘We Help Gorillas’ project has spread nationwide across Czech Republic, with 13 zoos now participating, and is a model of public involvement in e-waste recycling being promoted by Safe Planet and the Basel Convention.<sup>12</sup>

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<sup>11</sup> The exhibition catalogue is available from the website of the Rotterdam Convention, the Planet’s leading Chemical Right-to-Know agreement – see [http://www.pic.int/News/CSD18-Substantialis\\_programme\\_final.En.pdf](http://www.pic.int/News/CSD18-Substantialis_programme_final.En.pdf)

<sup>12</sup> For more about the Safe Planet partnership with Prague Zoo in the Basel Convention’s Press Room, see <http://www.basel.int/press/press.html>

The web page of the Prague zoo project is [www.pomahamegorilam.cz](http://www.pomahamegorilam.cz)

### c. The United Nations Body Burden Forums

Safe Planet has organized a series of special media events – United Nations Body Burden Forum – to introduce the Campaign’s human bio-monitoring project.

Human biomonitoring is a method of assessing the toxic chemical burden increasingly borne by the life of our planet. Human body fluids have been used as markers of exposure of humans to certain POPs.

Human milk and blood are both good sample media for assessing POPs exposure in humans. Careful sampling of human fluids, e.g. of maternal blood and breast milk, can show comparable temporal trends in a particular population because they integrate environmental exposure as well as dietary exposure related to different consumption habits.

Information gathered from sampling studies can be used to demonstrate possible temporal trends and regional variations in levels of persistent organic pollutants, and thus show effectiveness of regulations of the use of POPs.

Trained personnel are crucial at the sampling and analytical stages of samples used to detect a populations’ chemical body burden.

The U.S. Centers for Disease Control and Prevention (CDC) released the fourth **National Report on Human Exposure to Environmental Chemicals (National Exposure Report)** in December 2009.<sup>13</sup> The National Exposure Report is the most comprehensive study of human exposure to environmental chemicals to date.

More than 2,400 citizens participated in the CDC sampling exercise. Two hundred and twelve chemical substances were identified in the participants’ body burdens, 75 of which had never before been detected in a representative survey of the United States population.<sup>14</sup> Among these newly found chemical burdens were POPs added as recently as May 2009 to the Stockholm Convention’s annex of chemicals targeted for elimination.

To ensure the highest scientific and ethical standards are maintained, the *SafePlanet Campaign* will incorporate the technical protocols and ethical standards identified in the Global Monitoring Plan endorsed by the Parties to the Stockholm Convention in 2007 and 2009.

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<sup>13</sup> Centers for Disease Control and Prevention. Fourth National Report on Human Exposure to Environmental Chemicals. <http://www.cdc.gov/exposurereport/>. December 2009.

<sup>14</sup> A full listing of the chemicals included in the Fourth Report is available at [http://www.cdc.gov/exposurereport/pdf/NER\\_Chemical\\_List.pdf](http://www.cdc.gov/exposurereport/pdf/NER_Chemical_List.pdf).

## d. Safe Planet Campaign key messages

The *Safe Planet Campaign* seeks to deliver powerful messages about making the planet safe from hazardous chemicals and wastes for all living things. To address the global challenge of hazardous chemicals and waste, the Campaign will share key messages through selected media channels:

- **Safe Planet** – *Keeping the planet safe from hazardous chemicals and wastes is everyone’s responsibility.* It’s our job to advance solutions in every corner of the planet.
- **A green economy needs green chemistry and waste management** – A ‘life-cycle approach’ means caring for the impacts of potentially harmful substances on health and the environment throughout the cycle of production and consumption of products. Design for the environment is an important part of the life-cycle approach.

The Campaign will further communicate themes that demonstrate linkages between sound chemicals and waste management, climate change mitigation and adaptation, biodiversity and poverty reduction:

- **Protecting vulnerable communities from darkening skies** – Climate change accelerates the buildup of toxic chemicals in the Arctic while releasing ever greater loads of POPs to montane and highland regions. It compounds the loss of critical habitats and biodiversity these sensitive ecosystems already suffer. Global warming also extends the range of disease-carrying insects, creating new demands for pesticide use, including DDT.
- **Indigenous peoples, coastal and highland communities, farm workers and children** are placed at even greater risk of chemical exposure under the darkening skies of Climate Change. Wildlife is also vulnerable to increased pesticide loadings into the environment and from continuing degradation of their habitat.

### 3. Safe Planet People

#### a. Honorary Co-Chairs of the Safe Planet Campaign

Dr. **Nao Badu**, Chairman and Chief Executive Officer of the National Economic and Fiscal Commission, Papua New Guinea (Port Moresby, PNG)

Ms. **Stine Lise Hattestad Bratsberg**, Founder and Chief Executive Officer, Pure CSR Consulting (Oslo, Norway)

#### b. Supporters

**Ed Begley, Jr.** (North Hollywood, USA)  
**Miroslav Bobek** (Prague, Czech Republic)  
**Santiago Cárdenas Arroyo** (Bogotá, Colombia)  
**Bryan Cranston** (Los Angeles, USA)  
**Jan Dusík** (Prague, Czech Republic)  
**Yuyun Ismawati** (Nusa Dua, Indonesia)  
**Ryuichi Sakamoto** (Tokyo, Japan)  
**Olga Speranskaya** (Moscow, Russian Federation)  
**Sharon Sprung** (New York, USA)  
**Jeremy Wates** (Bantry, Ireland)

#### c. Advisors and liaisons

##### Advisor, artistic

**Barbara Benish**, MFA (New York University at Prague and ArtMill, Horaždovice, Czech Republic)  
**Mark Cervenka**, MFA (Director, O'Kane Gallery/Associate Professor of Art at University of Houston-Downtown, Houston, Texas, USA)

##### Advisor, communication

**Jana Hajduchova**, brand management (Collonges, France)  
**Henri Monceau**, events (Brussels, Belgium)  
**Stiv Wilson**, new social media (Portland, USA)

##### Advisor, legal affairs

**Amelie Malika Taoufiq**, Attorney-at-law and Legal affairs officer (Joint Convention Services, UNEP, Geneva, Switzerland)

Advisor, management, media relations and production

**Howard Baral** (R.C. Baral & Company, Encino, California)  
**Derik Murray** (Network Entertainment Inc., Vancouver, Canada)  
**Michael Woods** (Haring Woods Studio, London, UK)

Advisor, scientific and technical

**Heidelore Fiedler**, PhD (UNEP/DTIE/Chemicals Branch, Geneva)  
**Tim Hayes**, MSc (Geographer, City of San Jose, California)  
**Katarina Magulova** (Stockholm Convention Secretariat, UNEP, Geneva)  
**Fatoumata Ouane**, PhD (Stockholm Convention Secretariat, UNEP, Geneva)  
**Ibrahim Shafii**, MSEH (Basel Convention Secretariat, UNEP, Geneva)  
**Bert van Bavel**, PhD (MTM Research Centre. Örebro University, Sweden)

Advisor, social media

**Niranjan Fernando**, photography (Colombo, Sri Lanka and New York, USA)  
**TERRE Policy Centre** (Pune, India)  
Vinitaa Apte, producer  
Vikrant Argade, technical support  
Bhushan Jashi, technical support  
**Ted Smith**, Electronics TakeBack Coalition ( San Francisco, California)

Liaisons, major groups

**Liane Crae Soukup**, Community development (Houston, USA)  
**Yvette Issar**, Youth (Nairobi, Kenya and Geneva, Switzerland)  
**Jan-Gustav Strandenaes**, Nongovernmental Organizations (Northern Alliance for Sustainability, Oslo)

Public information and outreach

**Joint Services of the Basel, Rotterdam and Stockholm Conventions** (UNEP, Geneva)  
Nalini Basavaraj, publications  
Lucille Caillot, public information  
Christophe Marchat, media  
Michael Stanley-Jones, strategic partnerships

**Stacy Johnston** (Rotterdam Convention Secretariat, FAO, Rome)  
**Gamini Manuweera** (Stockholm Convention Secretariat, UNEP, Geneva)  
**Elisabetta Tagliati** (Rotterdam Convention Secretariat, FAO, Rome)  
**Paul Whyllie** (Stockholm Convention Secretariat, UNEP, Geneva)  
**Alain Wittig** (Rotterdam Convention Secretariat, UNEP, Geneva)

Special projects

**Frank Moser** (Stockholm Convention Secretariat, UNEP, Geneva)

## 4. Appendix I.

### Proposed Analytes for United Nations Champions Body Burden Forum

In bold: (parent) chemical; in normal font = degradation products/metabolites

#### Group 1: Initial POPs

Chlordane group:     **$\alpha$ -chlordane**  
                           **$\gamma$ -chlordane**  
                          *cis*-nonachlor  
                          *trans*-nonachlor  
                          oxychlordane

DDT group            ***op'*-DDT**  
                          ***pp'*-DDT**  
                          *op'*-DDD  
                          *pp'*-DDD  
                          *op'*-DDE  
                          *pp'*-DDE

-drins:                **Aldrin**  
                          **Dieldrin**  
                          **Endrin**  
                          Endrin ketone

Heptachlor group:    **Heptachlor**  
                          Heptachlor-epoxide *cis*  
                          Heptachlor-epoxide *trans*

**Hexachlorobenzene**

**Mirex**



Toxaphene:           **Parlar 26**  
                               **Parlar 50**  
                               **Parlar 62**

Indicator PCB ( $\Sigma$  PCB<sub>7</sub>):       **PCB 28**  
   **PCB 52**  
   **PCB 101**  
   **PCB 118**  
   **PCB 138**  
   **PCB 153**  
   **PCB 180**

PCDD/PCDF (as WHO1998-TEQ):    PCDD       **2,3,7,8-Cl<sub>4</sub>DD**  
   **1,2,3,7,8-Cl<sub>5</sub>DD**  
   **1,2,3,4,7,8-Cl<sub>6</sub>DD**  
   **1,2,3,6,7,8-Cl<sub>6</sub>DD**  
   **1,2,3,7,8,9-Cl<sub>6</sub>DD**  
   **1,2,3,4,6,7,8-Cl<sub>7</sub>DD**  
   **Cl<sub>8</sub>DD**  
   PCDF:    **2,3,7,8-Cl<sub>4</sub>DF**  
   **1,2,3,7,8-Cl<sub>5</sub>DF**  
   **2,3,4,7,8-Cl<sub>5</sub>DF**  
   **1,2,3,4,7,8-Cl<sub>6</sub>DF**  
   **1,2,3,6,7,8-Cl<sub>6</sub>DF**  
   **1,2,3,7,8,9-Cl<sub>6</sub>DF**  
   **2,3,4,6,7,8-Cl<sub>6</sub>DF**  
   **1,2,3,4,6,7,8-Cl<sub>7</sub>DF**  
   **1,2,3,4,7,8,9-Cl<sub>7</sub>DF**  
   **Cl<sub>8</sub>DF**

dl-PCB as WHO<sub>1998</sub>-TEQ:        non-ortho PCB    **3,3',4,4'-TeCB (PCB 77)**  
   **3,4,4',5-TeCB (PCB 81)**  
   **3,3',4,4',5-PeCB (PCB 126)**  
   **3,3',4,4',5,5'-HxCB (PCB 169)**  
   mono-ortho PCB   **2,3,3',4,4'-PeCB (PCB 105)**  
   **2,3,4,4',5-PeCB (PCB 114)**  
   **2,3',4,4',5-PeCB (PCB 118)**  
   **2',3,4,4',5-PeCB (PCB 123)**  
   **2,3,3',4,4',5-HxCB (PCB 156)**  
   **2,3,3',4,4',4'-HxCB (PCB 157)**  
   **2,3',4,4',5,5'-HxCB (PCB 167)**  
   **2,3,3',4,4',5,5'-HpCB (PCB 189)**

**Group 2: New POPs**

**Chlordecone**

**Pentachlorobenzene**

HCHs:             **$\alpha$ -HCH**  
                       **$\beta$ -HCH**  
                       **$\gamma$ -HCH**

PBDE:            **BDE 47**  
                      **BDE 99**  
                      **BDE 153**  
                      **BDE 154**  
                      **BDE 175**  
                      **BDE 183**

Hexabrominated biphenyls (congeners to be decided)

PFOS/PFOA (congeners to be decided)

**Group 3:** Heavy metals

**Hg** (total and organic), **As**, **Pb**, **Cd**