



GCO

Global Chemicals Outlook

Towards Sound Management of Chemicals



Synthesis Report for Decision-Makers

Copyright © United Nations Environment Programme, 2012

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UNEP would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Environment Programme.

Disclaimer

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations Environment Programme concerning the legal status of any country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of the United Nations Environment Programme, nor does citing of trade names or commercial processes constitute endorsement.



ISBN: 978-92-807-3275-7

Job Number: DTI/1543/GE

Printed by: GPS Publishing

Cover and layout design by: GPS Publishing

Glossary

ACC	American Chemistry Council
BRIICS	Brazil, Russia, India, Indonesia, China, South Africa
CEPIC	European Chemicals Industry Council
DALY	Disability Adjusted Life Year
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
IOMC	Inter-Organization Programme for the Sound Management of Chemicals
ICCA	International Council of Chemical Associations
ILO	International Labour Office
IPEN	International POPs Elimination Network
MEA	Multilateral Environment Agreement
NGO	Non Governmental Organization
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
PCBs	Polychlorinated Biphenyls
POPs	Persistent Organic Pollutants
PRTR	Pollutant Release and Transfer Register
REACH	Registration, Evaluation and Authorization of Chemicals
SAICM	Strategic Approach to International Chemicals Management
SME	Small and Medium-sized Enterprise
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Programme
UNITAR	United Nations Institute for Training and Research
VOC	Volatile Organic Compound
WHO	World Health Organization
WSSD	World Summit on Sustainable Development



Acknowledgements

This synthesis report for decision-makers describes the main findings and conclusions of the full report: ***“Global Chemicals Outlook: Towards Sound Management of Chemicals.”*** The report was developed by UNEP in collaboration with the WHO. It was also developed in collaboration with the OECD and other institutions forming the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) and reflects the work of the Global Chemicals Outlook Steering Committee composed of representatives of governments, private sector, civil society and academia.¹

The Global Chemicals Outlook synthesis report was coordinated by Kaj Madsen and Pierre Quiblier, Chemicals Branch, UNEP, under the guidance of Sylvie Lemmet, Director, Division of Technology, Industry and Economics, UNEP; Tim Kasten, Head, Chemicals Branch, UNEP; Per Bakken, UNEP (retired); Fatoumata Keita-Ouane, Head, Assessment Branch, Division of Early Warning and Assessment (DEWA), UNEP; and Ludgarde Coppens, Programme Officer, DEWA, UNEP. This report is the product of a stakeholder convening process in which Steering Committee members developed framing papers to highlight key questions. Rachel Massey coordinated the activities of the Steering Committee in this first phase of the project. The editing and the publication were coordinated by Cyrille-Lazare Siewe, with the administrative guidance of Ardeshir Zamani both from Chemicals Branch, UNEP. UNEP wishes to thank the Governments of Norway and Sweden for their funding and the following individuals whose efforts made this synthesis report possible.



¹ The Steering Committee met five times over two years. Its mandate was to review the detailed work plan, provide substantive input, and ensure the coherence, consistency and comprehensiveness of the report.

Authors and Co-authors of the Three Chapters:

Chapter I: Trends and Indicators

Rachel Massey* and Molly Jacobs**

* Massachusetts Toxics Use Reduction Institute, University of Massachusetts Lowell

** Lowell Center for Sustainable Production, University of Massachusetts Lowell

Chapter II: Economic Implications of Trends in Chemicals Production, Trade and Use

Louise A. Gallagher

Independent consultant for UNEP Chemicals Branch, DTIE

Contribution to Chapter II from a financial and insurance perspectives: Risks to the Financial Sector from Chemicals

Dr Andrew Dlugolecki

Principal, Andlug Consulting, assisted by Dr Laura Cochran, Deveron Cochran Ltd

Chapter III: Instruments and Approaches for the Sound Management of Chemicals

Ken Geiser* and Sally Edwards**

* Department of Work Environment and Lowell Center for Sustainable Production, University of Massachusetts Lowell

** Lowell Center for Sustainable Production, University of Massachusetts Lowell



Participants in the meetings of the Steering Committee

Governments

Ms. Ingela ANDERSSON, Director, Swedish Chemicals Agency (KemI).

Mr. Christopher BLUM, Scientific Officer, German Federal Environment Agency, International Chemicals Management.

Ms. Maria DELVIN, Senior Advisor, Swedish Chemical Agency (KemI).

Mr. Lars DRAKE, Ph.D., Scientific Advisor, Swedish Chemicals Agency (KemI).

Mr. Idunn EIDHEIM, Director General, Norwegian Ministry of Environment.

Mr. Atle FRETHEIM, Deputy Director General, Norwegian Ministry of the Environment.

Ms. Johanna LISSINGER PEITZ, Policy Assistant, Swedish Ministry of the Environment (KemI).

Ms. Monika LUXEM-FRITSCH, Deputy Head, German Federal Ministry of the Environment, Nature Conservation and Nuclear Safety.

Ms. Abiola OLANIPEKUN, Assistant Director, Nigerian Federal Ministry of Environment.

Mr. Long RHITIRAK, Deputy Director General, Cambodian Ministry of Environment.

Ms. Sezaneh SEYMOUR, Division Director, U.S. Department of State, Division of Air Pollution and Chemicals.

Inter-Organization Programme for the Sound Management of Chemicals (IOMC)

Mr. Pavan BAICHO, Technical Officer, International Labor Office (ILO).

Mr. Mark DAVIS, Programme Coordinator and Chief Technical Advisor, Food and Agriculture Organization (FAO).

Ms. Nathalie DELRUE, Test Guideline Programme, Administrator, Organization for Economic Co-operation and Development (OECD).

Mr. Sebastian GIL, Delegated Representative, European Commission.

Mr. John HAINES, Ph.D., Senior Special Fellow, United Nations for Training and Research (UNITAR).

Mr. Dadan Wardhana HASANUDDIN, Programme Officer, Secretariat of the Basel Convention, United Nations Environment Programme (UNEP).

Mr. Jonathan KRUEGER, Programme Officer, Programmes in Chemicals, Waste and Environmental Governance, United Nations Institute for Training and Research (UNITAR).

Mr. Heinz LEUENBERGER, Director, Energy and Cleaner Production Branch, United Nations Industrial Development Organization (UNIDO).

Ms. Katarina MAGULOVA, Programme Officer, Secretariat of the Stockholm Convention, United Nations Environment Programme (UNEP).

Mr. Tomas MARQUES, Associate Programme Officer, United Nations Environment Programme (UNEP), Business and Industry Unit, Sustainable Consumption and production Branch, DTIE.

Ms. Helen MCCARTHY, Delegated Representative, European Commission.

Mr. Michihiro OI, Administrator, Organization for Economic Co-operation and Development (OECD).

Ms. Annette PRUSS-ÜSTUN, Scientist, World Health Organisation (WHO).

Ms. Carolyn VICKERS, Team Leader, Chemical Safety Evidence and Policy on Environmental Health, World Health Organisation (WHO).

Mr. Ron WITT, GRID Manager, United Nations Environment Programme (UNEP) Division of Early Warning and Assessment (DEWA) Global Resource Information Database (GRID), DTIE.

Private Sector

Ms. Birgit ENGELHARDT, Representative to the UN, International Council of Chemical Associations (ICCA).

Mr. Arthur FONG, Program Manager, Chemical Management and Senior Scientist, IBM Corporation.

Ms. Véronique GARNY, Director, Product Stewardship, European Chemicals Industry Council (CEFIC).

Mr. Michael GRIBBLE, Scientific Officer, Science Industries Switzerland (SCGI Chemie Pharma Schweiz), representing ICCA.

Mr. Thomas JACOB, Principal, T.R. Jacobs & Associates, International Council of Chemical Associations (ICCA) and American Chemistry Council (ACC).

Ms. Lena PERENIUS, Executive Director, Product Stewardship, International Council of Chemical Associations (ICCA).



Non Governmental Organizations (NGOs)

Ms. Judith CARRERAS GARCIA, Project Coordinator, Sustainlabour International Labour Foundation for Sustainable Development.

Mr. Joseph DIGANGI, Ph.D., Senior Science and Technical Advisor, International POPs Elimination Network (IPEN).

Mr. David HANHARAN, Ph.D., Director of Global Operations, Blacksmith Institute.

Ms. Lora VERHEECKE, Policy Assistant, International Trade Union Confederation (ITUC).

Academia

Mr. Babajide ALO, Ph.D., Director, Centre for Environmental Human Resources Development.

Mr. Ricardo BARRA, Ph.D., University of Concepción.

Mr. Hendrik BOUWMAN, Ph.D., Scientific and Technical Advisory Panel of the GEF, School of Environment Sciences and Development
North-West University.

Mr. Richard CLAPP, Ph.D., Professor, Boston University School of Public Health.

Mr. Leonardo TRASANDE, Ph.D., Faculty Member in Pediatrics and Environmental Medicine and Health Policy, New York University.

Consultants

Mr. Thomas CONWAY, Ph.D., President, Resource Future International.

Mr. Andrew DLUGOLECKI, Ph.D., Principal, Andlug Consulting.

Ms. Louise A. GALLAGHER, PhD., Consultant, Chemicals Branch, DTIE, United Nations Environment Programme (UNEP).

Mr. Kenneth GEISER, Ph.D., Co-director Lowell Center for Sustainable Production and Professor of Work Environment, University of Massachusetts Lowell.

Ms. Khanam JAUHAN, Consultant, Chemicals Branch, DTIE, United Nations Environment Programme (UNEP).

Ms. Sharon KHAN, Consultant, Chemicals Branch, DTIE, United Nations Environment Programme, (UNEP).

Ms. Rachel MASSEY, MPA, MSc, Senior Associate Director and Policy Program Manager, Toxics Use Reduction Institute, University of Massachusetts Lowell.

Mr. Armand RACINE, Consultant, Chemicals Branch, DTIE, United Nations Environment Programme (UNEP).

UNEP Secretariat

Mr. Pierre QUIBLIER, Programme Officer, Chemicals Branch, DTIE, United Nations Environment Programme (UNEP).

Mr. Kaj MADSEN, Senior Programme Officer, Chemicals Branch, DTIE, United Nations Environment Programme (UNEP).

Mr. Cyrille-Lazare SIEWE, Scientific Affairs Officer, Chemicals Branch, DTIE, United Nations Environment Programme (UNEP).



Foreword

The way the world manages chemicals will play a key role in the transition towards an inclusive Green Economy and the realization of a sustainable 21st century.

Governments across the globe recognize that chemicals are essential in areas from medicine and agriculture to consumer goods, clean technologies and overcoming poverty yet chemicals and the pollution linked with their manufacture, use, and disposal come at a cost.

There is increasing recognition among governments, non-governmental organizations and the public that human health and the environment are being compromised by the current arrangements for managing chemicals and hazardous wastes.

These concerns take on a new level of urgency as the quantity and range of new and existing chemicals grow rapidly in developing countries and economies in transition.

At the World Summit on Sustainable Development in 2002, governments agreed on “using and producing of chemicals in ways that do not lead to significant adverse effects on human health and the environment” and set a deadline of 2020 to achieve this goal. This commitment was reaffirmed at the Rio+20 Summit in Brazil in 2012.

This report, *Global Chemicals Outlook*, which was compiled by UNEP working with international experts, is designed to inform governments and industry on trends in chemicals production, use and disposal while offering policy advice aimed at meeting the 2020 goal. It focuses particularly on the challenges and opportunities facing developing nations.



The report, which also supports the work and actions of the three chemical and hazardous waste conventions—Basel, Rotterdam and Stockholm—and the Strategic Approach to International Chemicals Management, demonstrates the dramatic growth in the industry, which has seen global output climb from \$171 billion in 1970 to over \$4.1 trillion today.

The shift in production from developed to developing countries is underscored by China, which today is the largest consumer of textile chemicals with 42% of global consumption, and South Africa, where spending on pesticides has grown by close to 60 per cent since the late 1990s.

The Global Chemicals Outlook states that of the 5.7 million metric tonnes of pollutants released in North America (United States, Canada and Mexico), close to two million were chemicals that are persistent, able to accumulate in humans and animals and are toxic. The report also deemed toxic a further million tonnes of substances that are linked with or have suspected links with cancer.

An important aspect of this new report is the economic analysis that compares the benefits of action to the costs of inaction in terms

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_9403

