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GLOBAL CHEMICALS OUTLOOK II

FROM LEGACIES TO INNOVATIVE SOLUTIONS

IMPLEMENTING THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Global Chemicals Outlook II
From Legacies to Innovative Solutions: Implementing the 2030 Agenda for Sustainable Development

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About the Global Chemicals Outlook II

The first edition of the *Global Chemicals Outlook*, published in February 2013, assembled scientific, technical and socio-economic information on the sound management of chemicals. It covered trends and indicators for chemical production, transport, use and disposal, and associated health and environmental impacts; economic implications of these trends, including costs of inaction and benefits of action; and instruments and approaches for sound management of chemicals.

Decision 27/12, adopted by the Governing Council of the United Nations Environment Programme in 2013, recognized the significance of the findings of the first *Global Chemicals Outlook*, which highlighted the significant increase in the manufacture and use of chemicals globally, their importance to national and global economies and the costs and negative effects on human health and the environment of unsound chemicals management, and made recommendations for future action. Decision 27/12 also requested the Executive Director to continue work on the *Global Chemicals Outlook*, particularly in areas where data were found to be lacking or inadequate, and to enhance transparency through regionally balanced stakeholder involvement, inter alia, with a view to developing in the future a tool for assessing progress towards the achievement of the sound management of chemicals and hazardous wastes, including the existing 2020 goal, taking into account and building upon other existing sources of information.

Resolution 2/7, adopted by the United Nations Environment Assembly in 2016, requested the Executive Director to submit an update of the first *Global Chemicals Outlook*, addressing, inter alia, the work carried out particularly in relation to lacking or inadequate data to assess progress towards the 2020 goal, the development of non-chemical alternatives, and the linkages between chemicals and waste, in coordination with the *Global Waste Management Outlook*, and providing scientific input and options for implementation of actions to reach relevant Sustainable Development Goals and targets up to and beyond 2020. Resolution 2/7 also requested the Executive Director to ensure that the updated *Global Chemicals Outlook* addresses the issues which have been identified as emerging policy issues by the International Conference on Chemicals Management (the governing body of the Strategic Approach to International Chemicals Management) as well as other issues where emerging evidence indicates a risk to human health and the environment.

The second edition of the *Global Chemicals Outlook* has been prepared with substantive contributions from more than 400 experts and under the guidance of a Steering Committee, which provided oversight, strategic directions and guidance on all aspects of the report's development, as well as technical inputs, where applicable. The Steering Committee was composed of representatives from Governments, non-governmental organizations (including civil society, industry/the private sector, and academia) and inter-governmental organizations, with participation from all regions and a wide range of stakeholders.

The *Global Chemicals Outlook II* is complemented by the *Global Chemicals Outlook II Summary for Policymakers* and the *Global Chemicals Outlook II Synthesis Report*. The *Synthesis Report* summarizes key findings and insights of the full report and follows the same five-part structure. It was launched at the fourth session of the United Nations Environment Assembly in March 2019. The shorter *Summary for Policymakers* was tabled as a working document of the fourth session of the United Nations Environment Assembly and is available in all six UN languages.

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Lead authors responsible for the drafting of foundational papers and specific chapters were: Francisco Alpizar, Thomas Backhaus, Nils Decker, Ingo Eilks, Natalia Escobar-Pemberthy, Peter Fantke, Ken Geiser, Maria Ivanova, Olivier Jolliet, Ho-seok Kim, Kelvin Khisa, Haripriya Gundimeda, Daniel Slunge, Stephen Stec, Joel Tickner, David Tyrer, Niko Urho, Rob Visser, Mario Yarto, and Vania Gomes Zuin. Ken Geiser served as coordinating author for Part I. Rob Visser served as coordinating author for Parts II and III. Lead authors for capturing regional perspectives were Babajide Alo, Vera Barrantes,

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A Consultative Meeting for the Preparation of the *Global Chemicals Outlook II* took place in April 2016 in Geneva, Switzerland. It was attended by 70 experts. Subsequently a wide range of stakeholders provided input at five workshops. These consisted of a series of regional expert workshops in March-April 2018 in Nairobi, Kenya (Africa); Frankfurt, Germany (Europe, including Central and Eastern Europe); Panama City, Panama (Latin America and the Caribbean and North America); and Bangkok, Thailand (Asia-Pacific and West Asia), attended by a total of 115 participants; and a global workshop (June 2018, Bonn, Germany) with some 100 participants. Paul Hohnen provided valuable support, including by moderating sessions at several workshops.

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Foreword

Chemicals are part of our everyday lives. From pharmaceuticals to plant protection, innovations in chemistry can improve our health, food security and much more. However, if poorly used and managed, hazardous chemicals and waste threaten human health and the environment.

As the second *Global Chemicals Outlook* lays out, global trends such as population dynamics, urbanization and economic growth are rapidly increasing chemical use, particularly in emerging economies. In 2017, the industry was worth more than US dollars 5 trillion. By 2030, this will double. Whether this growth becomes a net positive or a net negative for humanity depends on how we manage the chemicals challenge. What is clear is that we must do much more.

Large quantities of hazardous chemicals and pollutants continue to leak into the environment, contaminating food chains and accumulating in our bodies, where they do serious damage. Estimates by the European Environment Agency suggest that 62 per cent of the volume of chemicals consumed in Europe in 2016 were hazardous to health. The World Health Organization estimates the burden of disease from selected chemicals at 1.6 million lives in 2016. The lives of many more are negatively impacted.

We have made some progress in managing chemicals through national and stakeholder action, international treaties and voluntary instruments. At the World Summit on Sustainable Development in 2002, countries committed to minimizing the adverse effects of chemicals by 2020. At our current pace, we will not achieve this goal. Considering the expansion of the market, and the associated increase in contamination, we cannot continue to gamble with our health.

Solutions do exist, as the report shows. Sustainable supply chain management, innovations in green and sustainable chemistry, and adopting common approaches to chemicals management can reduce the risks to human health, ecosystems and economies. But a solution is only as good as the will to implement it. Now, more than ever, key influencers such as investors, producers, retailers, citizens, academics and ministers must act. We have the chance to do what needs to be done. We are implementing the 2030 Agenda and developing a future framework for framework for the sound management of chemicals and waste beyond 2020.

We cannot live without chemicals. Nor can we live with the consequences of their bad management. My hope is that this Outlook inspires us all to increase our efforts to safely capture the benefits of chemistry for all humanity.

Joyce Msuya
Acting Executive Director
UN Environment

Key findings

The global goal to minimize adverse impacts of chemicals and waste will not be achieved by 2020. Solutions exist, but more ambitious worldwide action by all stakeholders is urgently required.

1. The size of the global chemical industry exceeded United States dollars 5 trillion in 2017. It is projected to double by 2030. Consumption and production are rapidly increasing in emerging economies. Global supply chains, and the trade of chemicals and products, are becoming increasingly complex.

2. Driven by global megatrends, growth in chemical-intensive industry sectors (e.g. construction, agriculture, electronics) creates risks, but also opportunities to advance sustainable consumption, production and product innovation.

3. Hazardous chemicals and other pollutants (e.g. plastic waste and pharmaceutical pollutants) continue to be released in large quantities. They are ubiquitous in humans and the environment and are accumulating in material stocks and products, highlighting the need to avoid future legacies through sustainable materials management and circular business models.

4. The benefits of action to minimize adverse impacts have been estimated in the high tens of billions of United States dollars annually. The World Health Organization estimated the burden of disease from selected chemicals at 1.6 million lives in