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THE WORKING PARTY ON CHEMICALS, PESTICIDES AND BIOTECHNOLOGY

WORKSHOP REPORT: OECD WORKSHOP ON SOCIOECONOMIC IMPACT ASSESSMENT OF CHEMICALS MANAGEMENT

Experiences, methods and information requirements for quantifying the costs and benefits of regulating the risks related to chemicals

Series on Risk Management
No. 32

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This document is also available as a Working Document of the Working Party on Integrating Environmental and Economic Policies coded ENV/EPOC/WPIEEP(2016)21/REV1

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OECD Environment, Health and Safety Publications

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Experiences, methods and information requirements for quantifying the costs and benefits of regulating the risks related to chemicals

IOMC

INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS

A cooperative agreement among FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank and OECD

Environment Directorate
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
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The Inter-Organisation Programme for the Sound Management of Chemicals (IOMC) was established in 1995 following recommendations made by the 1992 UN Conference on Environment and Development to strengthen co-operation and increase international co-ordination in the field of chemical safety. The Participating Organisations are FAO, ILO, UNDP, UNEP, UNIDO, UNITAR, WHO, World Bank and OECD. The purpose of the IOMC is to promote co-ordination of the policies and activities pursued by the Participating Organisations, jointly or separately, to achieve the sound management of chemicals in relation to human health and the environment.

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NOTE FROM THE SECRETARIAT

This document presents a report on the workshop on socioeconomic impact assessment of chemicals management that was held in Helsinki, Finland, 6-8 July 2016. The workshop was organised in co-operation between the Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology and the Working Party on Integrating Environmental and Economic Policies, and was hosted by the European Chemicals Agency, with funding contributions from the European Commission, European Chemicals Agency and American Chemistry Council.

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Experiences, methods and information requirements for quantifying the costs and benefits of regulating the risks related to chemicals

Hosted by the European Chemicals Agency

6-8 July 2016, Helsinki, Finland

Introduction and Purpose of Workshop

1. There is currently significant international interest and various ongoing initiatives related to assessing the socioeconomic impacts of chemical management frameworks and, in particular, of chemicals risk management. To foster the discussion and share experiences on this topic, the European Chemicals Agency (ECHA) hosted a workshop as part of the work of the OECD's Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology and the OECD's Environment Policy Committee's Working Party on Integrating Environment and Economic Policies. The outcomes of this work will support the longer term goal of developing harmonised OECD methodologies for estimating the economic costs and benefits of managing chemicals, in turn supporting the implementation of the Strategic Approach to International Chemicals Management.

2. The workshop aimed to identify the current status of practice and methodologies for cost-benefit analysis of risk management measures and frameworks addressing the human health and environmental impacts of chemicals in OECD Member Countries. It focused on the methods currently used across jurisdictions and intergovernmental organisations.

3. The workshop identified future work and activities in this area at the OECD.

Participants

4. The workshop was attended by experts nominated by Australia, Belgium, Canada, Denmark, Estonia, Finland, Latvia, Germany, Italy, Korea, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States, the European Commission, representatives of the Business and Industry Advisory Committee (BIAC), the World Health Organisation Regional Office for Europe, the United Nations Environment Programme Chemicals and Waste Branch, and NGOs. It was also attended by a number of academics and the OECD Secretariat. The list of the participants is attached to this document as Appendix 1.

Format of the Workshop

5. The workshop consisted of presentations from member countries, industry, NGOs and academics (Agenda attached as Appendix 2, and presentations attached as Appendix 3). Also, four sessions consisted of the presentation of a background paper, by the respective authors, followed by the intervention of 2-3 discussants and an open discussion with the workshop participants. The four background papers were prepared for the workshop. They will be further developed based on the feedback from, and following, the workshop and are expected to be published as OECD working papers.

Introductory Session

6. Eeva Leinala (OECD), Nils Axel Braathen (OECD) and Matti Vainio (ECHA) welcomed the participants. This was followed by a keynote address by Alan Krupnick (Resources for the Future) outlining "BCA: Triumphs and Troubles", focusing on the key challenges and opportunities for the field in the context of chemicals management.

Session 1: Experiences with Socioeconomic Impact Assessment in Chemicals Management

(Chaired by Eeva Leinala, OECD (morning) and Nils Axel Braathen, OECD (afternoon))

7. This session focused on concrete examples of cost and benefit assessment for chemicals in member countries, perspectives from international organisations, industry and NGOs as well as learnings from the work on assessments of the cost of air pollution.

- Overview in analysing the costs and benefits of applications of authorisation and restriction under REACH - Matti Vainio (ECHA)
- Bisphenol A in Thermal Paper - Experiences from a REACH Restriction Case - Thea Sletten (Norwegian Environment Agency)
- U.S. Experience with Socio-Economic Analysis: Formaldehyde Standards for Composite Wood Products - Cody Rice (US EPA)
- Doing CBA for CMP Regulations: Canadian perspectives – Joe Devlin (Environment and Climate Change Canada) and Michael Donohue (Health Canada)
- Costs and benefits of policy instruments to address trichloroethylene - Daniel Slunge (University of Gothenburg)
- Recent valuation research on environmental and human health impacts linked to harmful chemicals - Michael Donohue (Health Canada) and Wambui Kipusi (Environment and Climate Change Canada)
- Cost benefit analysis in the development of policy – Australia - Sara Broomhall (Australian Government Department of the Environment)
- WHO experiences with economic assessments – Frank George (World Health Organisation Regional Office for Europe)
- Feedback on the Global Chemicals Outlook and Cost of Inaction Reports Experience - Pierre Quiblier (United Nations Environment Programme Chemicals and Waste Branch)
- Experience in air pollution regulation: benefit valuation - Mike Holland (Ecometrics Research and Consulting)
- The Cost of Air Pollution: Methods, Results, Conclusions - Rana Roy (Consulting Economist)
- Social Costs of Morbidity Impacts of Air Pollution - Alistair Hunt (University of Bath)
- Socio-economic analysis in REACH - from a NGO perspective - Sonja Haider (ChemSec) and Vito Buonsante (Client Earth)
- Socioeconomic Impact Assessment of Chemicals Management - An Industry Perspective – William Carroll (University of Indiana)

Session 2: Chemical risk assessment as input for the economic valuation of impacts

(Chaired by Jack de Bruijn, ECHA)

8. Weihsueh A. Chiu (Texas A&M University) presented the background paper outlining the type of information available in a typical chemical risk assessment, and reviewing existing methodologies and information requirements for translating the results of a chemical risk assessment into attributable health or environmental impact(s) of a given chemical as input for an economic evaluation.

9. Cody Rice (US EPA) and Leo Trasande (New York University) provided feedback on the paper as discussants, prior an open discussion with all participants.

Session 3: Economic valuation of chemicals' impacts on health and the environment

(Chaired by Cody Rice, US EPA)

10. Anna Alberini (University of Maryland) presented the background paper discussing methodologies and information requirements for estimating the economic value of a given impact, including the strengths, weaknesses and uncertainties of the methodologies. The paper discussed the various values that can be of relevance, and the willingness-to-pay for avoiding the different impacts. Further, the paper briefly discussed the methods and information of estimating costs of complying with policy measures to limit a given environmental or human health impact.

11. Rana Roy (Consulting Economist), Mike Holland (Ecometrics Research and Consulting) and Christoph Rheinberger (ECHA) provided feedback on the paper as discussants, prior to an open discussion with all participants.

Session 4: Transferring/Extrapolating monetised impacts from one chemical to other chemicals

(Chaired by Stavros Georgiou, Health and Safety Executive, UK)

12. Ståle Navrud (Norwegian University of Life Sciences) presented the background paper reviewing existing methodologies for transferring/extrapolating the monetised value of human health and environmental impacts from one chemical to another chemical or many chemicals.

13. Alistair Hunt (University of Bath) and Michael Donohue (Health Canada) provided feedback on the paper as discussants, prior to an open discussion with all participants.

Session 5: Quantifying regulatory efficacy of risk management activities

(Chaired by Joe Devlin, Environment and Climate Change Canada)

14. Susan Dudley (George Washington University) presented the background paper focusing on quantifying regulatory efficacy of risk management activities. How does one measure and compare the actual costs and benefits to those predicted at the time of regulation, and, ultimately, relate those back to whether or not they helped to achieve the specific human health and environmental policy objectives that the risk management measure was intended to address?

15. Sonja Haider (ChemSec) and Kevin Flowers (EU Commission) provided feedback on the paper as discussants, prior to an open discussion with all participants.

Session 6: The costs of regulatory action in chemicals impact assessment

(Chaired by Michael Donohue, Health Canada)

16. This session focused on a series of presentations outlining examples of the costs of chemicals management regulatory actions.

- Reach and Chromates: Strategic and Economic Challenges for an International Operating Company like Tata Steel - Hans Dommershuijzen (Tata Steel)
- The Cost of EU Regulation of Siloxanes (D4/D5) in Personal Care Products & Dichlorobenzene Toilet Blocks - Stavros Georgiou (Health and Safety Executive, UK)
- Towards benchmarks for the proportionality assessment of PBT/vPvB restrictions and authorizations - Frans Oosterhuis (VU University, Amsterdam)
- Cost of authorisation to EU industry - Hugo Waeterschoot (Eurometaux)

Sessions on Outcomes, Implications and Future Work

17. Two sessions were held to discuss outcomes and implications of the workshop sessions. On Day 2, Nils Axel Braathen, OECD, chaired a session on workshop conclusions and recommendations for OECD's future work on valuing chemicals impacts on human health and the environment. This was an initial discussion of possible future activities that carried over to the next day's closing session where Eeva Leinala, OECD and Matti Vainio, ECHA chaired a session on the recommendations and scope of future work at the OECD following from the workshop.

Highlights of Key Themes and Messages from the Workshop

18. The above sessions led to many lively discussions, whose messages and themes intertwined over the 3-day workshop. Delegates welcomed the progress achieved to date in the field of SEAs, especially in regard to the impact of air pollution, and looked forward to working towards the further application of SEAs in regard to the impact of chemicals. The highlights of these discussions are grouped and a brief summary is provided here. It is not the intent of this summary to capture the entirety of the discussions at the workshop. Also, the input from the discussions at the workshop will be reflected in the background papers that will be published.

Challenges and Opportunities for Socio-Economic Assessment for Chemicals

19. The conduct of an SEA for chemicals is a challenge for both science and economics. This challenge is often augmented by a lack of information on not only the impacts of chemicals on human health and the environment, but also the value to assign the identified impacts. In addition, valuing the benefits of reducing the risk from exposure to a hazard of a chemical also requires consideration of trade-offs because often the hazardous property is what achieves the desired functionalities.

20. However, economic evidence can be a powerful tool to support policy-makers in regulatory decision-making and aid in the communication and justification of actions. It can also facilitate transparency in the decision-making process. Therefore, even with the associated challenges and uncertainties in conducting SEA, it is important to continue the practice and improve the methodologies and information associated in doing so.

Opportunities for Better Communication

21. During the workshop it was emphasised that better communication is required of what socio-economic analysis is in the context of chemicals and why it is done. There is a need to better communicate net benefit, and associated uncertainties, to decision makers at the right level of detail and to improve clarity of communication on SEA to the public.

22. Importantly, several times it was noted that communication between risk assessors and regulatory economists is key to ensure the success of a SEA. This communication should occur both early in the assessment/management process and as feedback loop later, during a cost-benefit analysis conducted after an initial risk assessment is completed.

Risk Assessments & Dose-response assessment for Socio-Economic Assessment (SEA)

23. Discussions highlighted that mapping of regulatory risk assessments to some elements of SEA is promising. However, challenges lie, in particular, in translating the effects seen in animal studies to dose-response functions that are 'representative' for impacts on humans at specific (central tendency) exposure values and that can somehow be valued. Methods have been developed to move dose-response functions based on single point of departure approach to population dose-response functions with confidence intervals; however, these methods are employed less frequently. A good dose-response function from the risk assessment improves ability to value risk management options. For substances that are regulated based on properties of concern from an ecological perspective (e.g. persistence and bioaccumulation, coupled with toxicity), there are often not dose-response functions to link to valuation. In addition, from an exposure perspective, there are challenges in dealing with the potential periodic nature of various exposure scenarios in the context of a SEA.

24. Where (potential) risks are identified and further risk management intervention may be needed, SEA should play a role. In those cases very early involvement of different disciplines (risk assessors, epidemiologist, economists, etc.) is crucial to ensure that the right questions are asked and options and limitations of the analysis are clarified upfront.

Opportunities to improve valuation

25. Discussions at the workshop highlighted that there is lack of consistency in methodologies used for valuation (e.g. standardisation of which Value of Statistical Life (VSL) used). It was also recognised that approaches are needed to deal with less than causal evidence, including the possibility of weighting results to reflect uncertainty.

26. There is a need for better consideration of valuation of morbidity, including loss of productivity and of how willingness-to-pay might be derived for chemical properties such persistence and bioaccumulation. To address these areas, more experimental studies that seek to estimate welfare values for various endpoints and in different regions of the world are required:

- Further valuation studies for morbidity endpoints.
  - The endpoints chosen for valuation need to be meaningful in the context of chemicals, linking regulatory endpoints to disease outcomes to communicate in the valuation survey.
  - As there are a large number of endpoints to be valued, there is a need to prioritise endpoints to focus first on the endpoints that would represent most value-added.

- Environmental endpoints have even larger gaps in terms of data, information and methodological needs to inform valuation.
  - E.g. consideration of how to do a valuation study of Persistant, Bioaccumlative and Toxic (PBT) substances.

27. It was noted that a valuation database already exists and practitioners should be encouraged to submit valuation studies for inclusion (EVRI - The Environmental Valuation Reference Inventory https://www.evri.ca). However, pay-for-use of the database may limit some of the use.

Value Transfer

28. During discussions on Value Transfer (VT), it was noted that VT is widely undertaken in a number of policy contexts, though currently limited application in chemicals due to challenges, including:

- difficulty to translate risk assessment outputs to Env/Health welfare endpoints;
- lack of primary valuation studies;
- the frequent need to undertake international value transfer;
- difficulties associated with appropriate scaling of values (related to changes in scope or magnitude of physical change being considered);
- difficulties with addressing temporal stability of values;
- difficulties associated with aggregation (adding up) of values (e.g.one to many chemicals)

29. It was also noted that even though various methods for undertaking VT exist, transfer errors of 25-120% are not uncommon and the acceptability of transfer error depends on the decision-making context.

30. To improve value transfer for chemicals, new primary valuation studies related to chemicals need to be designed with international value transfer in mind, taking into account scaling and temporal challenges.

Opportunities for Furthering the Development of Pragmatic Approaches

31. Given information constraints often present when addressing chemicals, it was emphasised at the workshop that it is important to consider the development and use of pragmatic methods as a means to provide indicative information to decision-makers. This included discussion of break-even analysis, cost-effectiveness valuation approach and proportionality assessment. It was noted that valuation and cost information could be used as a line of information to identify and set priorities for activities.

32. It was also raised that there is often the need to consider alternatives at the socio-economic/regulatory impact assessment stage; however, there may not be available assessments of the alternatives. Therefore, the single-substance approach leads you to sector or group of chemicals at the risk management stage and it may be prudent to consider a group or sector based construct at an earlier stage of the regulatory cycle, if there is a likelihood of regulatory activity and the potential alternatives can be identified at an earlier step.

33. ECHA's restriction and application of authorisation database under REACH is a "living laboratory" of over 200 cost-benefit analyses, analysis of alternatives and chemical safety reports. These should be helpful to other OECD member countries regulating chemicals and could be mined for lessons learned.

Quantifying regulatory efficacy

34. During the workshop, it was agreed that retrospective analysis provides for an opportunity to learn to inform future regulations/policies. This analysis helps to identify key uncertainties that are the most substantial to address in future regulatory/policy design (employing a Value of Information (VOI) approach). It also would help to increase effectiveness by allowing for adjustments to "what really happened" in terms of both cost and benefit estimates.

35. There are challenges in conducting retrospective analysis. These include the need to plan ahead regarding the appropriate scope and indicators so that data can be collected. Also, institutional implementation was seen as a key challenge in terms of incentive for conducting the retrospective analysis (for both the regulator and regulatee), appropriate resourcing and the nature of implementation of any findings for current regulations (business uncertainty, potential regulatory changes, time lag for chemical management vs evaluation timelines). Also, it was noted that that trust between the actors is critical in both the process and its intent for the retrospective analysis to be the most valuable. Finally, many additional factors feed into decision making (societal, political) and these can be difficult to address in a retrospective analysis.

General Opportunities to Improve Cost Benefit Analysis (CBA)

36. Some points were raised during the workshop on how CBA can be improved more generally. It was noted that CBA can be improved by having clear legislative requirements regarding its use/role within the decision-making context and by having clear decision rules are in place that are transparently communicated.

37. As outlined above, there are information and methodological gaps for the conduct of SEA, including at the risk assessment stage. Therefore, the potential impact of information asymmetry needs to be carefully considered in the context of SEA as often benefits that can be monetised have added emphasis over ones that are qualitatively assessed, and this quantification bias can lead do sub-optimal regulation. Therefore, also the presentation of the outcome of the SEAs, especially on how to communicate the uncertainties and the limitations of the performed SEAs, needs careful consideration.

38. There is also a need to improve approaches in dealing with the "unknown costs". Although the calculation of costs to industry of a regulatory action is often considered to be easier to value than the benefits, this does not mean that this is easy. More efforts could be made to improve this area to ensure realistic estimation of costs of risk management, in particular how the costs of switching to alternatives would be estimated.

39. In addition it was noted that other components of socio-economic analyses that could be improved include better consideration of equity of distribution of benefits or costs.

Recommendations for Further Work

40. It was acknowledged that significant methodological progress has been made to assess the costs and benefits of managing risks of chemicals. Still, further work is required, and in this respect the need for better information for the valuation of health and environmental impacts was highlighted. It was recognised that working jointly on these issues would not only reduce the costs to member countries in developing further information, but would also allow learning from one another in the practical application of SEA methodologies, enabling their further development from an applied perspective.

41. Dissemination of the workshop report and the background papers developed for the workshop will be a first step in the identification of challenges and opportunities in advancing the SEA related issues in

chemicals risk management. The two areas outlined below are proposed as initial follow-up activities for the Joint Meeting of the Chemicals Committee and Working Party on Chemicals, Pesticides and Biotechnology, in collaboration with the Working Party on Integrating Environment and Economic Policies. Depending on the outcomes of such initiatives, further areas of collaboration could be sought.

1. **Establishment of a regular, on-going forum to discuss risk management case studies, including risk management approaches and associated socioeconomic assessment, to inform decision-making**

   - Opportunity for sharing experience in chemicals management, including identification and documentation of best practices and practical approaches. Also, possible identification of opportunities for prospective collaborative work.
   - Opportunity to improve linkages in the important interdisciplinary work between risk assessment, risk management and socio-economic analysis including:
     - Awareness-raising of the needs of communities carrying out risk assessment, management and economic analysis
     - Finding ways of improving the communication between different communities to identify best possible risk management option
   - Opportunity to share case studies, to improve learnings. Case studies could be developed from activities in one or more jurisdictions and address:
     - Cost of regulating substances, including the technical and economic feasibility in the Analysis of Alternatives
     - Health and/or environmental impact of regulation, including valuation of impacts
     - Possible learnings for similar regulatory activity in other countries or with similar substances
   - Opportunity to identify common challenges leading to joint information or methodology development

To implement this first activity, as a next step, a follow-up workshop to compare cases drawing upon experience from chemicals already under going risk management activity in more than one jurisdiction is proposed. The workshop could include the following:

   - Develop background papers based on case studies (selected by member countries) to help compare approaches, apply methodologies and learn lessons
     - Select chemicals (possibly grouped by functionality) that member countries have been working on in different jurisdictions (plasticisers/phthalates, PBT/vPvBs, TCE, formaldehyde etc.)
     - Consider a variety of cases (i.e. some may have environmental impacts, some health impacts, some both)
     - The case studies could exemplify situations where you have varying levels of information for either the risk assessment or risk management outcomes, and the resulting cost and valuation estimates that have been used

- Development of a synthesis report that takes into account the background papers and learnings from both the Helsinki workshop and the second workshop.

2. Conduct coordinated valuation studies in relation to morbidity and environmental endpoints relevant to chemicals

2.1 Conduct one or several valuation studies for morbidity endpoints relevant to chemicals in different OECD member countries and possibly partner countries.

- OECD could coordinate the development of the survey instrument with member countries. Member countries would then conduct or commission the survey (with an identical instrument); then OECD could help in the comparison of the valuation results
- The benefits of such an approach include:
  - Improved valuation information for endpoints often observed with chemicals
  - A cost-effective mechanism of obtaining values in a standardised manner across countries and also providing information on potential differences between countries thereby informing transferability of valuations across jurisdictions
  - Could be foundation for longer-term collaboration between different communities carrying out valuations studies.

2.2 Conduct a study on valuation of environmental endpoints

- Environmental impact valuation is very important and still too often neglected. One reason is that there are outstanding questions regarding how environmental endpoints would be valued (if there are no direct impacts to humans). Therefore countries could work collaboratively on this issue with the longer term goal to conduct a valuation study for environmental impacts, in a similar manner as described above for morbidity endpoints.

APPENDIX 1: PARTICIPANTS LIST

OECD Workshop on Socioeconomic impact assessment of chemicals management
Atelier OCDE sur les impacts socio-économiques de la gestion de produits chimiques

Helsinki, Finland, 6-8 July 2016

Australia/Australie

Ms. Sara BROOMHALL	*Director, Chemical Management and Standards Section* *Chemicals and Waste Branch, Dept. of the Environment*
Mr. Andrew MCNEE	*Assistant Secretary, Chemicals and Waster Branch* *Environment Quality Division (EQD), Dept. of the Environment*

Belgium/Belgique

Mr. Benjamin DELCOURT	*REACH, FPS Health, Food Chain Safety and Environment*

Canada

Mr. Michael DONOHUE	*Manager, Environmental Economics,* *Economic Health and Analysis Division* *Health Canada*
Mr. Joe DEVLIN	*Senior Economist, Regulatory Analysis & Valuation* *Economic Analysis Directorate* *Environment and Climate Change Canada*
Ms. Wambui P. KIPUSI	*Head/Policy Advisor, Chemical Management Division* *Industrial sectors, Chemicals and Waste Directorate* *Environment and Climate Change Canada*

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Ms. Dorte LERCHE	*Environmental Protection Agency* *Ministry of Environment and Food of Denmark*

Estonia/Estonie

Ms. Reet PRUUL	*Dept. of ambient air* *Ministry of the Environment of Estonia*

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Ms. Johanna KIISKI	*Senior Officer, Finnish Safety and Chemicals Agency (TUKES)*

Germany/Allemagne

Mr. Philipp HENNIG	*Institute for Occupational Safety and Health (BAuA)*
Mr. Achim HELMEDACH	*Federal Environmental Agency*

Italy/Italie

Ms. Antonella PILOZZI	*Istituto Superiore di Sanità (National Institute of Health)*

Korea/Corée

Ms. Sun Hwa CHUNG	*Counsellor* *Permanent Delegation of the Republic of Korea to the OECD*
Ms. Hye-Jin KIM	*Researcher, Chemical Research Division,* *Environmental Health Research Department, National Institute of Environmental Research(NIER)/Ministry of Environment*

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Ms. Judite DIPANE	*Senior expert* *Pollution Prevention Division, Ministry of the Environment*
Ms. Erika LAGZDINA	*Senior expert (on OECD issues)* *Environmental Protection Department* *Ministry of Environmental Protection and Regional Development*

Netherlands/Pays-Bas

Mr. Coen GRAVEN	*Chemical food safety* *National Institute of Public Health and the Environment (RIVM)*
Mr. Richard LUIT	*Senior. policy advisor REACH/CLP* *Centre for Safety of Substances and Products* *National Institute for Public Health and the Environment (RIVM)*
Ms. Bernadette OSSENDORP	*Head Dept., Food Safety, RIVM*

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Mr. Paul METCALF	*Manager, Strategy and Risk, Strategic and Regulatory Services* *Environmental Protection Authority, New Zealand*

Norway/Norvège

Ms. Thea Marcelia SLETTEN	*Senior Economic Adviser, Norwegian Environment Agency*

Sweden/Suède

Mr. Mattias CARLSSON FENG	*Economist, Swedish Chemical Agency*

Switzerland/Suisse

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Mr. Hugo WAETERSCHOOT	*REACH Advisor, Chemical Managing Division, Eurométaux*
Ms. Ying ZHU	*Chief Operating Officer, REACHLAW*
UN Environment Programme (UNEP)/Programme des Nations Unies pour l'environnement (PNUE)	
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Ms. Eeva LEINALA	*Principal Administrator, Environment Health and Safety Division Environment Directorate*

APPENDIX 2: MEETING AGENDA

Wednesday, 6 July 2016	
Introductory Session	
09:00 – 09:15	Welcome and introduction by OECD and ECHA
09:15 – 10:00	Keynote presentation - Alan Krupnick (RFF)
Experiences with Socioeconomic Impact Assessment in Chemicals Management Chaired by Eeva Leinala, OECD	
10:00 – 11:15	Presentations by countries and jurisdictions, international organisations, and industry, exemplifying their approaches to socioeconomic assessment for chemicals management. Presentations by agencies from different countries/jurisdictions: ➢ Overview in analysing the costs and benefits of applications of authorisation and restriction under REACH - Matti Vainio (ECHA) ➢ Experiences in restricting Bisphenol A - Thea Sletten (Norwegian Environment Agency) ➢ Experiences in regulating Formaldehyde or other US case example - Cody Rice (US EPA).
11:15 – 11:45	**Coffee Break**
11:45 – 13:30	➢ Experiences in cost-benefit analysis of risk management measures; – Joe Devlin and Michael Donohue (Environment and Climate Change Canada and Health Canada) ➢ Assessment of costs and benefits of policy instruments to address trichloroethylene - Daniel Slunge (University of Gothenburg) ➢ Recent valuation research on environmental and human health impacts linked to harmful chemicals; Michael Donohue/Wambui Kipusi (Environment and Climate Change Canada and Health Canada) ➢ Australian experience with cost-benefit analysis in chemicals management - Sara Broomhall (Australian Government Department of the Environment)
13:30 – 14:30	**Lunch**
Experiences with Socioeconomic Assessment for Chemicals Management (cont.) Chaired by Nils Axel Braathen, OECD	
14:30 – 16:00	Presentations by international organisations: ➢ Presentation by WHO – Frank George (WHO Europe) ➢ Presentation by UNEP on Global Chemicals Outlook - Pierre Quiblier - UNEP Chemicals and Waste Branch Learnings from cost-benefit analysis of air pollution regulation: ➢ Experience in air pollution regulation: benefit valuation - Mike Holland (Ecometrics Research and Consulting) ➢ The Cost of Air Pollution - Rana Roy (Consulting Economist)
16:00 – 16:30	**Coffee break**
16:30 – 17:30	➢ Social costs of morbidity impacts of air pollution - Alistair Hunt (University of Bath) ➢ NGO perspective on Socio-economic analysis in REACH authorisation - Sonja Haider (ChemSec) ➢ Industry Perspectives - Dr William Carroll (University of Indiana)
20:30 – 23:30	**Dinner cruise**

Thursday, 7 July 2016	
Chemical risk assessment as input for the economic valuation of impacts Chaired by Jack de Bruijn, ECHA	
09:00 – 11:00	**Background Paper 1** Paper outlining the type of information available in a typical chemical risk assessment, and reviewing existing methods and information requirements for translating the results of a chemical risk assessment into attributable health or environmental impact(s) of a given chemical (or collectively chemicals in use) as input for an economic valuation. ➢ Presentation by Weihsueh A. Chiu (Texas A&M University) ➢ Discussion by Cody Rice (US EPA), Leo Trasande (New York University) Discussion regarding Working Paper 1 topic
11:00 – 11:30	**Coffee Break**
Economic valuation of chemicals' impacts on health and the environment Chaired by Cody Rice, US EPA	
11:30 – 13:30	**Background Paper 2** Paper discussing methodologies and information requirements for estimating/measuring the economic value of a given impact, including the strengths, weaknesses and uncertainties of the methodologies. The paper discusses the various values that can be of relevance, and the willingness-to-pay for avoiding the different impacts. Further, the paper discusses the methods and information of estimating costs and benefits to firms, public entities and households. ➢ Presentation by Anna Alberini (University of Maryland) ➢ Discussion by Rana Roy (Consulting Economist), Mike Holland (Ecometrics Research and Consulting) and Christoph Rheinberger (ECHA) ➢ Discussions regarding Working Paper 2 topic
13:30 – 14:30	**Lunch**
Transferring/Extrapolating monetised impacts from one chemical to other chemicals Chaired by Joe Devlin, Environment and Climate Change Canada	
14:30 – 16:30	**Background Paper 3** Policy makers are interested in estimating the economic value of chemical management frameworks as a whole, not just for individual risk management measures. This paper would review existing methodologies for transferring and extrapolating the economic value of impacts from one chemical to one or more other chemicals. ➢ Presentation by Ståle Navrud (Norwegian University of Life Sciences ➢ Discussion by Alistair Hunt (University of Bath) and Michael Donohue (Health Canada) ➢ Discussions regarding Working Paper 3 topic
16:30 – 17:00	**Coffee Break**
Discussion of the outcomes and implications of the three background papers Chaired by Nils Axel Braathen, OECD	
17:00 –18:00	Workshop conclusions and recommendations for OECD's future work on valuing chemicals impacts.

Friday, 8 July 2016	
Quantifying regulatory efficacy of risk management activities Chaired by UK, Stavros Georgiou	
09:00 – 11:00	**Background Paper 4** This paper will focus on quantifying regulatory efficacy of risk management activities including how one measures and compares the actual costs and benefits to those predicted at the time of regulation, and, ultimately, relate those back to whether or not they helped to achieve the specific human health and environmental policy objectives that the risk management measure was intended to address. It will also address what should be included in such an analysis, how it can be built into the regulatory plan from the outset and how information gleaned from such analysis can inform comparative analyses of future regulatory options. ➢ Presentation of paper by Susan Dudley (George Washington University) ➢ Discussants: Sonja Haider (ChemSec) and Kevin Flowers (EU Commission) ➢ Discussions regarding Working Paper 4 topic
11:00 – 11:30	**Coffee Break**
The costs of regulatory action in chemicals impact assessment Chaired by Health Canada, Michael Donohue	
11:30 – 13:30	This session will focus on the costs of chemicals management regulatory actions. It would include presentations on: ➢ Costs of switching to an alternative technology/substance/material ➢ Cost of compliance/containment/abatement ➢ Cost to consumers apart from costs related to changes in prices Presentations ➢ Reach and Chromates: Strategic and Economic Challenges for an International Operating Company like Tata Steel - Hans Dommershuijzen (Tata steel) ➢ EU regulation of siloxanes and DCB Toilet Blocks - Stavros Georgiou (Health and Safety Executive, UK) ➢ Assessing the proportionality of restriction proposals and authorization applications for persistent, bioaccumulative and toxic (PBT) substances - Frans Oosterhuis (VU University, Amsterdam). ➢ Presentation on cost of authorisation to EU industry, Hugo Waeterschoot (Eurometal)
13:30 – 14:30	**Lunch**
Recommendations and scope for future work at the OECD Chaired by Eeva Leinala, OECD & Matti Vainio, ECHA	
14:30 – 17:00	Two topics will be discussed: ➢ The outcomes and implications of the fourth background paper - workshop conclusions and recommendations for OECD's future work on quantifying regulatory efficacy ➢ The usefulness of a regular experience exchange between OECD member countries and jurisdictions in the spirit of this workshop and identify follow-up actions.