

CO-CHAIRS' SUMMARY¹

Note about commenting: There is widespread confusion about why the secretariat and the Beyond 2020 Co-Chairs are requesting comments on the same document twice. Many do not understand how to add their ideas to this document nor the role their comments will play in developing a draft for review in the early 2017 regional meetings and subsequently at IP2. For this reason, the Co-Chairs and the secretariat might consider some ability to receive comments that result from the SAICM regional meetings. Once SAICM stakeholders understand the use of this modified document as a basis for discussion at IP2, they will be able to provide ideas. This is essential to provide broad input into the process since there is so much confusion about the current July 2017 commenting deadline.

Structure of paper for IP2

The Co-Chairs might consider the following outline for the paper to be considered at IP2:

1. Introduction
2. Vision
3. Objective
4. Scope
5. Governance
6. Measurable objectives in support of Agenda 2030
7. Financing
8. National implementation
9. Adoption of the Beyond 2020 Chemical Safety Framework

Introduction

The fourth session of the International Conference on Chemicals Management (ICCM4), through Conference resolution IV/4, launched an intersessional process to provide recommendations for consideration at ICCM5 on the Strategic Approach to International Chemicals Management (SAICM) and the sound management of chemicals and waste beyond 2020.

ICCM resolution IV/4 specifies that the work of the intersessional process is to be informed by the 2030 Agenda for Sustainable Development, resolution 1/5 of the United Nations Environment Assembly and the outcome document "Strengthening the sound management of chemicals and wastes in the long term".

The present summary sets out the co-chairs' views of the contributions of the participants in the first meeting of the intersessional process on SAICM and the sound management of chemicals and waste beyond 2020 held in Brasilia, Brazil from 7 to 9 February 2017. This summary should be read in conjunction with the official report of the meeting.

While the Co-Chairs' summary is not intended to present a consensus view, in some areas there was a common understanding. The document is solely that of the Co-Chairs and is non-negotiated.

¹ Document to be formally edited.

It is important to note that the discussions at the first meeting of the intersessional process and the Co-Chairs' summary of the meeting are not intended to limit any additional ideas and views to be considered in further discussions on the sound management of chemicals and waste beyond 2020.

The present Co-Chairs' summary will be submitted to all SAICM stakeholders for further input and comments in order for it to further inform the discussions during the intersessional process on SAICM and the sound management of chemicals and waste beyond 2020.

[Note: The Co-Chairs might consider mentioning the papers that IP1 requested that the secretariat prepare for consideration at IP2.](#)

Why a future platform for sound management of chemicals and waste beyond 2020?

This section describes why a future platform for sound management of chemicals and waste beyond 2020 is being considered. This section is further linked to the vision for such a future platform.

Vision

- It should be built on the vision set out in UNEA I/5 and referenced in ICCM resolution IV/4, namely "To achieve the sound management of chemicals throughout their life cycle and of hazardous wastes in ways that lead to the prevention or minimization of significant adverse effects on human health and the environment, as an essential contribution to the three dimensions of sustainable development."²
- It is essential to enhance political awareness and commitment, at the highest levels, in order to meet this vision.

Beyond 2020 Chemical Safety Framework vision:

[The vision of the Beyond 2020 Chemical Safety Framework should be long-term and timeless. Global civil society groups have adopted "Toxics-free Future" as their vision for accomplishing SAICM's goals. This is well understood by the public and similar to the vision of "non-toxic environment" which has been proposed by others. It will be essential to enhance political awareness, commitment and effective implementation at all levels, including the highest levels, in order to meet this vision.](#)

Beyond 2020 Chemical Safety Framework objective:

[The objective of the Framework should incorporate elements of the WSSD goal, SDG12.4, and UNEA I/5. This text effectively combines these sources for an effective long-term objective:](#)

[Achieve the sound management of chemicals and wastes throughout their lifecycle to prevent and minimize adverse impacts on human health and the environment.](#)

² United Nations Environment Assembly resolution I/5 on chemicals and waste – Annex I, paragraph 7: Strengthening the sound management of chemicals and wastes in the long term.

Furthermore, the following elements may be considered:

- It should take into account the SAICM Overall Policy Strategy, the Overall Orientation and Guidance for achieving the 2020 goal of sound management of chemicals, including the 11 basic elements.
- All stakeholders need to prioritize efforts to ensure the 11 basic elements of sound management of chemicals and waste, as set out in SAICM's Overall Orientation and Guidance, exist in all countries.
- The vision may be timeless (not limited to 2030) and aspirational, and linked to measurable objectives and practical targeted actions, including qualitative and quantitative elements.
- It should take into account the 2030 Agenda for Sustainable Development in its entirety and particular goals 3, 6 and 12 recognizing that the sound management of chemicals and waste is an essential prerequisite for sustainable development while respecting the integrated nature of the Sustainable Development Goals.
- Consider efforts, in particular, where we have the largest opportunity to foster change and to have the greatest impact.
- It should be complementary to and foster coordination with the work of, other environmental multilateral agreements or frameworks, whether legally binding or voluntary, while avoiding duplication and overlap and to promote policy coherence at all relevant levels.
- Momentum should build upon strengthening the linkages of chemicals to policy areas of high priority like climate change and gender, amongst others.

What could a future platform for sound management of chemicals and waste beyond 2020 cover?

This section describes what a future platform for sound management of chemicals and waste beyond 2020 could cover. This section is further linked to the scope for such a future platform. Making progress on the scope of the future platform is a priority for the second meeting of the intersessional process.

In considering the *scope*, the following elements may be considered:

Scope

- Scope should consider the 11 basic elements and 6 core activity areas set out in the Overall Orientation and Guidance, as well as the WHO health sector roadmap, as a practical way to reflect on the scope beyond 2020. A roadmap for chemicals and waste could be considered.
- It should include and address the elements on ‘Strengthening the sound management of chemicals and waste in the long-term’ as incorporated in United Nations Environment Assembly (UNEA) resolution 1/5 on chemicals and waste.
- The scope could be broader than the current SAICM, including waste. The scope could be broader than the current SAICM, including the consideration of sectors, prevention and waste.
- The basics of chemicals and waste management systems must remain a priority in those countries - largely in the developing world - that still face basic regulatory challenges, while also considering how to be responsive to emerging issues of concern.

- There are several Sustainable Development Goals where clear connections can be made and where measurable objectives and milestones and supplementary indicators could be developed in support of the 2030 Agenda.
- At the global, regional and national level, the scope could take into consideration, inter alia, linkages to: prevention policies; new emerging issues; climate change; a broadened health agenda; institutional strengthening; the life cycle approach; the potential contribution of sustainable chemistry; sustainability; as well as gender and vulnerable populations, especially indigenous peoples, women, children, and through them future generations.
- Collaborative actions should be fostered on new and emerging issues, particularly issues not currently covered under existing policy frameworks and agreements.
- The Aichi Targets for biodiversity were referenced as a potential model approach.
- Work should be based on relevant scientific data and information and consider key elements of chemicals management systems.
- At this meeting, there was no discussion regarding what type of waste issues are being considered in the scope of the beyond 2020 context.

IPEN comment on scope: The scope of the Beyond 2020 Chemical Safety Framework should maintain the broad scope of SAICM, but the ministerial declaration could slightly widen it to include human rights and explicitly include wastes as part of the lifecycle.

Beyond 2020 Chemical Safety Framework scope

- Environmental, economic, social, human rights, health, and labor aspects of chemical safety.
- Agricultural and industrial chemicals at all stages of their lifecycle including in wastes and products.

Reasons for including human rights

SAICM has already linked chemical safety to human rights through its Dubai Declaration, Overarching Policy Strategy and emerging policy issues. SAICM's ministerial Dubai Declaration commits all stakeholders to human rights, stating that, "*We commit ourselves to respecting human rights and fundamental freedoms, understanding and respecting ecosystem integrity and addressing the gap between the current reality and our ambition to elevate global efforts to achieve the sound management of chemicals.*"³ The SAICM Overarching Policy Strategy (OPS) provides important objectives for human rights, including risk reduction, information, illegal international traffic, technical cooperation and good governance, and notes the importance of pollution prevention as the primary means of achieving the SAICM objective. SAICM emerging policy issues have developed to protect those who are particularly vulnerable to advance human rights in specific areas. For example, the issue of chemicals in products centers on the right to information. The elimination of lead paint advances the right of every child to the highest attainable standard of physical and mental health. Initiatives on nanomaterials and electronics are closely linked with the rights of workers to a safe and healthy workplace. The recent Overall Orientation and Guidance (OOG) provides important "elements" and "activity areas" for advancing human rights. For example, human rights bodies have recognized the need for effective legislation, regulation and enforcement, as well as intersectoral and international cooperation, to protect vulnerable groups from human rights abuses by businesses.⁴

³ UNEP - WHO (2006) Strategic Approach to International Chemicals Management
http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

⁴ Committee on the Rights of the Child, General Comment no. 16.

Governments adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) in October 2015. The Agenda 2030 Declaration resolves, “to protect human rights and promote gender equality and the empowerment of women and girls...”⁵ The Declaration envisages, “A world where we reaffirm our commitments regarding the human right to safe drinking water and sanitation and where there is improved hygiene; and where food is sufficient, safe, affordable and nutritious” and a world, “of universal respect for human rights and human dignity...”⁶ Agenda 2030 calls on businesses to not only innovate but also to protect labor rights, “and environmental and health standards in accordance with relevant international standards and agreements and other ongoing initiatives in this regard, such as the Guiding Principles on Business and Human Rights and the labour standards of the International Labour Organization, the Convention on the Rights of the Child and key multilateral environmental agreements, for parties to those agreements.”⁷ Finally, Agenda 2030 reaffirms the importance of the Universal Declaration of Human Rights and other international instruments relating to human rights and international law.

How could the sound management of chemicals and waste beyond 2020 be realized?

This section describes how a future platform for sound management of chemicals and waste could be realized. This section is connected to governance, new and emerging issues, science-policy interface, financing, sustainable and green chemistry as well as national implementation.

The how will be informed by the independent evaluation of SAICM and should focus on the gaps in reaching the 2020 goal.

Drawing on the 2030 Agenda for Sustainable Development, linkages should be made to other agendas such as biodiversity, oceans and climate change, food and agriculture, health, gender and labour.

In considering the how, the following elements should be taken into account:

Governance

- The voluntary, flexible, multi-sectoral and multi-stakeholder approach, that has been integral to the nature of SAICM, should continue. Voluntary standards, common objectives of protection and codes of practice, to which relevant stakeholders may voluntarily commit for some issues, should also be considered.
- Some participants advocated to explore more elements, as well as potential elements, that would be legally binding. Potential legally binding elements could also be explored.
- Functionally, the design should promote broader participation in general and encourage wider sector participation at all levels (national, regional and global) along with a targeted approach, as an essential means to promote impact, involvement, ownership and commitment.

⁵ United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development, UN General Assembly, A/RES/70/1 http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

⁶ United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development, UN General Assembly, A/RES/70/1 http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

⁷ United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development, UN General Assembly, A/RES/70/1 http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

- There is a need to increase industry engagement, by for example promoting partnership approaches in the future platform and by including the waste and downstream sectors.
- Partnerships should focus on public needs and be in line with agreed principles and values. They should be transparent and accountable; ensure multi-stakeholder involvement; provide an added value; and complement rather than substitute commitments made by governments.
- The future platform needs to link sectors and promote synergies, fill the gaps and coordinate with decision-making bodies of the Participating Organizations of the Inter-Organization Programme for the Sound Management of Chemicals (IOMC), other relevant agencies and organizations. This could include augmenting the current stakeholder-based arrangements for the ICCM (i.e. governments, NGOs and IGOs) to one where the sectors (e.g. agriculture, environment, health and labour) can play a more formal role. There are opportunities to link sectors in implementing the 2030 Agenda for Sustainable Development.
- Measuring progress, including objectives and milestones, and supplementary indicators, in addition to the SDG targets and indicators, as well as a related plan of action including at the national level. The 11 basic elements and 6 core activity areas set out in the Overall Orientation and Guidance are a useful starting point.
- Measurable objectives, as noted in paragraph 10 of ICCM Resolution IV/4, should be considered, including on means of implementation in order to ensure effectiveness.
- Clear milestones would support the capacity to evaluate progress and would ensure transparency.

Governance of the Beyond 2020 Chemical Safety Framework

Key governance features of the Beyond 2020 Chemical Safety Framework include:

- UNEP and WHO at least as UN agency “anchors” for the secretariat
- Beyond 2020 Chemical Safety Framework endorsed by the governing bodies of all IOMC organizations and other relevant international bodies.
- Multi-stakeholder, multi-sectoral
- Integration of the relationship between women and chemical safety
- Effectiveness evaluation
- Reporting on concrete actions to contribute to Agenda 2030
- Implementation guidelines
- Flexibility for possible legally-binding aspects in the future

SAICM’s Overarching Policy Strategy (Paragraph 29) establishes UNEP and WHO to take lead roles in the secretariat, however, WHO has not seconded anyone to the secretariat in several years. The original rationale for having UN agency leads on environment and human health still holds true and both agencies should serve roles in the Framework secretariat. In addition, the governing bodies of all IOMC organizations and other relevant international bodies should endorse the Beyond 2020 Chemical Safety Framework.

SAICM has clearly established the benefits of a multi-stakeholder and multi-sectoral approach. There is broad agreement on continuing this approach and this should be an essential governance element in the new Framework.

The Beyond 2020 Chemical Safety Framework should address and integrate the important relationship between women and chemical safety. Paragraph 18 of the Dubai Declaration on

governance objectives and Paragraphs 16 g and h of the SAICM Overarching Policy Strategy provide further support for special actions on the relationship between women and chemical safety and having a declaration on this topic by female ministers of environment at ICCM5 in 2020 (please see below in the sections on Agenda 2030 and Adoption of the Beyond 2020 Chemical Safety Framework.)

Effectiveness evaluation and reporting are both extremely important for measuring progress and revealing gaps in implementation. However, SAICM is missing effectiveness evaluation and the reporting indicators cannot really assess implementation. This should be addressed in the Beyond 2020 Chemical Safety Framework by utilizing measurable objectives as described below in the section on Agenda 2030.

The possibility of having the Beyond 2020 Chemical Safety Framework develop implementation guidelines should be explored. A current analogy is the model law for lead paint prohibition developed by UN Environment. While not obligatory, it provides a useful template for enacting a national law to prevent further damage to human health and the environment. Various initiatives under the measurable objectives in support of Agenda 2030 (please see below) could also be areas where international standards or guidelines would be useful. The principle advantage would be to accelerate reduction of harm at the national level. They would also provide key fundable, tangible activities that could become part of a national implementation plan and subsequent reporting.

The Beyond 2020 process should include the possibility of legally-binding elements sometime in the future. While the chemicals conventions are extremely useful, there are very large gaps in chemical safety that become lost in priority setting because SAICM is not legally binding. Such legally binding elements could take the form of specific protocols to the framework on issues that are not appropriately covered by existing approaches, such as chemicals in products or plastics, among others.

Finally, consideration should be given to expanding the Montreal Protocol ozone units to serve as chemical units for implementation of SAICM and the chemicals conventions. Ideally, the chemical units would locate chemical safety responsibilities in a single effectively-operated institutional arrangement. The updated chemical units could have a multi-disciplinary nature, including a role in coordination, regulation, financing /mainstreaming, compliance, needs assessment, reporting and others. The units should interface with all stakeholders as well as the regional centers established by the Basel and Stockholm Conventions. The efforts to establish synergies in the chemicals conventions have primarily focused on the secretariats. This proposal focuses on synergies at the national level.

Measurable objectives in support of the 2030 Agenda for Sustainable Development

Since this is one of the only mandated tasks the Beyond 2020 process must complete, this topic should have its own section and focus during the discussions leading to adoption of the Beyond 2020 Chemical Safety Framework.

In adopting SAICM, governments agreed that advancing chemical safety should be viewed as a necessary component of the sustainable development agenda. The diseases and behavior disorders caused by chemical exposures not only cause human suffering, they also retard economic productivity and impose costly additional burdens on a country's health and

education systems. Shortfalls in a country's ability to manage chemicals become barriers that block economic development and poverty reduction initiatives.

The 2030 Agenda for Sustainable Development reaffirms all the principles of the Rio Declaration on Environment and Development and it envisages, "a world free of poverty, hunger, disease and want."⁸ It reaffirms commitments regarding, "the human right to safe drinking water and sanitation"; "improved hygiene"; and a world, "where food is sufficient, safe, affordable and nutritious."⁹ Actions related to chemical safety and toxic chemicals are either referenced or implied in many, if not all of the SDGs. The Agenda also acknowledged that progress made toward achieving these goals should be measurable.

The actions in support of the 2030 Agenda should be clearly measurable with adequate quantitative and qualitative indicators that facilitate a running assessment of the SAICM successes and challenges. Twelve initiatives under the Beyond 2020 Chemical Safety Framework could form contributions to achieving Agenda 2030. These are described below.

Two key initiatives should be considered in the Beyond 2020 Chemical Safety Framework: A Global Alliance to Phase-out Highly Hazardous Pesticides and addressing the relationship between women and chemical safety. Both are intimately linked to the Framework's overall objectives and the SDGs. For more information on these initiatives please Annexes 1 and 2.

The following 12 initiatives could represent an initial group of actions by the Beyond 2020 Chemical Framework to contribute to fulfilment of Agenda 2030.

1. Lead in paint

Relevant SDG(s): 3, 16

The Global Alliance to Eliminate Lead Paint is successfully encouraging companies to stop manufacturing and selling lead paints, encouraging governments to enact regulatory controls, and providing tools to stakeholders to achieve actual change on the ground. Substantial measurable reductions in the manufacture and sales of lead paints have already been achieved and more can be anticipated. These primary prevention achievements translate easily into measurable reductions in lead exposures of future generations, and these in turn, translate into reduced incidents of mental impairments, cardiovascular disease and other non-communicable diseases.

Key measurable objectives

1. By 2020, analytical data on lead in paint from 80 developing and transition countries is publicly available as a contribution to enable all countries to: 1) Establish effective legally-binding regulatory controls by 2022 on lead decorative paints and lead paints for other applications most likely to contribute to children's lead exposure; and 2) Establish effective, legally-binding regulatory controls by 2027 prohibiting the use of lead in paint, varnishes, stains, enamels, glazes, primers or other coatings.
2. By 2025, publicly available monitoring of lead content of paint on the market shows that no new decorative paint or paints for other applications most likely to contribute to childhood lead exposure are being sold.

⁸ United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development, UN General Assembly, A/RES/70/1 http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

⁹ United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development, UN General Assembly, A/RES/70/1 http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

3. By 2027, strategies and guidance on safe management of legacy lead paint have been developed and made publicly available.
4. By 2030, publicly available monitoring shows that no varnishes, lacquers, stains, enamels, glazes, primers or coatings that are being produced, sold, exported, imported or used for any purpose contain lead.

2. Highly hazardous pesticides

Relevant SDG(s): 2, 3, 8

The Dubai Declaration notes that one of the key reasons for taking concerted action on chemical safety concerns is the “dependency on pesticides in agriculture.”¹⁰ In 2015, the ICCM4 adopted Resolution IV/3 establishing Highly Hazardous Pesticides (HHPs) as a SAICM Issue of Global Concern.¹¹ Delegates recognized, “that highly hazardous pesticides cause adverse human health and environmental effects in many countries, particularly in low-income and middle-income countries” and agreed to take concerted efforts to implement a strategy developed by FAO, UNEP, and WHO. Delegates further indicated that this should be done, “with emphasis on promoting agroecologically based alternatives.” FAO and WHO have developed technical criteria to define HHPs and the Pesticide Action Network International has also contributed additional criteria to define them.¹² The Beyond 2020 Chemical Safety Framework can contribute to Agenda 2030 by developing a plan of action to implement this FAO, UNEP, WHO strategy to increase the agricultural productivity and incomes of small-scale food producers while at the same time achieving significant measurable reductions in human and environmental exposures to HHPs through implementation of agroecology. The objectives below would be facilitated by developing a Global Alliance to Phase-out HHPs (please see Annex 1).

Key measurable objectives

1. Identify and make publicly available, environmental and health information on 50 pesticides that should be classified as highly hazardous under the conditions of their ordinary use in 75 developing and transition countries by 2025; 150 countries by 2030.
2. Provide guidance on safer alternatives to HHPs with priority to non-chemical alternatives and ecosystem approaches to sustainable food and fiber production to 50 countries by 2025; 150 countries by 2030.
3. Phase out the manufacture, import, sale and use of 20 highly hazardous pesticides in 50 countries by 2025 and 150 countries by 2030.
4. By 2030, provide assistance to 1,000,000 farmers in 100 countries to enable them to discontinue the use of highly hazardous pesticides while maintaining their agricultural livelihood.

3. Chemicals in products

Relevant SDG(s): 3, 8, 16

The Beyond 2020 Chemical Safety Framework should advance information about chemicals in products through private sector implementation of the agreed chemicals in products

¹⁰ UNEP - WHO (2006) Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

¹¹ UNEP (2015) IV/3 Highly hazardous Pesticides, Report of the International Conference on Chemicals Management on the work of its fourth session, SAICM/ICCM.4/15

¹² See PAN International list of HHPs, December 2016, in <http://pan-international.org/resources/>

programme, monitoring, and by addressing the issue at its source with comprehensive information about chemicals in commerce. Note that a number of lists of chemicals of concern could be useful for further efforts on this topic, including the Substitute It Now (SIN) list¹³ and lists and monitoring results performed by the Danish Consumer Council,¹⁴ among others.

Key measurable objectives

1. Monitor 50 chemicals of concern¹⁵ in consumer products in 75 countries with publicly available results completed by 2025.
2. By 2030, private sector implements the SAICM chemicals in products programme in 150 countries by giving priority to the identification of hazardous chemicals in products within the supply chain and throughout product lifecycle while publicly disclosing all chemicals in products.
3. Private sector publicly provides comprehensive information on adverse effects for all chemicals in commerce by 2030, including mutagenicity, carcinogenicity and adverse effects on the reproductive, developmental, endocrine, immune and nervous systems.

4. Hazardous substances within the lifecycle of electrical and electronic products

Relevant SDG(s): 3, 8, 12

This SAICM emerging policy issue covers design, production and use, and end of life aspects of hazardous chemicals in electrical and electronic products. The issue has focused primarily on electronic waste so far and the Beyond 2020 Chemical Safety Framework should turn its attention to the design and production parts of the lifecycle. Few SAICM issues are as pertinent to the public as this one and more attention and work should be conducted to advance recommendations made by the international workshop mandated by ICCM on hazardous substances within the life cycle of electrical and electronic products, hosted by UNIDO and held in Vienna on 29–31 March 2011.

Key measurable objectives

1. By 2025, assess implementation of the 2011 Vienna recommendations on hazardous substances within the lifecycle of electrical and electronic products in 20 countries designing and/or producing electrical and electronic equipment.
2. By 2025, develop and publicly disseminate a list of chemicals of concern to human health and the environment used in electronics production and products.
3. By 2030, 50 countries enact meaningful right to know regulations for workers producing electrical and electronic equipment, including sub-contractors.

5. Endocrine disrupting chemicals (EDCs)

Relevant SDG(s): 3, 16

EDCs are a global and ubiquitous problem. Exposure occurs at home, in the office, on the farm, in the air we breathe, the food we eat, and the water we drink. Despite this widespread

¹³ <http://chemsec.org/business-tool/sin-list/>

¹⁴ <http://kemi.taenk.dk/english>

¹⁵ Groups of chemicals that might be prioritized include persistent, bioaccumulative and toxic substances (PTS); very persistent and very bioaccumulative substances; chemicals that are carcinogens or mutagens or that adversely affect, inter alia, the reproductive, endocrine, immune or nervous systems; persistent organic pollutants (POPs), mercury and other chemicals of global concern; chemicals produced or used in high volumes; chemicals subject to wide dispersive uses; and other chemicals of concern at the national level. SAICM Overarching Policy Strategy para 9.

exposure, information about EDCs is lacking and difficult to access in developing and transition countries. Regulators cannot identify which substances are EDCs, their presence in media, food, products, etc. is unknown, and in many countries these substances are unregulated. The UNEP / WHO State of the Science report on EDCs outlines the current scientific information and effects on human health and recommends improved testing and reduced exposure.¹⁶

Key measurable objectives

1. By 2020, UN Environment assembles a list(s) of endocrine disrupting chemicals (EDCs) and potential EDCs and sources of exposure from the UNEP/WHO State of the Science report and other sources and makes it publicly available on its website.
2. By 2022, conduct monitoring studies of EDC regulatory measures and EDCs in the environment and products in 4 – 6 developing and transition countries in four UN regions for a total of 16 – 24 countries.
3. By 2030, monitoring and research results are translated into EDC control actions in 5 developed countries and 3 developing and transition countries in 4 UN regions for a total of 17 countries.

6. Nanotechnologies and manufactured nanomaterials

Relevant SDG(s): 3, 16

Among other items, nanomaterials are present in food, cosmetics, household appliances, computers, mobile phones, pharmaceuticals, textiles, ceramics, construction materials, sports equipment, and military weapons, although no publicly available inventory of nanomaterials in products exists.¹⁷ There are many uncertainties about the potential harms of nanomaterials, but policies have been primarily focused on accelerating their use with very limited consideration of toxicity or precautionary approaches.^{18 19 20} The Beyond 2020 Chemical Safety Framework should address the information issue by working to establish a global inventory of nanomaterials. The safety of nanotechnologies and nanomaterials should be considered in synergy with worker safety issues in SAICM, and include health surveillance of workers in the nanotechnology industry.

Key measurable objectives

1. By 2025, establish a living, publicly available global inventory of nanomaterials on the market. The global inventory should include sufficient characterization information on

¹⁶ UNEP, WHO (2013) State of the science of endocrine disrupting chemicals, ISBN: 978-92-807-3274-0 (UNEP) and 978 92 4 150503 1 (WHO) (NLM classification: WK 102)

¹⁷ Foladori G, Invernizzi N, Bejarano F (2012). Social and Environmental Implications of Nanotechnology Development in Latin America and the Caribbean. ReLANS / IPEN/ CMS-UCSB
<http://ipen.org/documents/social-and-environmental-implications-nanotechnology-development-latin-america-and>

¹⁸ Senjen R, Foladori G, Azoulay D (2013). Social and Environmental Implications of Nanotechnology Development in the Asia Pacific Region. NTN (National Toxics Network Australia) / ReLANS (Latin American Nanotechnology and Society Network) / IPEN
<http://ipen.org/sites/default/files/documents/Social%20and%20Enviro%20Implications%20of%20Nano%20Development%20in%20Asia-Pacific.pdf>

¹⁹ Musee N, Foladori G, Azoulay D (2012). Social and Environmental Implications of Nanotechnology Development in Africa
<http://ipen.org/documents/social-and-environmental-implications-nanotechnology-development-africa>

²⁰ Foladori G, Invernizzi N, Bejarano F (2012). Social and Environmental Implications of Nanotechnology Development in Latin America and the Caribbean. ReLANS / IPEN/ CMS-UCSB
<http://ipen.org/documents/social-and-environmental-implications-nanotechnology-development-latin-america-and>

nanomaterials on the market to effectively support research and possible risk reduction measures

2. Conduct biomonitoring and health surveillance of workers handling nanomaterials in 15 countries by 2025; 50 countries by 2030.
3. By 2030, the private sector publicly provides comprehensive and verifiable information on adverse effects for all nanomaterials in commerce, including mutagenicity, carcinogenicity and adverse effects on the reproductive, developmental, endocrine, immune and nervous systems.
4. By 2030, use model legislation to support the development or strengthening of adequate governance and/or regulatory frameworks in 5 countries in 5 UN regions for a total of 25 countries.

7. Environmentally persistent pharmaceutical pollutants (EPPP)

Relevant SDG(s): 3, 7

At ICCM4, environmentally persistent pharmaceutical pollutants – an issue that relates primarily to water pollution – was adopted as a SAICM Emerging Policy Issue. In addition, in the SAICM Global Plan of Action, activity 203 is about evaluating pollutant releases to air, land, and water. More generally, reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials is a centrally important aspect of the sound management of chemicals and wastes. It is also of central importance to the minimization of significant adverse impacts on the environment and human health associated with exposures to hazardous chemicals and wastes. The Beyond 2020 Chemical Safety Framework can therefore further develop future SAICM initiatives and plans of action associated with SDG7.

Key measurable objectives

1. By 2022, develop a global roadmap on how pharmaceuticals can be produced, used and disposed of in a sustainable way, with an emphasis on the quality/rational use of medicines (human and veterinary), preventing microbial resistance and reducing and eliminating pharmaceutical pollution downstream of production facilities.
2. By 2025, establish an inventory of available techniques in waste water treatment/water treatment plants for destroying pharmaceutical pollutants, applicable in all countries.
3. By 2025, establish regular monitoring and public reporting of water sources in 50 countries, including potable water, surface and ground water sources, sewage treatment effluents and sewage sludge for the presence of EPPPs and their bioactive transformation products.
4. By 2025, governments and the private sector apply extended producer responsibility so that the pharmaceutical industry is accountable for all pharmaceutical waste and environmental residues throughout the life cycle of their products.
5. By 2030, achieve clean production and zero discharge of pharmaceuticals into the environment.

8. Zero waste

Relevant SDG(s): 11, 12, 13

SDG11 calls on countries to address municipal and other waste management to make cities sustainable. Zero waste is the approach most consistent with fulfillment of sustainable waste management objectives because it addresses sustainable resource management.²¹

Key measurable objectives

1. By 2025, all major cities containing more than 1 million inhabitants have finalized a waste audit to find out the amount and type of waste being produced, imported, and exported.
2. By 2030, implement segregation of waste at source for reuse, recycling and composting in all major cities of one million inhabitants or more.
3. By 2030, the private sector makes products that do not contain hazardous chemicals and makes products that are durable; reusable; easy to dismantle, repair and rebuild; minimally and appropriately packaged; recyclable and/or compostable at the end of life according to agreed criteria and publicly reports progress periodically.
4. By 2030, facilitate circular economy/cradle to cradle systems without toxic chemical recycling in 100 countries in 5 UN regions.

9. Workplace right to know

Relevant SDG(s): 3, 8, 16

The SAICM Dubai Declaration notes that one of the reasons to take concerted action on toxic chemicals is, “*exposure of workers to harmful chemicals and concern about the long-term effects of chemicals on both human health and the environment.*”²² Workers have a right – often denied them – to have full access to information about the chemicals they use and about the hazards those chemicals pose. The Beyond 2020 Chemical Safety Framework can do much more than has been done in the past to promote initiatives aimed at promoting safe and secure working environments for all workers. In some cases, these might be the promotion of workplace-focused activities that are related to already-identified Emerging Policy Issues and Issues of Global Concern such as: highly hazardous pesticides; nanotechnologies and nanomaterials; hazardous substances in electronics (aimed at preventing toxic exposures to workers both at the point of production and end-of-life waste management and recovery); and chemicals in products.

Key measurable objectives

1. By 2030, ILO Convention 170 ratified and implemented in all countries.
2. By 2030, establish and enforce occupational health and safety regulations that provide meaningful right to know to workers, prioritize prevention, establish exposure limits protective of the most vulnerable populations, and provide equal protection in the workplace and the community in 150 countries.
3. WHO initiates a hazard surveillance program in 75 countries by 2025 to identify agricultural settings where there are particular pesticide exposures and health hazards to workers; 150 countries by 2030.

²¹ Note that SAICM risk reduction objectives include reducing, “*the generation of hazardous waste, both in quantity and toxicity, and to ensure the environmentally sound management of hazardous waste, including its storage, treatment and disposal.*”²¹ Global Plan of action items relevant to waste management including zero waste are outlined in items 68-73, 118, 121, 161-162, 169, 171-172, 187, 234, 258-262, and 272-273

²² UNEP - WHO (2006) Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

4. Conduct biomonitoring and health surveillance of workers handling endocrine disrupting chemicals and nanomaterials in 50 countries by 2025; 100 countries by 2030.
5. By 2025, the manufacturing sector completes an inventory of hazardous chemicals used in manufacturing processes as a baseline for subsequent reduction and publicly reports their chemical footprint periodically.

10. Agroecology

Relevant SDG(s): 2, 3, 4, 5, 6, 8, 12, 13

In 2009, the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) concluded that sustainable development can be promoted through reduced agrochemical inputs and by the use of agroecological management approaches. FAO promotes a paradigm of sustainable crop production intensification (SCPI) that conserves and enhances natural resources, and develops a healthy agroecosystem as the first line of defense against crop pests.²³ At the Conference of the Parties to the Stockholm Convention in May 2013, Parties agreed unanimously to give priority to ecosystem-based approaches to pest control to replace the insecticide endosulfan, which is listed under the Convention for global phase out.²⁴ Finally, in 2015, the ICCM4 adopted Resolution IV/3 establishing Highly Hazardous Pesticides (HHPs) as a SAICM Issue of Global Concern.²⁵ Delegates recognized, “that highly hazardous pesticides cause adverse human health and environmental effects in many countries, particularly in low-income and middle-income countries” and agreed to take concerted efforts to implement a strategy developed by FAO, UNEP, and WHO. Delegates further indicated that this should be done, “with emphasis on promoting agroecologically based alternatives.” The Beyond 2020 Chemical Safety Framework can contribute to Agenda 2030 by developing an initiative focused on agroecology. This initiative would synergize with the issue of concern focused on highly hazardous pesticides but would broaden the issue in keeping with SDG2 and other relevant SDGs.

Key measurable objectives

1. Adopt policies and instruments in 75 countries by 2025 that implement agroecological strategies and practices that reduce synthetic inputs, such as pesticides and fertilizers, and are based on biodiversity and integrated soil nutrition and thus increase agricultural productivity in a sustainable way, strengthen adaption to climate change and mitigate greenhouse gases; 150 countries by 2030.
2. Increase local markets by 50% in 75 countries by 2025 so that the increase in agricultural production and productivity will translate into higher incomes; 150 countries by 2030.
3. Implement policies and their instruments to achieve access to education, land, agricultural extension, and credit equitably between women and men, respecting community cultures and practices in 75 countries by 2025; 150 by 2030.

11. Plastics

Relevant SDG(s): 11, 12, 14

²³ See <http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/en/>

²⁴ Report of the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants on the work of its sixth meeting. SC-6/8: Work programme on endosulfan, point 2. P46. [http://chm.pops.int/Convention/Conference of the Parties\(COP\)/ReportsandDecisions/tabid/208/Default.aspx](http://chm.pops.int/Convention/Conference%20of%20the%20Parties(COP)/ReportsandDecisions/tabid/208/Default.aspx)

²⁵ UNEP (2015) IV/3 Highly hazardous Pesticides, Report of the International Conference on Chemicals Management on the work of its fourth session, SAICM/ICCM.4/15

UN Environment has identified plastic marine pollution and particularly microplastics as a major global environmental threat with estimates suggesting that there will be more plastic in our oceans than fish by 2050.^{26 27} The Beyond 2020 Chemical Safety Framework must play a key role in promoting safer chemicals policy through toxics reduction, elimination and substitution to avoid and ultimately eliminate the adverse toxic impacts embedded throughout the whole life cycle of plastic products and packaging from raw materials extraction, use and final disposal.

Key measurable objectives

1. By 2023, plastics audits in municipal and industrial wastes conducted and results publicly released in 50 countries.
2. By 2025, ban multi-layered, single use plastic packaging and products, particularly sachets, in 150 countries.
3. Private sector funds recycling infrastructure in 75 countries by 2025, 150 countries by 2030.
4. By 2022, initiate a monitoring program for chemicals in microplastics in the world's oceans as an effectiveness evaluation measure for SAICM and the chemical conventions.

12. Women and chemical safety

Relevant SDG(s): 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 16, 17

Despite the fact that women make up roughly half the population and chemical exposures are widespread, the gender aspects of chemical safety have been largely ignored.²⁸ Rio Principle 20 states, "Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development."²⁹ The SAICM ministerial Dubai Declaration commits governments to, "work towards effective and efficient governance of chemicals management by means of transparency, public participation and accountability involving all sectors of society, in particular striving for the equal participation of women in chemicals management."³⁰ Risk reduction measures need to be improved, "to prevent the adverse effects of chemicals on the health of children, pregnant women, fertile populations, the elderly, the poor, workers and other vulnerable groups and susceptible environments."³¹ The Beyond 2020 Chemical Safety Framework should address aspects of the relationship between women and chemical safety in each of its emerging policy issues and issues of concern. These might include lack of data, disparity in environmental assessments

²⁶ Ellen MacArthur Foundation (2016) The New Plastics Economy: Rethinking the New Plastics Economy. <https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics>

²⁷ UNEP (2016) Marine Plastic Debris and microplastics. Global lessons and research to inspire action and guide policy change. <http://www.unep.org/about/sgb/Portals/50153/UNEA/Marine%20Plastic%20Debris%20and%20Microplastic%20Technical%20Report%20Advance%20Copy.pdf>

²⁸ For more information on this topic, please see the IPEN paper, Beyond 2020: Women and chemical safety

²⁹ United Nations Conference on Environment and Development (1992) Rio Declaration on environment and development, <http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid=1163>

³⁰ UNEP - WHO (2006) Dubai Declaration, para 18, Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

³¹ UNEP - WHO (2006) Overarching Policy Strategy, para 7, Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

[and impacts, occupational exposures, and decision-making. For more information on this topic, please see Annex 2.](#)

Key measurable objectives

1. [Make “women and chemical safety” an Issue of Concern.](#)
2. [Address the relationship between women and chemical safety in all SAICM Emerging Policy Issues and Issues of Concern.](#)
3. [Include women and chemical safety components as an integrated component in all IOMC and national projects.](#)

New and emerging issues / Issues of concern

- Ensure an information and knowledge base on chemicals and waste, including early warning systems that can inform work on new and emerging issues.
- Focus on scientific and technical capacity building facing new and emerging issues that require global action on specific chemicals and groups of chemicals, taking into account different needs at the regional level.
- The basics of chemicals management systems must remain a priority in those countries - largely in the developing world - that still face basic regulatory challenges, while also considering how to be responsive to the issues of concern.
- Build on existing efforts by stakeholders and sectors and focus on prevention and minimization.
- Develop a concept for a process of nomination, prioritization and evaluation that is robust and relevant. Future activities on emerging issues should be focused on where there is added value.
- Monitoring of already identified emerging issues.
- There should be reflection on and consideration of the implementation of a lifecycle approach.
- Give priority to the identification of hazardous chemicals in products and throughout their lifecycle.
- Actions should be categorized to facilitate work planning, for example:
 - Areas where scientific information exists and there is a need to increase the knowledge basis.
 - New emerging issues where we need to promote understanding and awareness.
 - Development of national or regional chemicals and waste management systems, including refinement of existing systems.
 - Issues which need global or coordinated action.

New and emerging issues / Issues of concern

[IPEN prefers “issues of concern” as a title for initiatives that focus on specific chemical safety issues. This title is broader and reflects current realities – particularly in developing and transition countries.](#)

[Issues of concern in the Beyond 2020 Chemical Safety Framework should be subsumed under concrete measures to contribute to implementation of Agenda 2030. Existing and some new issues of concern are described above. These are linked to contributing to specific SDGs and](#)

contain measurable outputs for ease of performing effectiveness evaluation and reporting – both with the Framework and to HPLF or other bodies involved in implementation of Agenda 2030. Most importantly, these activities reflect tangible activities to reduce harm on the ground and not just process objectives.

Science-policy interface

- Explore how to strengthen the link between science, public health and policy in global chemicals and waste governance.
- Recognize the existing mechanisms for provision of science advice on chemicals and waste by intergovernmental and international bodies such as UNEP, WHO and the chemicals and wastes conventions secretariats.
- Consideration of the social interface and the full range of scientific and public health disciplines.
- Explore approaches on the use of science to inform policy-making and action, including existing mechanisms, in other clusters, such as climate change and biodiversity.
- There were also come comments regarding the need to focus on scientific capacity building and caution about diverting resources from implementation.

Science-policy interface

The actual proposal is not certain, though some have suggested formation of a body to address scientific issues. It is not clear what tangible problem this proposal is trying to address. In many instances, acting on existing scientific evidence is a stronger need than collecting additional information (e.g. the listing of the paraquat formulation and chrysotile asbestos is still pending under the Rotterdam convention despite very clear data and recommendations from the CRC). All the emerging policy issues and issues of concern that have been proposed and worked on during SAICM so far, have been solidly justified and no extra scientific body would have altered or improved decision-making on them. Considering the serious resource challenges facing chemical safety implementation, a funded scientific body would be a low priority compared to many other pressing concerns. If such a body were to be considered, then very precise terms of reference would be needed to ensure that all appropriate stakeholder groups are able to fully participate and that the full spectrum of scientific and public health disciplines related to chemical safety are actively engaged. In addition, strict measures to prevent conflict of interest and bias would need to be instituted to protect scientific integrity in policy decisions.

Financing

- The integrated approach to address the financing of the sound management of chemicals and waste is composed of mainstreaming, enhanced industry involvement and dedicated external financing (UNEP/GC 27/12 and UNEA 1/5). The implementation of the integrated approach is essential for financing the sound management of chemicals and waste in the long term.
- Providing sustainable, adequate, comprehensive and predictable financing in the long term with emphasis on the role of developed countries.
- A broader range of contributions should be considered that are predictable, sustainable and adequate.

- Mainstreaming in national budgets and sectoral policies [through cost internalization and cost recovery mechanisms](#).
- Provide effective capacity building in relevant areas and also focus on the importance of building and strengthening institutional capacity and the need to engage industry in solutions.
- Broadening the donor base for sound management of chemicals and waste, including exploring untapped resources linked to the 2030 Agenda for Sustainable Development.
- Building on existing funding structures at all levels, including lessons learned from existing funding mechanisms.
- Promote enhanced funding for the sound management of chemicals and waste under the GEF Trust Fund, Green Climate Fund and others with access for all eligible countries and relevant stakeholders, in accordance with applicable rules.

Financing

[A successful Beyond 2020 Chemical Safety Framework depends on sufficient, predictable funds that can be accessed by relevant SAICM stakeholders. While SAICM had a program to finance enabling activities, the funds need for SAICM implementation on a serious scale never arrived.](#)

[Key elements that should form part of the finalized framework include:](#)

- [Donor government development assistance agencies should substantially increase visibility and financial support for chemical safety, particularly since the Beyond 2020 Chemical Safety Framework links sound chemicals management to sustainable development and will develop measurable objectives in support of Agenda 2030.](#)
- [A clearing house mechanism should publicly track development aid for sound chemicals management.](#)
- [The Special Programme should be supplemented to enable access by all relevant Beyond 2020 Chemical Safety Framework stakeholders.](#)
- [Beyond 2020 Chemical Safety Framework effectiveness evaluation should also evaluate SAICM financing.](#)
- [UNEP should execute a study on how to implement economic instruments to internalize, within relevant industries, the cost to governments of implementing robust programs for sound chemicals management. This is because the global chemical industry has an annual turn-over of approximately USD\\$4.1 trillion per year and a 0.1% levy would yield USD\\$4 billion for sound chemicals management.³²](#)
- [The overwhelming majority of the funds generated by a levy on the industry should be directed to assist chemical safety activities in developing and transition countries. The UNEP study should include input by stakeholders and include global or regional approaches consistent with Rio Principle 16.](#)

Sustainable and Green Chemistry

- There was some debate concerning the definition of sustainable versus green chemistry. However, there was agreement that there were useful aspects of these concepts that should be followed up at the next intersessional process meeting.

³²[United Nations Environment Programme \(2012\) Global Chemicals Outlook](#)

IPEN comments on sustainable and green chemistry

Both green chemistry and sustainable chemistry are useful concepts. However, the major focus of the Beyond 2020 process should be to identify and characterize the features of a new framework, its governance, and the obligation to develop concrete measures in support of Agenda 2030. Note that neither green chemistry nor sustainable replaces the need for sound chemicals management and dealing with legacy issues. Sustainable chemistry will be useful only if it is clearly defined in a way that includes reducing and eliminating the hazards of chemicals over their lifecycle as a priority. In some uses, that includes non-chemical approaches such as agroecology. Leaving the term “sustainable chemistry” without a clear definition invites labeling all kinds of current chemistries as sustainable chemistry, watering down the term to render it nearly useless and leaving opportunities to “greenwash” chemistries with a term that suggests social or environmental benefits that do not exist. Green chemistry should be an obligatory part of sustainable chemistry so that hazard reduction is fully incorporated into the sustainable chemistry concept.

National Implementation

- National Action Plans were mentioned as a possible tool to address the sound management of chemicals and waste, focusing in particular on building in-country capacity for basic chemicals and waste management with the support of international cooperation.
- Additional elements such as institutional strengthening and information sharing were highlighted for making progress at the national level.
- National cost recovery mechanisms was highlighted as key for national implementation

National implementation

National implementation plans are extremely important to ensure action. While the OOG describes important elements, it is primarily focused on process. To fulfill the vision and objectives of the Beyond 2020 Chemical Safety Framework it will be critical that national implementation plans include tangible actions to prevent and reduce harm. These actions can spring directly from measurable objectives to implement Agenda 2030 or other country priorities that directly address preventing and minimizing the adverse impacts of chemicals and wastes on human health and the environment. National implementation plans should also provide a basis for financing since specific objectives and outcomes will be included.

Another important aspect of national implementation and overall implementation of the Beyond 2020 Chemical Safety Framework is regular effectiveness evaluation. This would be facilitated by having measurable objectives as outlined above in the section on Agenda 2030. These same objectives would also facilitate reporting since the current SAICM indicators are vague and do not capture actual implementation and its challenges.
National implementation plans

Adoption of the Beyond 2020 Chemical Safety Framework

The Beyond 2020 Chemical Safety Framework should be welcomed with a ministerial statement at ICCM5 in 2020. Optimally, the statement would include ministers from environment, health, agriculture, labour and other relevant ministries. The SAICM agreement should be reaffirmed and preserved in the new Beyond 2020 Chemical Safety Framework.

In addition, to the overall ministerial statement, there should be a launch of actions on the relationship between women and chemical safety. This launch should occur via a ministerial statement about women and chemical safety from female ministers of environment, health, agriculture, labour and others at ICCM5. While gender issues have received attention by the BRS Secretariat³³ and the GEF³⁴, the need for this type of declaration and subsequent actions are especially acute in chemical safety.

A ministerial statement by women ministers is consistent with past international agreements. Rio Principle 20 states, “Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.”³⁵ The ministerial SAICM Dubai Declaration commits governments to, “work towards effective and efficient governance of chemicals management by means of transparency, public participation and accountability involving all sectors of society, in particular striving for the equal participation of women in chemicals management.”³⁶ One of SAICM’s objectives is, “To ensure equal participation of women in decision-making on chemicals policy and management.”³⁷

The ministerial statement on women and chemical safety would be highly relevant to kickstarting actions on contributing to fulfilment of SDG5, among other SDGs. Each of the current SAICM emerging policy issues and issues of concern is closely connected to the SDGs and the relationship between women and chemical safety. For example:

Highly hazardous pesticides: UNEP’s Global Gender and Environment Outlook notes that in some countries, “women make up 85% or more of the pesticide applicators on commercial farms and plantations, often working whilst pregnant or breastfeeding” and that, “Overall, women are more biologically sensitive than men to many pesticides.”³⁸

Lead in paint: WHO notes that, “Exposure of pregnant women to high levels of lead can cause miscarriage, stillbirth, premature birth and low birth weight, as well as minor malformations.”³⁹

Chemicals in products: Different patterns of product use can also result in different potential chemical exposures. For example, women use more personal care products than men and a wide variety of chemicals found in these products raise health concerns.

Hazardous substances within the lifecycle of electrical and electronic products: The issue of women in electronics is an ongoing matter of concern due to the large use of chemicals and the high proportion of women workers. An analysis of epidemiological data found evidence suggesting reproductive risks to women from semiconductor fabrication jobs including

³³ <http://www.brsmeas.org/?tabid=3651>

³⁴ Global Environment Facility (2011) Mainstreaming Gender at the GEF

³⁵ United Nations Conference on Environment and Development (1992) Rio Declaration on environment and development, <http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid=1163>

³⁶ UNEP - WHO (2006) Dubai Declaration, para 18, Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

³⁷ UNEP - WHO (2006) Overarching Policy Strategy, para 16, Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

³⁸ Watts M (2013) Breast cancer, pesticides, and you. Pesticide Action Network Asia and the Pacific

<http://www.panap.net/sites/default/files/Breast-cancer-pesticides-and-you.pdf>

³⁹ <http://www.who.int/mediacentre/factsheets/fs379/en/>

spontaneous abortion, congenital malformation, and reduced fertility.⁴⁰ A subsequent examination of reproductive risks among female microelectronics workers aged 20 – 39 years old found a significantly higher risk for spontaneous abortion and menstrual aberration.⁴¹

Nanotechnologies and manufactured nanomaterials: Titanium dioxide nanoparticles can cause ovarian dysfunction, affect genes regulating immune response, disrupt the normal balance of sex hormones and decrease fertility.⁴² In addition, many nanoparticles can cross the placenta where they can cause, “altered organogenesis and morphology as well as defects in the reproductive and nervous systems of the offspring.”⁴³

Endocrine-disrupting chemicals: In women, “EDCs can adversely affect the ovary, uterus, vagina, anterior pituitary, and/or steroid production, which can lead to reproductive disorders such as early puberty, infertility, abnormal cyclicity, premature ovarian failure/menopause, endometriosis, fibroids, and adverse pregnancy outcomes.”⁴⁴ A special concern for exposures during pregnancy is that alterations in fetal programming events can predispose adults to chronic diseases.

Environmentally persistent pharmaceutical pollutants: Concerns around exposure to pharmaceutical pollutants in women include chemical exposures during development, exposures to chemical mixtures, chemical exposures in women of reproductive age, and the fact that some pharmaceutical pollutants, “are prohibited from prescription to pregnant women or children.”⁴⁵

Annex 1. Global Alliance to Phase-out Highly Hazardous Pesticides

The proposal for a Global Alliance to Phase-out Highly Hazardous Pesticides (HHPs) grew out of concerns about HHPs expressed in SAICM regional meetings prior to ICCM4 in Africa, Asia-Pacific, Central and Eastern Europe, and Latin America and the Caribbean. At ICCM4, a conference room paper proposing a Global Alliance to Phase-out HHPs was put forward jointly by Albania, Angola, Bangladesh, Belarus, Bhutan, Cameroon, Dominican Republic, Egypt, El Salvador, Ethiopia, the Gambia, Georgia, Ghana, Honduras, Jordan, Liberia, Libya, Moldova, Morocco, Nigeria, Oman, Palestine, Panama, Peru, Sudan, Tanzania, Tunisia, Yemen, International Trade Union Confederation, International POPs Elimination Network, Pesticide Action Network and International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers’ Associations. Other stakeholders were not ready to move

⁴⁰ Kim MH, Kim H, Paek D (2014) The health impacts of semiconductor production: an epidemiologic review, Int J Occup Environ Health 20:94-114

⁴¹ Kim I, Kim MH, Lim S (2015) Reproductive Hazards Still Persist in the Microelectronics Industry: Increased Risk of Spontaneous Abortion and Menstrual Aberration among Female Workers in the Microelectronics Industry in South Korea, PLoS One doi: 10.1371/journal.pone.0123679

⁴² Sun J, Zhang Q, Wang Z, Yan B (2013) Effects of nanotoxicity on female reproductivity and fetal development in animals models, Int J Mol Sci 14:9319 – 9337 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3676785/>

⁴³ Sun J, Zhang Q, Wang Z, Yan B (2013) Effects of nanotoxicity on female reproductivity and fetal development in animals models, Int J Mol Sci 14:9319 - 9337

⁴⁴ Gore AC, Chappell VA, Fenton SE, Flaws JA, Nadal A, Prins GS, Toppari J, Zoeller RT (2015) EDC-2: The Endocrine Society’s Second Scientific Statement on Endocrine-Disrupting Chemicals, The Endocrine Society, ISSN Print 0163-769X ISSN Online 1945-7189 <https://www.endocrine.org/~media/endosociety/files/publications/scientific-statements/edc-2-scientific-statement.pdf?la=en>

⁴⁵ UNEP (2015) Nomination for a new emerging policy issue: environmentally persistent pharmaceutical pollutants, 4th International Conference on Chemicals Management, SAICM/ICCM.4/INF/15

forward with a Global Alliance at ICCM4, however, delegates did agree to advance the issue. The ICCM4 resolution on HHPs called for concerted action on HHPs, “with emphasis on promoting agroecologically based alternatives.”⁴⁶

In light of the new global focus on sustainable agriculture outlined in SDG2, the time has come to reconsider establishing a more formal concerted global effort to deal with HHPs through a Global Alliance. This could draw from lessons learned during the Global Alliance to Eliminate Lead Paint.

A Global Alliance to Phase-out HHPs would support implementation of two key policy decisions:

- (a) Paragraphs 84 and 86 of the 131st Session of the Council of the Food and Agricultural Organisation,⁴⁷ in which the Council endorsed SAICM and recognized FAO’s role in SAICM implementation through activities on risk reduction, including the progressive ban of highly hazardous pesticides and promoting good agricultural practices; and
- (b) Sustainable Development Goal #2, “End hunger, achieve food security and improved nutrition and promote sustainable agriculture.”⁴⁸ This includes a focus on Target 4, “By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.”

The overall goal of the Global Alliance would be to promote the implementation of paragraphs 84 and 86 of the 131st Session of the Council of the Food and Agricultural Organisation on the progressive ban of highly hazardous pesticides and promoting good agricultural practices. The Global Alliance would be a voluntary and collaborative relationship between various parties, whether governmental, non-governmental, public or private, in which all participants agree to work together systematically to attain the overall goal of phasing out highly hazardous pesticides. It would be open to Governments, intergovernmental organizations, research and academic organisations, and representatives of civil society and the private sector that support the partnership goal. The Global Alliance could undertake its work primarily through electronic communication mechanisms. However, opportunities in conjunction with regional meetings of Strategic Approach stakeholders and international, regional and national meetings on chemical management could also be used. FAO would be an ideal UN agency to support the Global Alliance, however if the agency is unwilling to perform this secretariat function, perhaps UN Environment might consider moving it forward.

Specific objectives of the Alliance should include the following:

- (a) To raise the awareness of government authorities and regulators, farmers, rural communities, indigenous peoples, private industry, consumers, workers, trade unions and health-care providers about the harms of highly hazardous pesticides and the availability of safer alternatives;

⁴⁶ UNEP (2015) IV/3 Highly hazardous pesticides, Report of the International Conference on Chemicals Management on the work of its fourth session, SAICM, ICCM.4/15

⁴⁷ Report of the Council of FAO, 131st Session, 20 – 25 November, 2006, CL131/REP

⁴⁸ United Nations (2015) Transforming our world: The 2030 agenda for sustainable development <http://www.un.org/sustainabledevelopment/sustainable-development-goals/#8d796abdf942e9d1e>

- (b) To catalyse the design and implementation of appropriate prevention-based programmes to phase-out highly hazardous pesticides, replace them with nonchemical alternatives, agroecological practices and ecosystem approaches to sustainable food and fibre production, and public health vector control as a priority. When processes for phasing-out highly hazardous pesticides are put in place arrangements must be made to ensure a fair and safe transition that protects workers' health and employment;
- (c) To provide assistance to farmers to enable them to phase out highly hazardous pesticides while maintaining their agricultural livelihood;
- (d) To provide assistance to health professionals on identifying and reporting pesticide poisonings to promote efficient surveillance and identification of highly hazardous pesticides;
- (e) To provide assistance to government authorities with identifying appropriate alternatives, particularly for public health vector control;
- (f) To promote the establishment of appropriate national regulatory frameworks to stop the manufacture, import, sale and use of highly hazardous pesticides, as well as the sound disposal of highly hazardous pesticides;
- (g) To provide guidance and promote assistance to identify, reduce and avoid exposure to highly hazardous pesticides including for communities near areas of cultivation and urban areas.

A variety of partnership activities could also be envisioned to advance the Global Alliance objective of phasing out HHPs. These could include

(a) Information

- (1) Exchanging information on pesticides that meet the criteria for highly hazardous pesticides;
- (2) Exchanging information on the effects and potential effects of highly hazardous pesticides on health and the environment;
- (3) Exchanging information on pathways of exposure to highly hazardous pesticides for children and adults;
- (4) Exchanging information on highly hazardous pesticide use in various countries;
- (5) Exchanging information on national, provincial, State and local regulations, legislation, and policies restricting and prohibiting highly hazardous pesticides in various countries;
- (6) Exchanging information on highly hazardous pesticides that have been or are being phased out in countries;
- (7) Exchanging information on national, provincial, state and local regulations, legislation, and policies prioritizing nonchemical substitution and providing for the implementation of ecosystem-based agriculture;
- (8) Exchanging information on nonchemical alternatives, agroecological practices and ecosystem-based approaches;
- (9) Exchanging information on labeling and certification systems with regard to the presence and concentrations of highly hazardous pesticides in food;
- (10) Exchanging information on methods to make fields safe for work by or presence of pregnant women and children;

(11) Exchanging information on suggestions for warning labels on food grown with highly hazardous pesticides alerting users to the health risks that could result.

(b) Monitoring:

(12) Encouraging nations to monitor health to estimate the prevalence of highly hazardous pesticides in use and in the environment, food, and/or humans;

(13) Encouraging nations to conduct monitoring to estimate the prevalence of highly hazardous pesticides in the environment (for example, in water, soil and animals);

(14) Encouraging nations to conduct market surveys to estimate the prevalence of highly hazardous pesticides in food.

(c) Capacity building and expertise:

(15) Building capacity to monitor health to estimate poisonings due to highly hazardous pesticides;

(16) Building capacity and providing training in nonchemical techniques, agroecological practices, and ecosystem approaches to pest and crop management, including farmer exchanges;

(17) Building capacity and providing information and knowledge in human and laboratory equipment to facilitate laboratory tests for highly hazardous pesticides;

(18) Building capacity and providing information and knowledge to help officials in a range of ministries to test for highly hazardous pesticides;

(19) Providing technical expertise in the design and implementation of studies to estimate the levels of highly hazardous pesticides in the environment, food, and/or humans;

(20) Providing expertise in policy development at the national level on implementing nonchemical techniques and agroecology.

(d) Regulatory

(21) Discussing and providing technical assistance on steps that could be taken to phase out highly hazardous pesticides worldwide;

(22) Encouraging the use of financial incentives to support the use of nonchemical alternatives, agroecology and ecosystem approaches to agriculture and public health vector control;

(23) Developing guidelines for establishing national standards, including those that would regulate and stimulate use of organic agriculture;

(24) Encouraging nations to require that only crops grown without highly hazardous pesticides be supported with government funds;

(25) Encouraging nations to require that crops grown with agroecology be given preference for public procurement;

(26) Providing guidance for and information on effective enforcement of national standards, including on how to avoid smuggling of highly hazardous pesticides;

(27) Building the legal enforcement capacity of environmental health officers in ministries, local authorities and mines;

(28) Providing international support to developing countries by devising further methods to enact comprehensive legislation to phase out highly hazardous pesticides completely;

(29) Exchanging information and providing international support to strengthen and harmonize existing national legislation that focuses on protecting public health in relation to the phase-out of highly hazardous pesticides;

(30) Enhancing the elimination of highly hazardous pesticides around schools and other areas where children will be present, given children's special vulnerability to highly hazardous pesticides;

(31) Minimizing risks of previously applied highly hazardous pesticides by using effective containment.

(e) Research and extension

(32) Sharing knowledge on the availability of safer alternatives to replace highly hazardous pesticides;

(33) Developing agroecological alternatives to highly hazardous pesticides;

(34) Developing guidelines with descriptions of simple analytical methods and test kits to identify highly hazardous pesticides;

(35) Assessing the hazards of substitutes for highly hazardous pesticides.

(f) Outreach to industry and market.

(36) Encouraging wholesalers and retailers to halt sales of highly hazardous pesticides;

(37) Assessing the feasibility of the voluntary phase-out of highly hazardous pesticides in cooperation with business and industry, including at the (sub) regional level.

Finally, the Global Alliance would develop and implement a monitoring mechanism for tracking progress on activities undertaken through and by the partnership. This would facilitate publicly available reporting on progress both with the Beyond 2020 Chemical Safety Framework and the Agenda 2030 processes.

Annex 2. Women and chemical safety

Chemicals impact women and men in different ways and through different routes. These differences have consequences that play out against the larger backdrop of issues related to gender (in)equality and sustainable development. As UNEP's Global Gender and Environment Outlook notes, "Sustainable development will not advance, nor will environmental protection policies and actions be as effective as they need to be, if gender equality is not protected and enhanced."⁴⁹ Despite the fact that women make up roughly half the population and chemical exposures are widespread; the gender aspects of chemical safety have been largely ignored. The Beyond 2020 Chemical Safety Framework and its links to Agenda 2030 provide a needed impetus to finally establish actions on the relationship between women and chemical safety.

Factors affecting women and chemical safety include these elements:

- **Lack of data:** Knowledge of exposure routes and the true impacts of chemical exposures on women are difficult to determine because gender-disaggregated data is thin or entirely absent. As a result, current exposure standards are usually based on an assumed average male height and body weight and this reduces protection for both women and children. In addition, without links to other gender data such as the number of women in certain occupations, linkages to certain health effects cannot be identified. Better understanding of gender-dependent hazards will improve how protective and preventive measures are designed and implemented.
- **Environment assessments of and activities on chemicals and wastes usually ignore gender aspects:** This disparity hides differences in gender susceptibility to chemical exposure. To achieve better outcomes from chemicals management measures, and awareness-raising and capacity-building activities, it is sometimes crucial to address men and women differently. For example, information workshops addressing households are often attended by the male head of the family, even though often the women should have the information first hand. This could lead to many recommendations not being implemented in the household (e.g. waste handling). Therefore, chemicals and waste projects should have a gender assessment before they start, gender sensitive indicators and activities, and a gender evaluation after they finish, to increase the effectiveness of the outcomes.
- **Different physiology affects exposure and impacts:** Women and men have different hormone systems that influence a whole host of body functions during development and as adults. Throughout their lives, women are exposed to numerous harmful chemicals that can be transferred across the placenta during fetal development and through breast milk to the nursing infant. Exposures to chemicals that dissolve in fat are especially relevant, as women tend to have higher fat content. Exposures during fetal development can cause lifelong harm and increase the risks of such harmful effects as preterm births, birth defects, childhood and adult diseases. Adverse effects can also be carried across multiple generations. A growing number of chemicals have been shown to exert multigenerational and transgenerational effects. Exposure to pregnant females not only impacts the offspring (F1) but also their offspring (F2) and even the subsequent generation (F3.)

⁴⁹ United Nations Environment Programme (2016) Global Gender and Environment Outlook: The Critical Issues, DEW/1970/NA <http://www.unep.org/gender/portals/24117/GGEO%20TRIFOLDER%20final.pdf>

- **Unique time periods of susceptibility:** Men and women have different time periods in which impacts of chemical exposure can be especially high. For women, these time periods include adolescence, pregnancy, lactation, and menopause.
- **Different types of occupational exposures:** Women and men both experience occupational exposures to chemicals, but these may differ based on the region, type of occupation, and access to information. For example, women working in agriculture in some countries can represent the majority of workers involved in pesticide spraying. In some countries, women working in rural areas are exposed to chemicals due to the traditional practice of burning agricultural stubble and waste in preparation for planting. Beauty salon workers are overwhelmingly women, and are often exposed to chemicals in the products they handle. Women are also exposed at home while using cleaning products, household pest control products, washing pesticide-contaminated clothing, the storage of pesticides and spray equipment in kitchens, or dealing with wastes. Women typically work at the lowest level in global production systems. This feminization of poverty makes women more susceptible and vulnerable to toxic chemical exposure, putting their health at risk.
- **Exposures to chemicals in different types of consumer products:** Women use a different spectrum of consumer products than men. For example, women use substantially more personal care products than men and usually do house work using cleaning products containing chemicals. This and other differential use of products results in different types of chemical exposures.
- **Decision-making on environment and chemical safety issues is not equal:** Women generally have more limited decision-making power and this is consistent with the low number of parliament seats and higher-level government positions held by women, as well as decision-making at the household level. The role of women as educators, trainers, and decision-makers in addressing chemicals and waste problems is both underestimated and underutilized. There are wide disparities between women and men in access to education, resources, social protection, financing, capacity-building and training, and technical knowledge and skills. This creates different exposure scenarios, impacts empowerment, and undermines the development of gender responsive policies.

The relationship between women and chemical safety is highly relevant to concrete actions in support of Agenda 2030. For example:

Highly hazardous pesticides: UNEP's Global Gender and Environment Outlook notes that, "*Gender differences in the effects of chronic exposures to pesticides are related to the different physiologies of men and women. Overall, women are more biologically sensitive than men to many pesticides.*"⁵⁰

Lead in paint: The human fetus is the most vulnerable to the toxic effects of lead and a pregnant woman can transfer lead that has accumulated in her body to her developing child.⁵¹

⁵⁰ United Nations Environment Programme (2016) Global Gender and Environment Outlook: The Critical Issues, DEW/1970/NA <http://www.unep.org/gender/portals/24117/GGEO%20TRIFOLDER%20final.pdf>

⁵¹ Bellinger, DC (2008) Very low lead exposures and children's neurodevelopment. *Current Opinion in Pediatrics*, 2008, 20:172-177

Lead is also transferred through breast milk when lead is present in a nursing mother.⁵² WHO notes that, “Exposure of pregnant women to high levels of lead can cause miscarriage, stillbirth, premature birth and low birth weight, as well as minor malformations.”⁵³

Chemicals in products: Women use more personal care products than men and a wide variety of chemicals found in these products raise health concerns. These include 1,4-dioxane, acrylates, carbon black, coal tar, diethanolamine, formaldehyde, and others.⁵⁴ However, information on these and other toxic chemicals is usually not disclosed and is not included on product labels, which makes women unaware of potential health hazards caused by toxic ingredients. IPEN studies of chemicals in products have revealed a wide variety of toxic metals in skin-lightening creams and other consumer products.^{55 56 57 58 59}

Hazardous substances within the lifecycle of electrical and electronic products: By the mid-1970s, there were about one million workers in electronics assembly in Asia and 90% of them were women.⁶⁰ An analysis of epidemiological data found evidence suggesting reproductive risks to women from semiconductor fabrication jobs including spontaneous abortion, congenital malformation, and reduced fertility.⁶¹ A subsequent examination of reproductive risks among female microelectronics workers aged 20 – 39 years old found a significantly higher risk for spontaneous abortion and menstrual aberration.⁶² More than 300 cases of occupational diseases in electronics workers in the Republic of Korea have been documented and court or government decisions have linked some of the illnesses to working conditions.⁶³

Nanotechnologies and nanomaterials: Toxicity studies in animals indicate that nanomaterials used in consumer products can harm the female reproductive system. Titanium dioxide nanoparticles can cause ovarian dysfunction, affect genes regulating immune response, disrupt the normal balance of sex hormones and decrease fertility.⁶⁴ In addition, many nanoparticles can cross the placenta where they can cause, “altered organogenesis and morphology as well as defects in the reproductive and nervous systems of the offspring.”⁶⁵

⁵² Bjorklund KL, Vahter M, Palm B, Grander M, Lignell S, Berglund M (2012) Metals and trace element concentrations in breast milk of first time healthy mothers: a biological monitoring study, *Environ Health* 11:92

⁵³ <http://www.who.int/mediacentre/factsheets/fs379/en/>

⁵⁴ www.safecosmetics.org/get-the-facts/chemicals-of-concern/

⁵⁵ <http://ipen.org/site/toxics-products-overview>

⁵⁶ <http://ipen.org/documents/imeap-report-market-investigation-illegal-importation-mercury-containing-skin-whitening>

⁵⁷ <http://ipen.org/documents/ecowaste-coalition-imeap-poster-market-investigation-illegal-importation-mercury>

⁵⁸ <http://ipen.org/site/china-results>

⁵⁹ <http://www.ipen.org/sites/default/files/documents/EARTH%20Hg%20in%20Whitening%20-%20Report.pdf>

⁶⁰ Lim LY (1981) In: Dauber R, Cain ML, eds. *Women and technological change in developing countries*. Boulder, Colorado, Westview Press, 1981. 181-90. (AAAS Selected Symposium 53) <http://www.popline.org/node/385070>

⁶¹ Kim MH, Kim H, Paek D (2014) The health impacts of semiconductor production: an epidemiologic review, *Int J Occup Environ Health* 20:94-114

⁶² Kim I, Kim MH, Lim S (2015) Reproductive Hazards Still Persist in the Microelectronics Industry: Increased Risk of Spontaneous Abortion and Menstrual Aberration among Female Workers in the Microelectronics Industry in South Korea, *PLoS One* doi: 10.1371/journal.pone.0123679

⁶³ Personal communication from Supporters for the Health and Rights of People in the Semiconductor Industry (SHARPS)

⁶⁴ Sun J, Zhang Q, Wang Z, Yan B (2013) Effects of nanotoxicity on female reproductivity and fetal development in animals models, *Int J Mol Sci* 14:9319 – 9337 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3676785/>

⁶⁵ Sun J, Zhang Q, Wang Z, Yan B (2013) Effects of nanotoxicity on female reproductivity and fetal development in animals models, *Int J Mol Sci* 14:9319 - 9337

Endocrine disrupting chemicals (EDCs): In women, “EDCs can adversely affect the ovary, uterus, vagina, anterior pituitary, and/or steroid production, which can lead to reproductive disorders such as early puberty, infertility, abnormal cyclicity, premature ovarian failure/menopause, endometriosis, fibroids, and adverse pregnancy outcomes.”⁶⁶ A special concern for exposures during pregnancy is that alterations in fetal programming events can predispose adults to chronic diseases.

Environmentally persistent pharmaceutical pollutants: Concerns around exposure to pharmaceutical pollutants in women include chemical exposures during development, exposures to chemical mixtures, chemical exposures in women of reproductive age, and the fact that some pharmaceutical pollutants, “are prohibited from prescription to pregnant women or children.”⁶⁷

Two areas for concrete actions on the relationship between women and chemical safety are:

Make women and chemical safety a high-level issue of concern

1. A multi-stakeholder women and chemical safety working group is established by 2020 to develop recommendations for actions on women and chemical safety that are included in workplans guiding SAICM emerging policy issues and issues of concern.
2. Female Ministers of Environment, Health, and Agriculture, in collaboration with relevant stakeholders, develop a report for SAICM on women and chemical safety for release in 2020 that includes case studies and concerns from all UN regions.
3. Female Ministers of Environment, Health, and Agriculture make a ministerial declaration on women and chemical safety in 2020 that springs from the findings and recommendations of their report and is consistent with the needs and strategies outlined in the SAICM agreement.

Address women and chemical safety as an integrated component in all IOMC and national projects

1. Develop gender guidelines for sound chemicals and waste management and agriculture in all IOMC and national projects by 2020. Existing gender guidelines could serve as the baseline, but do not currently address specific aspects of chemicals and wastes and the differences of their implications in women and men, and thus need to be expounded upon.
2. Donors and IOMC organizations require gender assessments, collection of sex-disaggregated data, and gender trainings for involved staff and project participants for all chemicals, waste, and agriculture projects by 2020.
3. Donors and IOMC organizations develop quantitative and qualitative gender and social class indicators for both policy and projects on chemicals, waste, and agriculture by 2020 to better understand gender and social class implications related to chemicals and waste topics, which will further lead to improved conditions for women and men equally, and empower them to play an active role as agents of change.

⁶⁶ Gore AC, Chappell VA, Fenton SE, Flaws JA, Nadal A, Prins GS, Toppari J, Zoeller RT (2015) EDC-2: The Endocrine Society’s Second Scientific Statement on Endocrine-Disrupting Chemicals. The Endocrine Society, ISSN Print 0163-769X ISSN Online 1945-7189

<https://www.endocrine.org/~media/endosociety/files/publications/scientific-statements/edc-2-scientific-statement.pdf?la=en>

⁶⁷ UNEP (2015) Nomination for a new emerging policy issue: environmentally persistent pharmaceutical pollutants, 4th International Conference on Chemicals Management, SAICM/ICCM.4/INF/15

4. Donors and IOMC organizations require a section about gender-related activities and outcomes of the project in all chemicals, wastes, and agriculture projects by 2020.
 5. Donors and IOMC organizations make all gender-disaggregated data retrieved in all projects publicly available beginning in 2022, to increase the protection of human health and to stimulate further scientific research.
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