

Position Paper: Recommendations Regarding the Chemicals Management Plan and CSO Engagement for Chemicals Management in Canada

Developed by Civil Society Organization representatives on behalf of the Toxics Caucus

Submitted to Health Canada and CMP Program Staff

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Organizations represented by individuals in the Toxics Caucus include:

- Canadian Environmental Network
- Canadian Environmental Law Association
- Canadian Labour Congress
- Centre for Health Science and Law
- Environmental Defence
- Environmental Health Association of Quebec
- Manitoba Eco-Network
- MiningWatch
- NB Lung
- Prevent Cancer Now
- Salt Spring Island Water Preservation Society
- Sierra Club Atlantic Chapter
- Social Planning Council of Winnipeg
- University of Alberta
- Watershed Sentinel

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Executive Summary: Recommendations for Engagement with Civil Society / Summary of Recommendations and Note from Caucus Chair

Civil society organizations have collectively been providing input into the Chemicals Management Plan for many years. Of note, our recommendations of May 2019, often referred to as our White Paper were substantively integrated into CMP post 2023.

With the support of a Civil Society engagement contribution agreement, a formalized Toxics Caucus under the Réseau Canadian Environmental Network (RCEN) has been established. Given the diversity of voices within the Caucus, and the changing legislative landscape around chemicals management, there was a need to articulate current civil society priorities for engagement.

Caucus members not only represent the voices of disproportionately vulnerable populations but also represent a wealth of technical expertise. On average, Caucus members have 15 or more years of experience in chemicals management from a variety of perspectives.

Many of the concerns raised by CSOs are not limited to CMP and bring to question the role of CMP in the overall landscape of toxics management and Canada's broader commitments to, for example, climate mitigation and biodiversity. Given the state of the science and the urgency of the planetary crisis, Caucus members see the need for a paradigm shift in the chemicals management decision-making framework. Without such a shift, engagement with our representatives results in input that is "inactionable" under the current framework.

The following pages describe the position of the caucus on seven topics requiring attention from the program in its pursuit to protect human health and the environment. These are summarized below:

Recommendation #1:

Leverage the wealth of expertise in civil society, by involving CSOs before decisions are made, ensuring that CSO consultations are granted the same consideration and respect as industry representatives. Where CMP is not the forum to enact the desired policy change, provide support and navigation for CSOs to have a seat at the right table.

Recommendation #2:

Recognize that human health and the health of the environment are intrinsically intertwined. Siloed approaches are not adequate to protect both. Earth's life support systems are failing and rapidly evolving: This is the context within which CMP must function.

Recommendation #3:

Exclusively risk-based decision-making relies on outdated scientific assumptions and requires re-evaluation as it is fundamentally flawed in protecting those most vulnerable

and relies on outdated scientific assumptions (please see recommendations #3a and #6).

Recommendation #3a:

To align with Health Canada's definition of vulnerable populations, the preamble to Canada's Human Toxins and Pathogens Act, and the increasing burden of disease from chemicals (including but not limited to the recognized disability of Multiple Chemical Sensitivities), imperative, substantive change to the management of chemicals is required to enable Canadians to make healthier product choices.

Recommendation #3b:

Recognize CMP as a powerful agency in chemical stewardship to achieve systemic changes essential to planetary health which is threatened by climate change, biodiversity loss, and resource depletion. Adaptation of the program to meet the needs of today's planetary crisis is critical.

Recommendation #4:

To meet international commitments regarding climate and biodiversity, implement an essentialness lens in chemical management decisions on new chemicals as well as old chemicals being reviewed for market removal or use-restriction.

Recommendation #5:

Improve accessibility of safe and healthy products for the public by providing consistent disclosure of all hazards on the label.

Recommendation #6:

Strengthen scientific methods used in decision-making. Notable areas to strengthen include: risk and exposure assumptions, cumulative assessment, toxic degradation products, systematic literature review, onus to ensure a chemical is safe before entering the market, data collection, and reporting the number of chemicals in use. Full life cycle assessment, including sourcing and waste management, should be included.

Recommendation #7:

Recognize CMP as a lever in policy-making that can address the evolving planetary crisis by continually evolving.

An overarching challenge for CSOs is in navigating which engagement fora offer opportunity to enact the changes.

Recommendations:

- a) Substantive engagement with CSOs in CMP consultations including:
 - Funding
 - Timely feedback from the program
 - Integration with other engagement streams

- Identify opportunities for policy levers to address CSO concerns that go beyond
- b) CMP program but relate to wider policy advocacy
- Review of CMP's mandate, to ensure that CMP is also an integrated lever in addressing Canada's broader commitments

Introduction

Before 2022, there was a Stakeholders Advisory Council (SAC) that contributed to and advised the government on the Chemicals Management Plan (CMP). The recommendations of the group were summarised in [this document](#) (“the White Paper”), but given the ever-evolving knowledge of Civil Society Organisation (CSO) representatives in the Toxics Caucus, today a new document is needed to better reflect our current priorities.

An important obligation of the CMP is to develop and implement an engagement and contribution program that endorses the right of civil society to provide advice, information, and feedback to the CMP. To help meet this obligation, in 2022, Health Canada entered a contribution agreement with the New Brunswick Lung Association and the associated Canadian Network for Human Health and the Environment (CNHHE).

The New Brunswick Lung Association and the CNHHE will use their national network of organizations to communicate with and engage Canadian civil society organizations, including health and environmental non-governmental organizations, with respect to CMP functions, and will support the flow of information, consultation, and communication between civil society and Health Canada. This will provide support for CSOs to organize and collaborate on issues of common concern to bring the voices of a wide range of Canadians to the CMP and related environmental health initiatives. Under this agreement, the New Brunswick Lung Association and the CNHHE have, through a subcontract, re-established the Toxics Caucus with the Réseau Canadian Environmental Network (RCEN) to promote dialogue among CSOs for planning and coordinating input into the CMP.

About the Toxics Caucus

The Toxics Caucus’ mandate is to support Canadians and disproportionately affected populations on issues related to human health and the environment. The partnership between the Réseau Canadian Environmental Network (RCEN) and the New Brunswick Lung Association allows the facilitation of regular caucus meetings, joint submissions and other reports, and public engagement through social media channels and sharing with their combined networks. The New Brunswick Lung Association also has a long history of working with Health Canada and supporting CSO participation in the CMP, including providing the public with opportunities to comment on various chemical substances.

The Caucus’ priorities include modernizing assessment procedures, analysis, and conclusions, following the precautionary principle, improving regulatory transparency, ensuring the necessity of chemicals, and, where possible, using the least toxic alternatives. The ultimate vision of the caucus is to equitably protect human and non-human life from harmful chemicals, now and in the future. We accept the need for chemicals to be used in society, and that chemicals have provided significant benefit to humanity, but with a cost that is rapidly becoming only too obvious. We now know that chemicals are not innocuous, their production and use is a major cause of global chemical pollution and consequent profound harm to both human and non-human life as well as rapidly degrading global ecological integrity. We are told that the global production of chemicals is projected to double in the next 20 years, an environmentally unsustainable process leading to crippling global harm. To that end, we must advocate for the prudent use of chemicals, for their minimal production, and for use only when demonstrably

essential to human society as it faces a time of unprecedented rapid global environmental and social change. This will help to reduce chemical pollution, minimize exposures of chemicals to susceptible lifeforms, slow biodiversity loss, and help restore ecosystem stability. We advocate that only the least toxic chemicals are used and that the full lifecycle of chemical products be considered during the process of risk assessment and management and the creation of chemical policy. All aspects of the life of a chemical– from extraction of raw materials to production, use, recycling, and disposal– must be considered.

The membership of the Toxics Caucus currently comprises about 20 members across eight provinces and territories. The average years of experience working with toxics in this group is 15 years, with members representing organizations related to human health, law, chemistry, planning, and the environment.

About the Chemicals Management Plan (CMP) Program

The CMP program was launched in 2006 as a joint effort between Health Canada and Environment and Climate Change Canada to provide a whole-of-government approach to managing chemicals in Canada. This includes chemicals used in industry, pesticides, food, and consumer products. The program aims to reduce risks to Canadians and the environment from potentially harmful chemicals and includes systematically addressing 4,300 priority chemicals of potential concern, of which approximately 95% have already been addressed.

The CMP program received a renewal of funding from 2021 until 2024 to continue risk assessments of chemicals in commerce and pre-market assessments of new chemicals. With changing times, the program will be modernized iteratively to enhance engagement with CSOs and to emphasize the disproportionate impacts of harmful chemicals on certain groups or populations. The program will evolve to address other emerging priorities amid a changing global landscape, such as advancements in science, an increased rate of chemical production, and a shift away from reliance on animal testing. There is also a shift towards a group-by-group approach to assessing chemicals, rather than the current substance-by-substance approach that does not serve Canadians or consider cumulative impacts.

The *Canadian Environmental Protection Act* (CEPA, 1999) provides the legal basis that enables the CMP to protect the environment and human health. This act is being modernized, including the amendment of Bill S-5, which proposes a new right to a healthy environment for all Canadians, as well as adding a range of provisions that will affect the foundation of chemicals management in Canada. The bill received Royal Assent in June 2023 and will be amended into CEPA. The renewal of the CMP in 2024 will work to incorporate these new amendments, as well as developments in policies for biodiversity and climate change.

CSO Engagement in the CMP Program

Engagement with CSOs is an important avenue to tap into the knowledge, perspectives, and feedback of external experts, and those who are disproportionately affected by chemical exposures. Previously, the CMP program had formed a Stakeholder Advisory Committee (SAC) with representatives from various organizations related to human health, the environment, industry, consumer groups, and Indigenous rights. The objective of the SAC was to contribute to the implementation of the CMP program by offering advice to the government and by fostering a dialogue between the stakeholder groups.

One of the main outputs of the SAC was a document of recommendations and evaluations, "[the White Paper \(2019\)](#)", which the CMP program used to design its new engagement approach. A key concern was that civil society needs more equitable engagement opportunities, including a broader range of stakeholders. Along with this is a need to build capacity for the public and organizations to participate effectively. These concerns were heard, and are reflected in the new approach through more transparent bilateral meetings with CSOs, and modest funding for Indigenous groups, CSOs, and the public.

CMP program staff have identified guiding principles for effective engagement with CSOs and other stakeholders. These include accessibility, inclusivity, timeliness, predictability, accountability, transparency, and relevance. Some of these principles have been long-standing in the CMP program, while others are more recent and will have to be incorporated into the approach to ensure useful engagement.

There are several key drivers for change in the CMP program. These include recognition that continued 'business as usual' concerning industrial chemical production significantly adds to the likelihood of failure of earth's life-supporting systems. Furthermore, CSO input from prior consultations has identified the necessity to focus on disproportionately affected populations, enhance inclusivity through sex- and gender-based analysis, consider Indigenous rights, and establish connections to environmental racism and justice. This aims to ensure a more effective representation and protection of the environment. In response to these drivers and as a result of formal program evaluation, a revised engagement vision was developed by Health Canada and Environment and Climate Change Canada. This new vision seeks to address the engagement of industry, CSOs, and Indigenous groups separately, to attain a more equitable inclusion of civil society and Indigenous Peoples' perspectives in the program. The inclusion of a wider breadth of stakeholders and partners through more meaningful engagement mechanisms should allow CMP program activities and decision-making to be more fully informed.

Establishing our relationship with CMP will be expedited by discussion between CSO and CMP to determine how to effectively address relevant issues, by mobilizing funding mechanisms to support partnerships, and developing long-term relationships to Indigenous engagement. Currently, the focus is on creating a firm relationship to build upon, hopefully through regular—at least semi-annual—bilateral meetings including all three streams of engagement (industry, CSOs, and Indigenous groups). With time, the goal is to establish ad-hoc multi-stakeholder fora and science workshops to complement the bilateral meetings and allow a flow of information among all stakeholder groups and the government to enable further discussion. This new approach will enable the program to bring in stakeholders and relevant voices at opportune times, instead of through standard scheduling with static advisory councils.

Key Priorities and Recommendations

CAUCUS PRIORITY #1: Ensure substantive engagement with CSOs in CMP consultations.

Money: Funding is needed for CSOs to effectively contribute useful feedback to the CMP program. It is also needed to support individuals who develop the capacity to provide that feedback.

Timely Feedback: It is important that concerns are addressed promptly, and that changes in printed information from Health Canada and Environment and Climate Change Canada reflect this. There is often a feeling that CSOs are not being heard, so having our suggestions reflected is encouraging.

Integration: While having separate meetings (i.e. for the three streams of engagement: CSOs, Indigenous, and industry) may allow voices to be heard more easily, this approach can quickly lead to siloed thought and hence mis- or non-communication between groups who should all be heard and who should know what the others are saying. Adding a barrier is not helpful. What may be needed is a very good meeting facilitator, perhaps more time, more detailed minutes of meetings, and documentation as to how CMP responds to points made at the meetings.

Education: Legal requirements are persuasive justifications for Health Canada's actions and knowledge of the enabling law and policy will increase the respect accorded to NGOs. One way to improve this competency is to schedule a webinar and invite issue experts to explain the regulations and identify important levers for action.

Limits: Although the Caucus considers the ideas expressed in this document to be relevant to Canadian Society and the general role of CMP, some of them may be new to CMP and possibly beyond its original mandate. To that end, the Caucus wants to know what the limits of CMP are as it addresses the concerns of the Toxics Caucus. This may allow the Caucus to determine alternative avenues for advocacy and to work with CMP to raise relevant issues with other agencies and levels of government where these issues have currency.

Mandate: The Caucus thinks the 'chemical world' is changing and that CMP may need to broaden its mandate. Therefore, as well as knowing the limits of the CMP, the Caucus also wants to know the explicit mandate provided to the CMP by Health Canada and Environment & Climate Change Canada. The Caucus also wants to know if that mandate has evolved with time and experience. If possible, the Caucus would like to know how the mandate to the CMP relates to the mandate of other federal agencies that address industrial regulatory issues: e.g. pesticides, food, pharmaceuticals, and the extent to which CMP can be used as a lever to meet other Federal commitments such as climate targets and biodiversity protection. The Caucus thinks that the silos between these agencies hinder their effectiveness, particularly at a time when the need for efficacy, transparency, and scientific integrity is urgent and paramount.

RECOMMENDATION #1:

The Caucus recommends that a procedure be developed that ensures that all relevant perspectives—TC, IG, Industry, and CMP—are heard and respected. This procedure should ensure that CSOs are consulted before decisions are made and that the results of their consultations are granted the same consideration and respect as industry representatives. Post-consultation, we recommend that government representatives prepare a summary document to recap their understanding of meeting outcomes with CSOs. This document should then be sent to the Caucus for review to ensure that both sides' perspectives are reflected properly. The Caucus and the government can then produce a joint statement on steps that need to be taken; attracting NGO and expert supporters can help pressure officials to be more candid and, if not, reveal this to the Minister through a shadow report.

CAUCUS PRIORITY #2: Prioritize Indigenous consultation

Because the culture, language, history, stories, and songs of Indigenous Peoples reflect thousands of years of practical knowledge about our environment, their involvement in CMP is essential. The government should approach Indigenous Peoples from the perspective of knowledge holders, drawing from the past and involving current relationships with Canada's Indigenous groups. Given the depth of the history of Indigenous Peoples and their experiences, the government should work from the basis of past relationships, not the blank slate of a new relationship.

RECOMMENDATION #2:

While Indigenous Engagement is another stream of engagement within CMP, the Caucus urges the Government to recognize that Indigenous engagement offers opportunities and perspectives for the protection of health and the environment for all Canadians. CSOs recognize the Indigenous ways of knowing wherein human health and the health of the environment are intrinsically intertwined. Siloed approaches to assessment are not adequate to protect both.

CAUCUS PRIORITY #3: Foster opportunities for public engagement to reflect the unique vulnerabilities of a diversity of Canadians

In our experience in building capacity for civil society to engage in chemicals management, we hear repeatedly that the windows for public comment are simply too brief for civil society to meaningfully prepare commentary on extensive chemical reviews. Civil society organizations manage wide portfolios of priorities and often work in partnerships with other organizations. Brief time windows in which to collaborate simply do not offer the opportunity to meaningfully engage.

Due to conflicting interpretations of hazard and risk (please see the section on strengthening scientific methods) and society's need for the chemicals in question (please see the section on essentialness), civil society interprets the risk assessment paradigm as fundamentally flawed in its intention to protect Canadians, including those that are the most vulnerable. The tenet of traditional toxicology of *the dose makes the poison* simply does not reflect the reality of exposures to even low doses of chemicals with endocrine disruption properties, particularly when the exposure occurs during a vulnerable period of development. As such, concerns raised by civil society in their response to risk assessments of a particular chemical (or group of chemicals) will inevitably result in comments on the hazard vs. risk debate to which the CMP program is not in a position to adapt the risk management recommendations. The result is a civil society that does not see its concerns reflected in risk management decisions and becomes disengaged in the process entirely.

RECOMMENDATION #3:

The recommendations provided herein to address the stated objectives of CMP (protecting Canadians from chemicals exposure) require significant attention from the program. Civil society offers a wealth of expertise in environmental protection, but our capacity to do so in a framework that inherently cannot meet its objectives is waning.

CAUCUS PRIORITY #3a: Protect vulnerable populations

Protecting vulnerable subpopulations is an important Caucus priority. For the assessment and management of chemicals, Health Canada is proposing to adopt the following definition of vulnerable populations ([see here](#)):

“A group of individuals within the general Canadian population who, due to either greater susceptibility and/or greater exposure, may be at greater risk than the general population of experiencing adverse health effects from exposure to chemicals”

For the purposes of the proposed definition, individuals with greater biological susceptibility include those who may be more vulnerable due to biological or health status including:

- Periods of high vulnerability for all humans – indeed for nearly all animals– are during those stages of life where the normal development or function of biological systems is undergoing rapid change and the cells, organs, and systems of the body are very susceptible to adverse environmental influences (e.g. endocrine disrupting chemicals can have serious effects on the developing embryo). This includes the developing embryo and fetus, infancy, childhood, adolescence, women during reproductive years, and in old age;
- Sex-related susceptibilities such as impacts on reproduction including from exposures to chemicals with endocrine-related modes of action;
- Individuals who may be more susceptible to the impacts of chemicals due to pre-existing health conditions, such as injuries, illnesses or genetic disorders or due to heightened sensitivity to chemicals.

Keeping with the interpretive principle in the preamble to the [Human Toxins and Pathogens Act](#) that “the Parliament of Canada recognizes that a lack of full scientific certainty regarding the risks posed by certain human pathogens and toxins is not to be used as a reason to postpone measures that protect the health and safety of the public.,” CMP must address these concerns effectively.

RECOMMENDATION:

Regarding the above, the Caucus strongly recommends that the inclusion of vulnerable populations, including but not limited to those with Multiple Chemical Sensitivity (MCS), be an item of discussion and action on the CMP. Substances that overtly affect individuals with heightened sensitivities to chemicals may well be contributing to lower-grade adverse effects in others. Specifically, for accessible labeling, to mention and add a warning regarding sensitizers, to have information on the disability on the website to support accessibility and to address stigma due to lack of education, and to find out Health Canada’s plan on accessibility in keeping with the Accessible Canada Act, 2019, which aims to have a barrier-free Canada by January 1, 2040.

Accessible labelling will not only support the MCS population, but also a multitude of other vulnerable subpopulations, and the increasing number of people who are seeking ‘healthier’ products as well as to have clear and easy identification and full transparency of these products.

The Caucus recommends implementing education for accommodation (through scent/fragrance and least-toxic products) and for accessible air for employment, health care and services, etc.,

for the more than 1.1 million people diagnosed with MCS (CCHS, 2020). Diagnosed MCS has been increasing in prevalence (CCHS, 2000-2020).

Reducing and minimizing the use of fragrances will protect public health, and also reduce greenhouse gases.

The CMP must recognize that the thousands of chemicals that may be in fragrance/scent mixtures (per the industry “transparency list”) include chemicals that interact with receptors (including but not only hormone receptors). These chemicals do nothing to make clothes cleaner or air “fresher” - arguably, they do the opposite. Health Canada should take steps to ensure that all personal care, cleaning, and other fragranced products are available in unscented versions and that they do not include masking agents.

Finally, we must consider in our discussions that the environment itself is a vulnerable population and its preservation and protection is of vital importance to human health.

CAUCUS PRIORITY #3b: From vulnerable populations to planetary vulnerability

Much of the preceding document has addressed chemical issues in general plus concerns about vulnerable populations. Here, we argue that CMP’s primary task must be directed at protecting a planet whose life-supporting systems are beginning to fail. We argue that the direct and indirect effects of chemicals have played an important part in the genesis of this failure and that there needs to be a change in how CMP addresses its mandate. We argue that CMP must be prepared to function in a world of novel, rapid, permanent, profound biological, physical, economic, and societal change.

The document *Beyond 2020—CMP Modernization Overview May 2019*, presented possible CMP future plans. These include addressing rapidly rising chemical production and use, innovative chemical approaches, green chemistry, waste management & sustainability, and how chemicals affect health and the environment. It does **not** refer to how the mandate may have to change to mitigate or adapt to global environmental change or how global changes may affect CMP’s ability to meet its mandate.

Chemicals, economic growth, pervasiveness, consequences

Chemicals, while often essential and beneficial to human society, can be harmful. This has been known for centuries, but largely ignored, with economic and societal benefits seemingly outweighing detriments. To that end, their use has led to a tradeoff between harm and benefit. In each case, the mitigation or avoidance of harm is usually related to human concerns, with little regard given to the environment. Chemicals are strong drivers of economic growth and for the most part, economic concerns have prevailed. Even today, when the harms of chemical use are increasingly apparent, chemical production is projected to double in the next 20 years. To be explicit, this means that over the next 20 years, more chemicals will be produced than have ever been produced.

Chemicals have also enabled the building of “stuff” (e.g. cement) and the growth of food. It took thousands of years for humankind to build as much ‘stuff’ as nature’s biomass, which is about 550 billion tonnes of carbon. Humans will repeat the feat in 20 years. As well, the demands of population growth require that in the next 20–25 years more food must be grown than has ever been grown in history. Each of these doublings also doubles the demands placed on Earth for resources, waste management, and life support. We question the wisdom of this growth.

Clearly, this is unsustainable. Today every year humanity uses the resources of 1.7 Earths, in 20 years we will need 3 Earths. It is irresponsible. What do we leave our descendants? To the degree that chemicals play a role in these growth spurts, at least for Canada's share, CMP must fulfill its responsibilities.

There are likely few lifeforms extant on the planet that have not had their lives, and lifecycles, affected in some manner by chemicals. Today, no place on the planet is free of chemical pollution and chemical effects. The air all life needs to breathe, the water all life needs to drink, and the soil that all land-based life lives in or on or obtains its food from, are all polluted by chemicals. A key consequence is the loss of or damage to the environment to such a degree that the healthy existence of all life is threatened. This loss of an appropriate environment, as well as more direct adverse effects on life in the environment, is leading to a massive loss of global biodiversity. And yet chemical production will double. This cannot continue.

Why does biodiversity loss matter

Global biodiversity loss reflects more than just stating that species are going extinct. It is the loss of what these species do, individually, communally, and in the aggregate, to maintain the life-supporting systems on which all life on Earth depends. And with global biodiversity loss, the consequences are global.

A simple human analog might be the consequences to a city when it experiences a major loss of its population. It is not just people, it is what those people did: gardeners, teachers, doctors, plumbers, parents, students, first responders, a multitude that forms the structure and sustainability of society. As more people leave, the losses grow, and the city's viability crumbles. Civilizational collapse follows a similar pattern. When a city or a civilization collapses, the loss is local; other cities or other civilizations pick up the slack, and human life, and society, proceed. But global biodiversity loss affects life globally, and there is no reserve to draw from.

How does this affect us? Why should we worry? After all, humans constitute only 0.01% of all biomass on Earth; how are humans affected? The remaining 99.99% of Earth's biomass should be able to handle our needs. What does it do? Simply put, it keeps us alive. This is done through the daily, yearly, decadal, millennial, direct and indirect, and aggregate consequences of healthy non-human life existing in nature. Through the effects of their existence and living, Earth's life-supporting systems, i.e. those systems on which all life depends, are maintained in a stable state conducive to human society. Each organism in the environment has certain tasks which in the aggregate contribute to the maintenance of Earth's life-supporting systems. If these tasks are not met, and non-human life plays the principal role in meeting these tasks, Earth's life-supporting systems start to fail, and this is what is happening today.

Humans are special

At one time, the amount of chemicals produced, even if toxic, was small, and any harmful effects were easily absorbed by the planet. And we probably didn't care, or bother to look, or know how to look; we liked the benefits. As well, humans were exceptional, we were superior to nature and could exploit and subdue it at will. In addition, we were seemingly exempt from the rules of physics and biology. But this is no longer the case. Although the ideas of exceptionalism and exemptionalism are still common, their hubris is as obvious as are the obvious serious, global, and increasing effects seen today of chemical creation, production, use, and disposal. Unfortunately in many instances, the effects in nature are only poorly documented and are likely much more extensive than we know.

The problem is not just chemical production, although from the perspective of resource depletion that is a worrisome concern, the real problem is the, usually unintended, consequences of what chemicals do to life and, indirectly, to Earth. Chemicals, plus fossil fuels, have been the great enablers of today's societies. But this combination of enablers has also led to massive resource use, overconsumption, overpopulation, and global pollution. Equally, it has altered our value systems and attitudes towards nature, regarding it as being only of utilitarian value, instead of having its own intrinsic value and playing the critical role of keeping all alive.

Facing the reality of the reality we face

At one time the adverse effects on society because of fossil fuels and chemicals were slow, partly because the benefits were so obvious and the adverse effects were lost in the noise. But the nature of their growth in production and use is exponential and today we have left the cusp of exponential growth and are well up the vertical pathway. This has been called the Great Acceleration. Apart from any consequential dangers of such rapid growth is the increasingly rapid accretion of consequences. This rapid accretion makes it far more difficult to manage, as does the fact that many aspects of global existence, biological and economic and societal, are on the same path and the effects concatenate. We face a multitude of interrelated wicked problems.

We are in a new state, a new state of multiple global emergencies: climate, pollution, overpopulation, overconsumption, and resource depletion, and CMP has its own role to play. Chemical stewardship underscores the CMP mandate. So far, that stewardship seems to have been directed more to counting, assessing for safety, (re)-registering chemicals used in Canada, and monitoring them, somewhat loosely, during and after their use. CMP is proud of its efforts thus far and is now making plans for the future. However, their plans lack a critical perspective: one of addressing the threats posed by global change and functioning effectively in an environment of unprecedented, rapid, profound physical, chemical, ecological, biological, physical, economic, and societal change.

It is critical for CMP to face the reality of the reality it faces. It must acknowledge that our world is changing, our environment is changing and we must change. It needs to acknowledge a need for transformational change: from "Business as Usual" to a world of limits, consequences, and changing perspectives. Our society is at stake. A livable planet is at risk.

Clearly, this is not an issue just for Canada. However, CMP is the agency responsible for chemical stewardship in Canada, including creating and interpreting chemical policy and regulation. Thus, it is the agency that must address these issues in Canada and speak for Canada, and Canada's "chemical position" on the world stage.

RECOMMENDATION #3b: Regardless of the serious vulnerabilities that various vulnerable populations face, the need to recognize, document, and address the problems of chemical overproduction, overuse, and over-pollution during a time of major permanent global change must be a prime priority. If we do not do this, then all the other efforts, which under different circumstances would be sensible, is just rearranging the deck chairs.

The Caucus recommends that CMP staff research, plan, build, and function whilst addressing the implications of these problems to global chemical stewardship. It must determine how to keep Canadians safe from unnecessary chemical production and use, and also set appropriate guidelines and limits whilst helping the chemical industry to survive as it also acknowledges, and works within, the same challenges.

Most importantly, we must recognize the problem, acknowledge it, document it, and ignore the side issues, but pick out the key issues and address them. We cannot afford to ignore them.

CAUCUS PRIORITY #4: Essentialness of chemicals on the market

A common sentiment of the caucus is that there needs to be a reduction in the number of chemicals and gross volumes of chemicals produced and brought to market. While a growing production curve is beneficial for economic growth (unfortunately including the healthcare sector), there are many reasons that increases in chemicals are harmful, including society's need to decarbonise (given that the chemical industry is a major contributor to climate change), the impact of environmental pollution on the planet, and the fact that our ability to produce chemicals vastly outstrips our ability to manage the consequences of their production and use.

There also needs to be a shift in the level of evidence, or endpoints, used to consider whether a chemical is toxic or not, and the least toxic alternative should be the default permitted option, as often as possible. In addition, the use of fragrance in products is all too common, even though these chemicals do not contribute to product efficacy (and may work against efficacy - e.g., clothes, bedding, etc. are not cleaner when coated with fragrance ingredients). Fragrances help to give companies a marketing edge. Fragrance is also proprietary information, so the actual chemicals used do not need to be listed on labels but could contain any of 3,000+ chemicals, many of which could be harmful. Many people with asthma or MCS cannot tolerate fragrances, and it is one of the first things that is eliminated from their lives to control their sensitivities. There should be a priority for safe substitution to better protect community health, therefore, fragrance-free products should be more readily available and fragrance-free alternatives mandated as the healthier and climate-friendlier options for all products (assuming that they are essential products).

RECOMMENDATION #4:

In order to meet international commitments regarding climate and biodiversity, Canada must decrease, in absolute terms, the volumes of chemicals manufactured and in commerce, and also decrease the toxicity of substances in commerce (by shifting to less hazardous substances). This will require substantial changes in industries, and the CMP is an avenue to provide the impetus for actions against existential threats. CSOs have not yet heard this imperative enunciated by government representatives.

The Caucus advocates for a streamlined process for removing chemicals from the market and restricting substances for various purposes to the least-toxic option for a given use. The current portfolio, including look-alike substitutes (solved with assessments of CLASSES), is unmanageable from a toxicology accountability perspective, even with the best intentions of the CMP.

CAUCUS PRIORITY #5: Labelling and accessibility for the public

The general consensus among Canadians is that if a product is available on a store's shelf, it is safe to use unless otherwise labelled. Several members of the Caucus agree that we need to improve the accessibility of safe and healthy products for the public including labelling and warnings, prioritization of accessible labelling (e.g., colour coding), and education. Warnings directly reduce the risk of harm and only indirectly and possibly increase the availability of safe

alternatives. Allowing product marketing claims (e.g., free of lead, etc.) may be unnecessary and, often, are used to inflate prices. Mandating ingredient declarations is more dependable and warnings where necessary.

RECOMMENDATION #5: Disclosure of hazards on the label.

All percentages of chemicals, even low amounts, in products should be labelled, based on the precautionary principle and the common law duty to warn established in, for instance, [Létourneau v. JTI MacDonald Corp., Imperial Tobacco Canada Limited., and Rothmans, Benson & Hedges Inc.](#) Foods, infant products and cosmetics containing toxic chemicals should have proper labelling (regulation on labelling designs should be modified) since common masses are unaware of the impacts of these chemical substances. Canadians need to be able to readily assess their personal level of risk when making decisions on which products they purchase and bring into their homes.

CAUCUS PRIORITY: Strengthen scientific methods

Caucus members have identified a need to strengthen scientific methods through systematic reviews of published scientific literature, accurate data collection, and effective methodology. Public participation in evaluating and auditing the methods *before* a chemical is assessed would offer meaningful engagement opportunities for civil society and ensure transparency of methods and decision-making.

Systematic literature reviews of published scientific literature

CMP must ensure that chemical risks include systematic reviews of literature published in peer-reviewed journals indexed in, for instance, [PubMed's search engine](#), and counterpart environmental studies journals (some of which are indexed in PubMed) and include any “conflict of interest declarations” for every study.

All chemicals should be subjected to systematic scientific reviews addressing health risks and addressing effectiveness at achieving the intended purpose. For instance, some risk might be tolerated for chemicals used to avoid significant health risks with no known substitutes, whereas any risk might be considered excessive for a chemical that is ineffective at producing benefits or for which there are safe alternatives. Chemical reviews should expressly address questions about the possible debilitating effects of products on vulnerable populations, even if there is no scientific consensus.

Consider reviewing class actions referencing the “Hazardous Products” (36), toxin (9), or other relevant search terms to locate risky products. Class actions identify problems but do not directly seek regulatory change or process improvements. [See here.](#)

Risk analysis could begin by taking the entire catalog of chemicals in the CMP list, creating a spreadsheet, and identifying for each chemical:

- The number of PubMed articles including the chemical name in the title or abstract;
- The number of environmental studies for each chemical;
- The LD50 (Lethal Dose 50) for each chemical (which likely varies by test animal species);

- The number of studies including the word death, disability, cancer, sensitivity, sensitization, or disability or other appropriate search terms;
- Class actions referencing the chemical.

This review could provide valuable work for a group of students or volunteers. Assigning the project to two independent redundant teams could be a way of verifying the accuracy of entries, reducing the need for fact-checking to records where chemical entries are significantly different.

Data collection

CMP must ensure ample data collection (both human and environmental) regarding new chemicals on the market to investigate the initial hypothesis including whether initial assumptions were correct, what risks ultimately are posed, and on what basis the hypothesis is substantiated, or not.

There is a need for sufficient reliable data to help regulate emissions and industrial spills and disposals to mandate limits on the use of toxic chemicals. Not to forget that industrial spills and disposals are not always getting reported correctly, and raw data get falsified in several instances, as well. These factors should not be ignored since they contribute to decision-making.

By properly researching and collecting sufficient (quantitative) data on the environmental release, concentrations, and the fate of the same, we will ensure the protection and conservation of the environment and the improvement of human health. Determining the amount of environmental release and environmental concentrations is crucial since these data are the sole decision-making tools to list the chemicals as toxic under section 64.

Methodology

Section 64 of CEPA defines a substance as "toxic" only if it is entering or may enter the environment in a certain quantity or concentration or under certain conditions that might pose a threat to human health. Several toxic chemical substances that were observed to have severe health effects have been considered not to pose any threat, only since they do not meet the criteria to be listed as toxic under section 64, based on either insufficient data or the environmental release or concentration data, alone. Since errors and uncertainties in data collection and scientific measurement cannot be ruled out in any scientific study, and extremes of weather are impacting natural features such as wetlands that improve water quality (among many essential environmental benefits), it is important to incorporate alternative methods of understanding. For example, organizing a separate consultation forum to continue studies on such toxic chemicals should be considered.

CMP must consider the impacts of the phenomenon of biotransformation of toxic substances and the half-lives of the intermediates formed should be taken into consideration, regardless of the bioaccumulative capability of the primary compounds. According to some research studies, degraded products were more toxic than the primary compounds. Since our natural systems for environmental detoxification are largely incapable of completely degrading the organic pollutants in drinking water, contaminating the food chain and affecting humans are still very much probable, even though data reflecting environmental release are below the specified limits.

New Approaches Methodologies to recognize hazards. NAMs are necessary to reduce the use of animal testing. If the system is entirely risk-based then the applicability of NAMs is unclear and they are given much less weight. This is part of the reason that CropLife and others are putting such emphasis on risk-based regulation while supporting reducing animal testing.

ADD cumulative assessments of multiple related chemicals with similar mechanisms of action, and ALSO of unrelated chemicals with unrelated MoAs, potentially with knock-on effects.

DISCUSS the need to be able to assess/confirm the effects of chemicals on Canadians with much greater capacity in longitudinal cohorts, and longitudinal studies of areas/sites/species of concern. Canada needs a Research Institute on Environment, Health and Well-being (<https://preventcancer.ca/canada-needs-a-research-institute-on-environment-health-and-well-being/>).

RECOMMENDATION:

Regarding the above, the Caucus has several recommendations:

- A designated body, such as Health Canada, should be mandated to collect and report the amounts of chemicals introduced to the human-social and natural environment, and assess the reliability of these numbers. The goal of this recommendation is to improve the process of reviewing chemical toxicity and ensure the onus to prove new chemicals are safe before entering the market is assigned to the appropriate organization;
- Consider errors and uncertainties of scientific studies and incorporate alternative methods of understanding;
- Toxic substances not meeting the criteria to be listed as toxic under Section 64, require more attention;
- Study impacts of the biotransformed products thoroughly;
- Require evidence that chemicals of concern are essential, and invest in research to innovate novel alternatives to achieve the necessary results of toxic chemicals in use. Alternatives may entail changing design or processes; not necessarily a drop-in substitute);
- Invest more into research for innovating alternatives, especially for chemicals used in preservatives for foods, infant products, and chemicals (pesticides, herbicides) used for agricultural purposes.

CAUCUS PRIORITY #7: Ensure CMP evolves with an ever-changing environment

It is important that the CMP is prepared to function in a world of unprecedented, rapid, profound biological, physical, economic, and societal change. The document *Beyond 2020 - CMP Modernization Overview May 2019*, presented possible CMP future plans. These include addressing rapidly rising chemical production and use, innovative chemical approaches, green chemistry, waste management & sustainability, and how chemicals affect health and environment, but it does not refer to how environmental change may affect how CMP's capacity to meet its mandate, or how the mandate may have to change to mitigate or adapt to global environmental change.

RECOMMENDATION #7:

The Caucus recommends that CMP staff research, plan, build, and function whilst addressing the implications of these problems to global chemical stewardship. It must determine how to keep Canadians safe from unnecessary chemical production and use, and also set appropriate

guidelines and limits whilst helping the chemical industry to survive as it also acknowledges, and works within, the same challenges.

Appendix I: Supporting Literature

1. D. Mukherjee, A. Ray, S. Barghi; *Mechanism of Acetyl Salicylic Acid (Aspirin) Degradation under Solar Light in Presence of a TiO₂-Polymeric Film Photocatalyst*; *Processes* 2016, 4(2), 13; <https://doi.org/10.3390/pr4020013>
2. Lynda Ellis, Ibuprofen degradation pathways Map; http://eawag-bbd.ethz.ch/ibu/ibu_map.html
3. Volatile organic compounds in the nation's ground water and drinking water supply well, *Water Resources*, April 26, 2006.
4. David Blender; *The atmosphere can be a source of certain water soluble volatile organic compounds in urban streams*, 2014
<https://www.usgs.gov/publications/atmosphere-can-be-a-source-certain-water-soluble-volatile-organic-compounds-urban>
5. Hengtao Xu, Zhe Hao, Weihua Feng, Ting Wang*, and Yao Li; *Mechanism of Photodegradation of Organic Pollutants in Seawater by TiO₂-Based Photocatalysts and Improvement in Their Performance*; <https://doi.org/10.1021/acsomega.1c04604>
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<https://www.unep.org/adaptation-gap-report-2022>
10. Ripple WJ, Wolf C, Gregg JW, Levin K, Rockström J et al. *World Scientists' Warning of a Climate Emergency 2022*. *BioScience*. 2022;72(12);1149-1155.
11. Ripple WJ, Wolf C, Lenton TM, Gregg JW, Natali SM et al. *Many risky feedback loops amplify the need for climate action*. *One Earth*. 2023;6(2);86-91

12. Rothenberg G. A realistic look at CO₂ emissions, climate change and the role of sustainable chemistry. Sustainable Chemistry for Climate Action. 2023;2;100012.

Examples of Online Education and Awareness

1. [Guidelines: Accessible service delivery during emergencies including COVID-19](#)
2. [Creating an Accessible Emergency Response Plan: Guidelines for Federally Regulated Organizations](#)