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Health Canada and the Public
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Canada

Horizontal Evaluation of the Chemicals Management Plan

Prepared by the Office of Audit and Evaluation
Health Canada

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Health Canada is the federal department responsible for helping the people of Canada maintain and improve their health. Health Canada is committed to improving the lives of all of Canada's people and to making this country's population among the healthiest in the world as measured by longevity, lifestyle and effective use of the public health care system.

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List of Acronyms

CEPA	Canadian Environmental Protection Act, 1999
CHMS	Canadian Health Measures Survey
CMP	Chemicals Management Plan
CSO	Civil Society Organization
ECCC	Environment and Climate Change Canada
EPA	Environmental Protection Agency (U.S.)
IRAP	Identification of Risk Assessment Priorities
IM/IT	Information Management and Information Technology
MIREC	Maternal-Infant Research on Environmental Chemicals
NAMs	New Approach Methods
PFAS	Per- and Polyfluoroalkyl Substances
PMRA	Pest Management Regulatory Agency
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

Executive Summary

Program Context

This report presents the findings of the evaluation of the Chemicals Management Plan (CMP). Launched in 2006 and jointly implemented by Health Canada and Environment and Climate Change Canada (ECCC), CMP assesses health and environmental risks posed by chemical substances and organisms and manages toxic substances according to the risks they present.

The evaluation was carried out to assess program performance and provide information for program renewal, and covers CMP activities over two years (2021-22 and 2022-23).

What we found

In 2021-22 and 2022-23, more than 260 existing substances were examined and addressed by CMP. Since 2006, 95% of the 4,363 substances originally prioritized for assessment were addressed, in addition to a significant number of pre-market assessments of new substances, including pesticides. It is anticipated that by the end of 2023-24, CMP will complete addressing the initial cohort of prioritized substances; however, more has to be done.

To date, performance measurement evaluations show that program activities have been effective in reducing human and environmental exposures to specific toxic chemicals. Moreover, the program has made contributions to national and international scientific communities to support understanding the effects of harmful chemicals on human health and the environment, and to promote chemicals management.

The program has adopted several efficient and evidence-informed processes for substance screening and prioritization of risk

assessment and risk management. To date, the program has developed and implemented more than 500 risk management actions for existing priority and new substances assessed to be potentially harmful to human health or the environment. However, the increasing complexity of substances and exposures and the need to develop advanced scientific methods for chemical risk assessment and to identify appropriate risk management measures under the most relevant legislation, present a challenge to the timely completion of risk management actions.

The program collaborates with a variety of internal partners and conducts a range of compliance promotion, verification, and enforcement activities. Program transparency is supported by ongoing external partner and stakeholder engagement and public comment periods for draft publications pertaining to the originally prioritized substances. While the program produces a large quantity of publicly available information, it is not always easily accessible or understandable for non-technical audiences.

Though the COVID-19 pandemic limited research opportunities and restricted external engagement, CMP continued to deliver on program commitments, and supported response to the COVID-19 pandemic through expedited assessments of COVID-19 vaccines and biologics, streamlining of relevant work, and creating innovative solutions like adopting virtual compliance promotion activities.

The globalization of supply chains, rapid developments in science, and broader issues like climate change and Indigenous reconciliation pose increasingly complex challenges and opportunities for the Canadian chemicals management landscape. Additionally, recent amendments to CEPA will require program

review and response. CMP can leverage its strong processes and collaborations, and draw on existing best practices that align with addressing new expectations and future challenges. Given the continued need for chemicals management in a complex environment, and the fact that the initial cohort of prioritized substances will soon be addressed, consideration may be given to creating space for CMP to emerge as a long-term chemicals management program, as opposed to a short-term program that requires ongoing renewals. This would enable the program to undertake longer-term planning to effectively address current and future challenges. Additionally, there are a number of international programs, some in early stages of development, whose implementation and lessons learned, may be useful to consider.

The findings from this evaluation have resulted in the recommendations presented below.

Recommendation 1

Review program priorities and align resource allocation across all thematic work areas based on reviewed and renewed priorities.

CMP has nearly completed the assessment and, where needed, the development of risk management instruments for the initial cohort of existing priority chemicals. In addition to addressing the continued need for ongoing chemicals management, the program also needs to respond to a number of upcoming challenges, including:

- broader level prioritization in the light of the recently amended *Canadian Environmental Protection Act, 1999* (Bill S-5);
- increasingly complex chemistries, and rapidly developing scientific methodologies; and
- evolving international commitments.

Static funding and resource constraints were reported across the range of CMP activities. Additionally, the evaluation found evidence of over and underspending across different thematic work areas. Therefore, there is a need to review program priorities and financial and staff allocations across all CMP thematic work areas to effectively respond to current and future challenges.

Recommendation 2

Address the ongoing need for data and improve data infrastructure.

CMP requires a large quantity of scientific, monitoring, surveillance, and commercial use data to carry out its risk assessment and risk management activities. Besides leveraging international data and ongoing research, the program has several research, monitoring, and surveillance activities in place to provide data. However, challenges remain in acquiring sufficiently detailed data in a timely way, or obtaining new data that has not yet been collected or does not yet exist. Additionally, it was noted that at times, data needs for risk assessment of a particular substance may differ from its risk management. These highlight a continued need for research, monitoring, and surveillance activities. Also, earlier information-sharing across all thematic work areas should be considered to effectively align research and data collection activities with upcoming risk assessment and risk management initiatives.

While the evaluation found evidence of a few initiatives to improve internal information management and information technology (IM/IT) systems, outdated IM/IT and data infrastructure limitations affect program efficiency and operations. This continues to be an area of need, including making the wealth of programmatic information on the CMP website and the CEPA registry easily searchable for external partners and stakeholders.

Recommendation 3

Improve risk communication to people in Canada and support technical communication across different partner and stakeholder groups.

CMP produces a number of knowledge products that are accessed by numerous audiences, which include technical audiences and the general public. The evaluation found evidence that the information targeting non-technical audiences, including retailers, manufacturers, and national Indigenous partners, was, at times, difficult to understand. However, the Healthy home campaign has been well-received by the public as a successful example of the program's communication activities for non-technical audiences. Lessons learned from the Healthy home campaign should be examined and used strategically to develop other key externally facing communication products, whether for external partners, stakeholders, or for people in Canada.

Recommendation 4

Develop and maintain engagement across different external partner and stakeholder groups, including Indigenous partners.

Meaningful engagement with partner and stakeholder groups is important for the program to achieve its goal of protecting human health and the environment by ensuring diverse voices are heard and considered in program policy and decision making. While the evaluation found evidence of insufficient meaningful engagement with Indigenous partners, the recently launched contribution program provides an avenue to improve the program's engagement with numerous partners, including Civil Society Organizations (CSO) and Indigenous partners. Consideration should be given to the

regular identification of lessons learned and the adoption of best practices to enhance engagement across thematic work areas.

Program Context

Jointly managed by Health Canada and ECCC, CMP is a horizontal initiative that brings together various federal chemicals programs into a single, cohesive strategy to protect human health and the environment. The program addresses health and environmental risks posed by chemical substances and organisms, both naturally occurring and genetically modified, and manages toxic substances according to the risks they present.

When identifying and managing risks, CMP implements actions under various laws, including the *Canadian Environmental Protection Act, 1999* (CEPA), the *Pest Control Products Act*, the *Food and Drugs Act*, the *Fisheries Act*, the *Hazardous Products Act*, and the *Canada Consumer Product Safety Act*. On June 13, 2023, Bill S-5, *Strengthening Environmental Protection for a Healthier Canada Act*, received Royal Assent. This Act modernized CEPA through a series of amendments, and will affect CMP's thematic work areas.

CMP was established in 2006 as Canada's response to the global implementation of the Strategic Approach to International Chemicals Management (SAICM) and the Millennium Development Goals, which are now the Sustainable Development Goals.

Following a prioritization exercise, the program was to complete the risk assessments and any risk management measures for 4,300 priority chemicals already in commerce identified in 2006.

The program has had four funding phases and is currently in its fourth phase:

- Phase I: 2006-07 to 2010-11;
- Phase II: 2011-12 to 2015-16;
- Phase III: 2016-17 to 2020-21; and

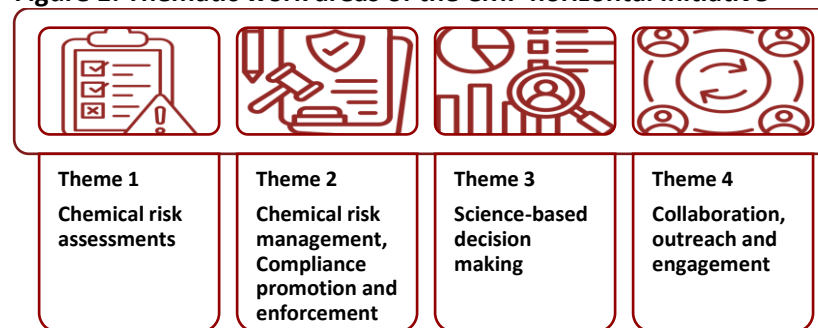
- Phase IV: 2021-22 to 2023-24.

Multiple branches in both departments are involved in CMP activities. At Health Canada, branches include the Healthy Environments and Consumer Safety Branch, the Regulatory Operations and Enforcement Branch, the Health Products and Food Branch, the Pest Management Regulatory Agency (PMRA), and the Communication and Public Affairs Branch. ECCC branches include the Environmental Protection Branch, the Enforcement Branch, and the Science and Technology Branch. Please refer to Appendix 1 to see Health Canada and ECCC branches engaged with CMP.

The Public Health Agency of Canada has also received funding under CMP for travel and border-related activities.

Core program functions are undertaken within four thematic work areas (see Figure 1), with the objective of protecting human health and the environment by addressing substances of concern in Canada.

Figure 1: Thematic work areas of the CMP horizontal initiative



While program themes are presented and discussed within this report, it is important to note that these themes are

interdependent. For example, research, monitoring, and surveillance activities in Theme 3 have significant influence on chemicals risk assessment and risk management under themes 1 and 2. Details for each thematic work area are presented in Appendix 2. Also, note that the use of the word 'chemicals' within thematic work areas refers to substances, as defined by CEPA.

Evaluation Scope

This evaluation was carried out to assess the CMP horizontal initiative's performance and provide information for program renewal.

The evaluation covers CMP activities for the first two years of Phase IV funding (2021-22 and 2022-23). The Public Health Agency of Canada's activities under CMP were out of scope for this evaluation and will be assessed under the Border and Travel Health Evaluation. Multiple lines of evidence were used to address the evaluation questions below. See Appendix 3 for more information.

Program performance

Q1

To what extent has the program achieved its expected outcomes?

- a) Are there challenges impeding the achievement of outcomes?

Program effectiveness

Q2

What are the program's current strengths and gaps to consider for ongoing chemicals management work?

- a) Is the program well positioned to address future challenges?
- b) Are there international approaches to chemicals management that are worth considering for the Canadian context?

Key Findings: Theme 1 – Chemical risk assessments



CMP has addressed almost all existing substances on the original priority list and completed timely risk assessments of numerous new substances. The program prioritizes substances for assessment through evidence-informed processes and applies a risk-based approach to conduct risk assessments. Increasing complexity of substances identified for risk assessment and the need for robust scientific data present a challenge to timely risk assessments.

Achievement of outcomes

The program has addressed 95% of existing substances prioritized for assessment in 2006, along with additional chemicals and a significant number of new substances before their import or manufacturing in Canada. The program also completed pesticide re-evaluations and special reviews.

For Theme 1, both Health Canada and ECCC are expected to identify harmful chemicals through risk assessments of existing priority chemicals and through pre-market assessment of new substances.

CMP continued to address the list of existing substances that was developed and identified in 2006 as a priority for risk assessment. In 2021-22 and 2022-23, CMP examined and addressed more than 260 existing substances through draft and final risk assessments, completing nearly 95% of the list of existing substances (4,144 of 4,363). Internal and external interviewees considered the volume of risk assessment work to be a significant achievement when compared to similar programs in other countries. The remaining priority substances of this initial list (219 of 4,363) are expected to be addressed by the end of Phase IV funding.

Both Health Canada and ECCC completed assessments for existing substances within targeted timelines. During the evaluation period,

the program published 11 draft and 29 final screening assessments for existing substances.

Regarding risk assessment of new substances, Health Canada and ECCC's joint New Substances Program completed more than 350 pre-market new substance assessments for each year in the evaluation's scope (373 in 2021-22 and 351 in 2022-23). Additionally, the program published 49 new substance risk assessment summaries and responded to more than 1,900 new substance-related inquiries. While all new substances were assessed within internal service standards timelines at Health Canada, lower rates of completion (80% in 2021-22 and 81% in 2022-23) were reported at ECCC whose internal standards are shorter than those used by Health Canada¹. See Appendix 4 for more details.

Under CMP, Health Canada's PMRA is expected to complete pesticide re-evaluations and special reviews within specific timelines. Despite significant improvements in completing pesticide re-evaluations within specific timelines (baseline of 31% between 2018-2021 to 76% in 2022-23), PMRA was unable to meet its target of 80%. In addition, the program completed five of six re-evaluations in 2021-22 and 19 of 20 in 2022-23. Also, though the program completed three of five special reviews in 2021-22, it was unable to complete in a timely manner the only special review undertaken in 2022-23. See Appendix 4 for more detail. These delays were caused in part by the complexity of the chemicals under review and a large review size due to the consolidation of special reviews with similar ongoing re-evaluations.

Additional consultations with external partners and stakeholders also contributed to delayed timelines.

Strengths and challenges in chemical risk assessment

CMP applies evidence-based prioritization processes to plan annual chemical risk assessments and determine best-fit approaches for risk assessments of substances. The increasing complexity of substances presents a challenge for the timely completion of risk assessments.

Internal documents show the program has several processes in place, such as the Identification of Risk Assessment Priorities (IRAP), Risk Assessment Toolbox and rapid screening approaches, to support the prioritization of existing substances for risk assessments. These evidence-based processes enable the program to focus on substances of highest concern. Internal interviewees found these tools helpful in prioritizing substances for risk assessments, supporting the program's annual workplan development, and efficiently addressing a large volume of substances when compared to similar programs in other countries. A few internal interviewees also highlighted international interest in CMP's approach to chemical risk assessment.

Both internal and external interviewees considered CMP's approach to risk assessment to be scientifically robust and rigorous because it applies peer-reviewed methods and is informed by a variety of data sources. A few interviewed industry representatives supported the

Risk-based approach to risk assessment considers **both the hazardous properties of a substance** (such as toxicity to aquatic organisms or cancer-causing properties) **and the nature and extent of the exposure** to the substance to humans and the environment.

programs' risk-based approach for risk assessments. In contrast, a few CSOs and academic interviewees thought the program's approach required a 'significant burden of proof' to prove a chemical is toxic. They considered that this approach may result in continued human and environmental exposure until toxicity can be established.

To ensure risk assessment decisions are based on science, the program relies on multiple data sources, including program research, surveillance, monitoring activities, and international sources. Additionally, the program issues mandatory or voluntary survey notices to regulated industry, under Section 71 of CEPA, to collect data on substance import and use. Some internal interviewees reported challenges in obtaining survey responses from targeted industries, suggesting that voluntary surveys may not be an efficient or sufficient source of data. Thus, the program collects data from several sources to support evidence-based risk assessments.

Some internal interviewees from Health Canada and ECCC noted challenges in the limited availability of exposure data for existing substance risk assessments, including limited data on substances entering Canada, post-market exposures, and cumulative risks from substances in real-life exposures. This concern becomes especially pertinent given the increasing complexity of substances, and challenges arising from new chemicals or new exposures, such as rare earth elements. On some occasions, novel methods for risk assessment of chemical mixtures need to be developed, which can be time-consuming. Finally, although some substances have been assessed, there has been an evolution in the understanding of risks they pose. These, along with a significant number of in-commerce substances that have not yet been addressed under CEPA, demonstrate a continued need for data.

Some internal interviewees from ECCC identified resource limitations, including insufficient funds for timely completion of risk assessments.

A review of financial data indicates over spending for risk assessment at ECCC of 8% and 7% in 2021-22 and 2022-23, respectively. Conversely, risk assessment activities at Health Canada were underspent for the same time duration, with 90% of allocated budget spent in both 2021-22 and 2022-23. See Appendix 7 for more details.

The program communicates its important activities and decisions to external partners and stakeholders through the publication of draft and final risk assessments, and it identifies upcoming risk assessment priorities for existing substances through its IRAP review cycles. The majority of industry representatives have noted their appreciation of the public posting of risk assessment priorities, as it gives them advance notice of forthcoming assessments. This, along with the

sharing of draft screening assessments for public comment, was described as demonstrating program transparency. However, the majority of industry representatives and some CSO and academic interviewees identified a need for greater clarity around how CMP addresses data gaps within its risk assessment decisions. Additionally, some CSO interviewees considered the 60-day comment period for complex risk assessments, like the newly published Draft State of Per- and Polyfluoroalkyl Substances (PFAS) report, as insufficient and identified a need for longer public review timelines to ensure appropriate stakeholder engagement. It should be noted that, wherever possible, the program extends the review period, including in the case of the PFAS report.

Key Findings: Theme 2 – Chemical risk management, compliance promotion and enforcement



The program determines risk management actions through an evidence-based process and leverages a broad range of legislations and instruments. Applicable risk management instruments are communicated through a range of compliance promotion activities and followed up through compliance verification and enforcement actions. Performance measurement evaluations indicated that risk management actions have been effective in reducing human and environmental exposures to specific toxic chemicals. Timely data collection to meet legislated CEPA timelines was identified as a challenge.

Achievement of outcomes

Both Health Canada and ECCC implemented a number of risk management actions, organized a range of compliance promotion and verification activities, and undertook enforcement action against non-compliant regulated parties. Results from performance measurement evaluations show that activities have been effective in reducing human and environmental exposures to specific toxic chemicals.

Over 2021-22 and 2022-23, CMP published documents on its approach to risk management of identified substances that meet one or more of the toxicity criteria set out in section 64 of CEPA. These included:

- six risk management scope documents;
- six risk management approach documents;
- two consultation documents; and
- 19 proposed and seven final risk management instruments.

For Theme 2, both Health Canada and ECCC are expected to reduce potential human or environmental exposure to harmful chemicals.

See Appendix 5 for a select list of CMP risk management instruments.

In 2021-22 and 2022-23, risk management instruments were developed within mandated timelines for 24 new substances assessed to be potentially harmful to human health or the environment. This included 16 Ministerial Conditions and eight Significant New Activity (SNAc) Notices. In 2021-22, Health Canada completed 100% of risk management actions within established CEPA timelines. Delayed development of analytical methods during the COVID-19 pandemic resulted in a lower rate of timely completion of risk management actions at ECCC (86%). In 2022-23, the delayed publication of a draft risk management instrument resulted in Health Canada not meeting target timelines. Specifically, the Notice to Stakeholders proposing the addition of Malachite Green/Basic Green 4 as a prohibited ingredient to the Cosmetic Ingredient Hotlist was delayed because a pilot initiative required the development of additional information sheets for the substance. However, this instrument is expected to be published within the 18-month CEPA timeline for final actions.

In addition to developing risk management instruments, Health Canada and ECCC conducted compliance promotion to raise awareness of substances and associated regulations among industry, including businesses. In 2021-22 and 2022-23, both departments carried out compliance promotion activities focussed on 22 priority regulatory and non-regulatory CMP-related instruments. These activities aimed to increase awareness of those instruments among regulated parties and included the following:

- in-person activities, such as site visits, information sessions, awareness campaigns, and presentations at conferences and tradeshows;
- publications, including information package mailouts and reminders, targeted emails to a list of subscribers, and articles in industry association newsletters;

- web-based campaigns, including videos, Twitter posts, web-banner advertising, and news bulletins; and
- responses to individual inquiries. In 2022-23, ECCC responded to 435 inquiries from external partners and stakeholders.

Health Canada conducted compliance verification projects to support enforcement and assessed levels of identified substances in cosmetics and consumer products, such as playpens, expandable enclosures, cribs, and tattoo ink. In 2021-22, Health Canada completed all planned compliance verification projects. However, in 2022-23, two planned compliance verification projects were deferred as ongoing projects created unanticipated demand on available human resources. This led to a lower rate of completion for planned compliance verification projects (71%).

Finally, enforcement actions were taken against non-compliant regulated parties. These actions ranged from inspections, investigations, enforcement measures, and prosecutions as outlined in the publicly available Compliance and Enforcement Policy for CEPA². In 2021-22 and 2022-23, ECCC took more than 500 enforcement actions, including tickets, compliance orders, monetary penalties and warnings involving 184 registered businesses across Canada. These enforcement activities supported regulations of several CMP priority substances, including microbeads, asbestos and siloxane D4, besides pursuing enforcement cases related to pollution and environmental protection. ECCC effectively addressed non-compliance through above-target enforcement actions (85%) and compliance verification for environmental violations (81%). See Appendix 4 for additional details.

The program conducts and publishes regular performance measurement evaluations that examine the impact that risk

management, compliance promotion, and enforcement actions for specific substances have had on human health and the environment. Overall, there is evidence that the program has been successful in protecting human health and the environment. Four substance-based performance measurement evaluations published by the program in 2021-22 and 2022-23 showed a stable or downward trend of select chemicals, demonstrating the success of CMP activities. See Appendix 6 for more information.

Strengths and challenges in chemicals risk management, compliance promotion and enforcement

Chemicals risk management is informed through iterative, information-driven processes involving multi-disciplinary teams. Stakeholder engagement and public comment periods support program transparency. ECCC identified challenges in the availability of appropriate data for the development of risk management actions.

An identified strength of CMP's risk management process is the iterative, information-driven, and structured method of selecting risk management instruments, which is known as the Instrument of Choice Framework. Multidisciplinary teams across Health Canada and ECCC, including risk assessors, risk managers, and compliance promotion and enforcement staff, all play a role in implementing the framework. This strategy enables collaborative decision making and ensures use of several information and data inputs. In addition, CMP has leveraged stakeholder consultations and information about existing regulations at provincial and territorial levels to support decision making. These consultations, along with public comment periods for CMP publications, reflect the program's transparency.

Internal interviewees considered the broad range of legislative authorities as another strength because they allow flexibility in the

development and implementation of effective risk management actions. They saw the Best Placed Act approach and the Instrument of Choice Framework as establishing clear processes for instrument selection, and supportive of effective engagement between Health Canada, ECCC, and external partners and stakeholders. These processes also enabled the program to avoid duplication of risk management efforts at the federal, provincial, and territorial levels. The majority of industry interviewees supported internal views of CMP as an efficient chemicals management program when compared with international counterparts. They indicated that CMP has implemented many risk management instruments while minimizing instrument duplication.

Despite these strengths, a few internal interviewees identified increasing challenges in meeting prescribed legislative timelines for the implementation of risk management actions. One reason for this challenge is related to the collection of sufficient and robust information necessary to guide risk management. Internal interviewees identified a number of barriers to timely data collection, including the increasingly complex nature of substances, their probable exposures to people in Canada, and the need for 'real-world data around how people use and are exposed to chemicals'. Additionally, the need to collect different types of data than that used for risk assessments, and ongoing difficulties in obtaining voluntary data from industries were also thought to contribute to long data collection timelines. Despite these limitations, the program has largely been successful in meeting legislated timelines to implement final risk management instruments.

Since its inception, the program has implemented more than 200 risk management actions on existing priority substances. Maintaining the existing inventory of instruments through continuous compliance promotion, enforcement, and reporting was

noted to be resource intensive. Some ECCC interviewees identified not having sufficient resources to effectively maintain the large number of instruments in place. Financial data slightly demonstrates this challenge – while ECCC spending under this theme was within budget in 2021-22, there was overspending of 6% in 2022-23. Health Canada overspent their planned budget in the past two years; 12% in 2021-22 and 2022-23. See Appendix 7 for more information.

Internal interviewees and documents described challenges related to outdated or unstable IM/IT tools for regulatory data collection, analysis, and sharing. For example, several interviewees commented that the lack of a digital tool for collecting regulatory data resulted in some regulated parties using paper, email, or fax, which all present a greater risk of confidentiality breaches than digital methods, in addition to putting a strain on program resources for data entry.

Despite these gaps, several internal and external interviewees described CMP as a successful program, indicating that “a huge part of CMP’s contribution (is) limiting and reducing exposure to at least some chemicals”.

*“....we like to promote how much work has been done under the CMP-so, we share that **Canada has completed more risk assessments and introduced more risk management instruments than any other jurisdiction in the world**, and delivers tangible environmental and health benefits.”*

(External interviewee, Industry)

While external interviewees generally described CMP as successful in managing identified toxic substances, some CSO, academic and Indigenous representatives thought that CMP has not done enough to protect the people most vulnerable to harms from exposure to toxic substances, including Indigenous peoples. Interviewees

pointed to the history of First Nations communities being exposed to contaminants from industrial pollution, such as the Aamjiwnaang First Nation near Sarnia that has been exposed to years of industrial spills and elevated levels of cancer-causing air pollution.³ Similarly, the House of Commons Standing Committee that studied CEPA identified gaps in environmental protection on First Nations reserves. The Committee had recommended the publication of a regulatory regime for reserve lands that was not ultimately included in the amendments under Bill S-5. While this issue also implicates provincial partners and Indigenous Services Canada, external interviewees felt that CMP could play a role in understanding and addressing the gaps in protecting First Nations and other disproportionately affected populations.

Risk management instruments implemented by CMP target the most likely or most serious exposures for substances determined to be toxic. While the majority of internal interviewees thought this to be an efficient and evidence-based use of compliance and enforcement resources, a few CSO and academic interviewees thought this was a ‘narrow management’ of risks, and that it addressed only a limited set of exposures. This left other exposures associated with an assessed toxic substance unaddressed, which could potentially cause continued harm to people and the environment. While some industry interviewees agreed that ‘risks are managed very narrowly’ by CMP, they thought that if CMP assessed a substance as toxic but did not implement risk management instruments, the unnecessary labelling of a substance would likely cause undue fear among consumers, and could negatively affect businesses.

Most industry representatives interviewed were complimentary of CMP’s engagement with industry stakeholders during risk management processes. They described CMP’s communications as transparent when it come to decisions and considerations of the

impact of risk management and its feasibility for industry. However, a few industry representatives reported short lead-times between publication of risk management instruments and expected industry compliance. For example, restrictions on chemicals in the Cosmetic Ingredient Hotlist are meant to be complied with immediately upon publication, leaving companies with what they consider insufficient lead-time to reformulate their products to ensure compliance. These interviewees expressed a need for proactive communications to ensure regulated parties can respond appropriately when new risk management instruments are published.

Finally, a few external interviewees identified challenges in ensuring the compliance of imported products with Canadian regulations. With no ability to regulate products manufactured outside of Canada, the program has to rely on importers to ensure regulatory compliance and to report any substances of concern entering the country. This limits the program's ability to be proactive in its approach and decision making on substances in imported products.

Key Findings: Theme 3 – Science-based decision making



Both Health Canada and ECCC completed numerous research, monitoring, and surveillance projects. Data collected from these projects directly contributed to science-based decision making by informing CMP risk assessment and risk management priorities and activities. Additionally, CMP research activities responded to emerging chemicals management priorities and contributed to related scientific communities. There is an ongoing need to develop scientific methods to study environmental and human health risks posed by emerging and priority chemicals and to address emerging issues, including occupational exposures, and focusing on populations that may be disproportionately impacted.

Achievement of outcomes

Research projects, along with targeted monitoring and surveillance activities, contributed to science-based decision making by informing risk assessments and risk management activities. Additionally, these activities contributed to national and international scientific communities through peer-reviewed publications, webinars, presentations, and data on the effects of harmful chemicals on human health and environmental risks.

For Theme 3, all CMP research, monitoring, and surveillance projects are expected to provide data to inform CMP decisions.

In 2021-22 and 2022-23, both Health Canada and ECCC completed a large number of research projects in collaboration with risk

assessment and risk management thematic work areas. Program performance data reported that 100% of projects supported CMP's risk assessment and risk management activities. Examples of use include:

- data from research projects informed more than 24 screening risk assessments of existing substances; and
- data from 30 research projects informed the management of Health Canada's Revised-In Commerce list, and the assessment and information gathering for the nanomaterials on the Domestic Substances List (DSL).

Research projects were either carried out internally by Health Canada and ECCC scientists or were contracted out to external experts. Between 2021-22 and 2022-23, Health Canada and ECCC conducted more than 120 research projects in the fields of exposure

science, non-targeted analysis, neurotoxicology, reproductive and developmental toxicology, and toxicogenomic research. Research was also conducted in partnership with other federal government departments, including the National Research Council of Canada and Agriculture and Agri-Food Canada, as well as with academic researchers.

Additionally, Health Canada and ECCC developed analytical tools and approaches to integrate emerging science into improving the identification and prioritization of substances for risk assessments. For example, CMP researchers developed machine learning models to support rapid prediction of chemicals that pose a risk of endocrine disruption. The program also launched research projects focusing on examining new alternate methods to animal testing.

Similar to the CMP research activities, monitoring and surveillance data is leveraged for program decision making and to support performance measurement evaluations. As such, both Health Canada and ECCC have a number of monitoring and surveillance programs that conduct routine collection and analysis of biological and environmental samples. Additionally, the program also used data collected from monitoring and surveillance activities that are not directly funded by CMP. Refer to Figure 1 for a select listing of data sources leveraged by the program.




Through CMP, Health Canada leads the biomonitoring component of the Canadian Health Measures Survey (CHMS). Biomonitoring data from CHMS contributed to more than 50 manuscripts published between 2021-22 and 2022-23. The CHMS biomonitoring data also contributed to national and international chemicals management initiatives, including:

- the development of regional biomonitoring estimates for the Alberta Environmental Public Health Information

Network and the Institut national de santé publique du Québec;

- the development of a risk profile for an organophosphate pesticide (Chlorpyrifos), and risk management evaluations for medium-chain chlorinated alkanes and long-chain perfluorocarboxylic acids to support their nominations to the Stockholm Convention;
- contributing to the European Commissions' Information Platform for Chemical Monitoring database; and
- the development of Canadian drinking water guidelines for several chemicals.

Figure 1: Examples of monitoring and surveillance sources that support CMP

	<p>Environmental monitoring</p> <ul style="list-style-type: none"> • National Air Pollution Surveillance Program • Freshwater Quality Monitoring and Surveillance • Air Quality program science • National Pollutant Release Inventory • Air Pollutant Emissions Inventory
	<p>Biomonitoring</p> <ul style="list-style-type: none"> • Canadian Health Measures Survey (CHMS) • Maternal-Infant Research on Environmental Chemicals (MIREC) Study • Northern Contaminants Program (NCP)
	<p>Food monitoring and surveillance</p> <ul style="list-style-type: none"> • Canadian Total Diet Study • Food Surveys

In 2021-22 and 2022-23, ECCC's CMP Environmental Monitoring and Surveillance Program also supported a number of national and international chemicals management initiatives, including:

- the Federal Environmental Quality Guidelines, and other guidance documents for the quality of recreational water; and
- water and air sampling through, for example, the Great Lakes Water Quality Agreement, the Arctic Monitoring and Assessment Programme and Global Atmospheric Passive Sampling.

CMP collaborated extensively at various international forums to further chemicals management, including:

- engagement in, and response to, a number of global chemicals and waste management conventions, such as the Basel and Rotterdam conventions;
- collaboration with international partners, such as the Organization for Economic Cooperation and Development, to conduct joint research on new methodologies;
- updating or developing global guidelines;
- participating in global biomonitoring initiatives; and
- coordinating action on chemicals management at global conventions.

Throughout 2021-22 and 2022-23, CMP program partners published more than 80 peer-reviewed articles, and shared scientific research through numerous webinars and presentations. Additionally, Health Canada continued to act as the home to the WHO Collaborating Centre on Environmental Health, which aims to facilitate international collaboration on managing the health effects of chemical exposures.

Strengths and challenges in science-based decision making

The program has leveraged in-house scientific expertise, national and international scientific collaborations, and data from ongoing monitoring and surveillance programs. Although some research activities respond to emerging CMP priorities, newer substances will require the development of robust laboratory methods to examine their environmental and human health risks.

In-house scientific expertise and ongoing national and international collaborations support the program in advancing chemicals management at regional, national, and international levels. Departmental branches have created working groups, such as the CMP Research and Monitoring and Surveillance Network, to support discussions and sharing knowledge acquired from ongoing scientific activities and research priorities.

Document review and interviews indicate that research priorities are tailored to respond to risk assessment and risk management needs and priorities. The existence of biobanks, such as CHMA and MIREC enable CMP to address emerging and future needs. These archives of biomonitoring data and samples can be used to support evolving program needs, including the analysis of additional priority substances, examining cumulative effects, and addressing new research questions.

Some internal interviewees noted that the program faces a continued need to develop and test robust laboratory-based methods to examine environmental and human health risks posed by priority existing substances and chemical mixtures. For example, as ECCC laboratories did not have laboratory methods in place to

analyze certain chemicals, it sought support from a provincial government laboratory to develop more sophisticated analytical methods to address program needs. A few internal interviewees attributed this to resource limitations at ECCC; however, there may be value in partnering with others to fill research gaps.

Financial data analysis indicates overspending in research at Health Canada of 7% in 2021-22 and 11% in 2022-23, while ECCC spending was slightly under budget for both years, at 93% and 96% respectively. Monitoring and surveillance activities spending was similar for ECCC for both years (95% and 92% respectively). On the other hand, actual expenditures of monitoring and surveillance activities at Health Canada varied over the last two years with spending under budget in 2021-22 (89%) and within budget (101%) in 2022-23. See Appendix 6 for more detail.

Some internal interviewees said that because robust scientific research takes time, there is a need for early engagement of research, monitoring, and surveillance teams when prioritizing substances for risk assessment considerations. This is particularly important when new substances are identified for risk assessment,

as robust scientific methods to detect such substances may not currently be available.

*“.....the **timeline to fill gaps in knowledge** (through research, and) be more conclusive **is longer than the timeline** (for) which that particular (risk) assessment is **open for work**”*

(Internal Interviewee)

A few internal interviewees identified additional challenges, including limited in-house scientific expertise to develop analytical methods across a variety of substances, and a continued need to focus on upcoming issues, including:

- continuing efforts to establish models for non-animal testing;
- focusing on disproportionately affected populations, including occupational exposures; and
- addressing the gap in systematic human biomonitoring of First Nations people living on reserve and of the Métis people.

Key Findings: Theme 4 – Collaboration, outreach, and engagement



CMP produced outreach and knowledge products that have been accessed and used by external partners, stakeholders, and the public. However, information can be hard to find or difficult to understand for non-technical audiences. The Healthy home campaign was an example of how the program successfully informed people in Canada of the risks of chemicals and could offer best practices to improve the accessibility of CMP information in other areas. CMP conducted routine partner and stakeholder engagements to inform them of program activities. While the program has taken steps to improve engagement efforts with disproportionately affected populations and Indigenous partners, this remains an area for improvement.

Public outreach and knowledge sharing

Achievement of outcomes

CMP produced knowledge products that are accessed and used by most external partners, stakeholders and the public. The program also conducted outreach activities, notably the Healthy home campaign. These activities helped these groups take action to protect human health and the environment against toxic substances.

For Theme 4, Health Canada is expected to help people in Canada use information to minimize the health and environmental risks of harmful chemicals.

To do this, CMP created and shared information through knowledge products for technical audiences, the public, and intermediary organizations that help disseminate information. Products were shared using the CMP and Healthy home webpages on Canada.ca, social media, and emails to mailing list subscribers. Knowledge products included:

- draft and final publications on risk assessment conclusions and risk management decisions;

- fact sheets and risk assessment summaries of new substance assessments;
- risk assessment and risk management information sheets;
- chemical substance fact sheets; and
- plain language summaries of CMP actions.

The program also conducted outreach activities via in-person and virtual presentations and conferences. Additionally, Health Canada continued to run the Healthy home public information campaign to educate people in Canada on how to keep safe and minimize exposure to harmful chemicals in common household products.⁴ The campaign maintains a website and associated marketing and social media campaigns, as well as in person and online events.

People in Canada, external partners and stakeholders accessed this information on an ongoing basis. Access to CMP web content increased over the past two years, with 31,500 unique visitors in 2021-22 and around 44,000 unique visitors in 2022-23. Over 9,500 subscribers to the CMP mailing list received notices of all CMP publications, such as consultation documents for proposed risk management instruments, notices published under CEPA, and screening assessments open for public comment.

From December 2022 to March 2023, the Healthy home advertising campaign recorded 23.5 million impressions, which represents the

number of times the ads were seen by or displayed on screen to users. Program performance data and documents showed that those who have accessed CMP information intended to use or have used it to minimize risks from harmful chemicals. Additionally, performance data indicated that Health Canada met all applicable targets under Theme 4 to promote the use of CMP information


among people in Canada. See Appendix 4 for more detail. Reports from the Healthy home campaign showed it has enabled access to clear and useful information on chemicals, including to populations at greater risk of negative health effects from exposure. See Figure 2 below.


Figure 2: Spotlight on the Healthy home campaign



Launched in 2019, the Healthy home campaign aims to increase awareness of chemicals and pollutants within homes and provide tips to people in Canada for managing and reducing risks. Informed by public opinion research on the knowledge, awareness and behaviors of people in Canada on environmental health issues, the campaign offers outreach products designed to address knowledge gaps and unique needs across a diverse audience.

The campaign covers key topics including indoor air and water quality, exposure to radon and chemicals contained in specific consumer products like pesticides for gardening and chlorine used in pools. The campaigns raises awareness through social media platforms, a Healthy home website, and in-person engagements with community organizations, universities and the public. The campaign also shares specific and relevant information for populations that may be disproportionately impacted and at-risk populations through targeted outreach products on the website, such as 'Chemicals and pollutants in the home: Tips for pregnancy and preparing for baby'. The campaign also conducts targeted social media outreach addressing issues faced by renters, seniors, and parents of young children.

Social Media (2021 to 2023)	
	260 posts
	42% of posts performed above target engagement rate

Website (2021 to 2023)	
	Over 400,000 visits
	44% increase in visits from 2019-2020

Outreach Events (2021 to 2023)	
	95+ organizations engaged
	3,000+ people reached
	>90% reported increased knowledge

Usability testing conducted for the Healthy home website in 2020 revealed favorable results and highlighted flexibility and ease of use as well as understandability of content. While the web content does contain some technical information, most information was considered well explained and the chemical and pollutant index was recognized for its usefulness.

Some external interviewees described using information from CMP publications primarily to participate in consultations and provide feedback on CMP decisions. Industry and other government department interviewees said they also took actions based on CMP information. For example, a few industry representatives mentioned that CMP publications helped them anticipate what substances may need to be replaced in their products and enabled them to prepare for forthcoming regulatory actions.

Additionally, several external interviewees described sharing CMP information with their colleagues or members of their organizations, and a few others reported using the information to advance their own research or work. For instance, representatives of the Northern Contaminants Program said they benefited from the methodologies developed and published by CMP to enable them to detect and analyze toxic chemicals important to the health of people living in the North.

Strengths and challenges of outreach and knowledge-sharing

CMP produced a large quantity of publicly available information about its activities. These publications promoted transparency and were seen as credible sources of information. The program also leveraged partnerships to enhance the reach of its knowledge products. However, CMP information was not always easily accessible or understandable for non-technical audiences.

Several external interviewees described the CMP website as being 'rich in information' and appreciated the availability of materials on risk assessment and risk management approaches and decisions. Nonetheless, some external interviewees indicated they had faced challenges finding the information they needed because the CMP website was difficult to navigate, which is particularly difficult for the public and those less familiar with the program. For example, the majority of industry interviewees said they sometimes struggled

to find all the compliance information related to a specific substance because publications are 'not organized intuitively' and the website's search tool does not pull up a comprehensive set of results. This was particularly relevant for small- and medium-sized companies that do not have enough resources to research the various risk management instruments implemented by the program. CMP staff are aware of this issue, as many internal interviewees also acknowledged these shortcomings.

The program leveraged its relationships with external partners and stakeholders to increase the reach of its knowledge products. CMP collaborated with various industry working groups to communicate program-related information, which industry representatives confirmed in interviews was an effective outreach method. Meanwhile, CMP shared information with intermediary organizations such as healthcare professionals, early childhood educators, and national Indigenous organizations, to target outreach to subsets of the public at greater risk of exposure or harm. In particular, the Healthy home campaign adapted its materials and outreach methods to reach such populations. For example, in 2022-23, CMP developed game-based learning activities to teach 500 elementary school students in Quebec about environmental health and targeted a postcard mailing campaign on preventing poisoning to 117,200 households across rural Canada. Additionally, Health Canada continued regional partnership with key external partners such as EcoSchools to expand the reach of the Healthy home campaign to students throughout Canada. The Environmental Health Action card was used by over 300 schools and 37,000 students and school staff across six provinces.

Outside of the Healthy home campaign, the evaluation found areas for improvement. Although efforts were made to share CMP's other resources, the evaluation found the information itself can sometimes be difficult to understand, particularly for non-technical

audiences. This challenge was raised by both internal and external interviewees. Areas needing clearer communication included:

- clarifications of why CMP's risk management decisions may differ from those of other countries;
- explanations as to why some substances that are assessed as toxic do not pose a risk to the public, in order to avoid creating unnecessary fear; and
- implications for retailers and manufacturers who buy or use chemicals, rather than produce them.

Of note, despite some efforts to communicate Healthy home campaign materials to Indigenous audiences, most interviewees from national Indigenous organizations noted that CMP information was not presented in way that was easy to understand or useful to Indigenous populations. They highlighted how distinct Indigenous populations have different information needs and communication preferences that need to be accounted for in CMP's outreach activities.

Notwithstanding challenges with clarity in its communication, CMP's information was generally seen as credible. Public opinion research of the knowledge, awareness, and behaviours on environmental health issues among people in Canada, commissioned by the program in 2022, found an increase in their confidence in the Government of Canada as a source of information. The research found 25% of survey respondents had consulted the Government of Canada website for information on potential health risks in their home in 2022, compared with only 5% in 2016. It should be noted that the research took place in the midst of the COVID-19 pandemic, which may have influenced public awareness and perceptions of the Government of Canada website as a source for health information.

While Health Canada produced and shared information about protecting human health, the evaluation found minimal public-

facing information about reducing risks of toxic substance exposure to the environment. Some interviewees from ECCC agreed that this is a gap in their outreach activities and program financial data confirmed that ECCC did not receive funding under Theme 4.

Stakeholder engagement and collaboration

Achievement of outcomes

CMP regularly engaged with external stakeholders through routine consultations and multilateral meetings. To support capacity-building for stakeholder engagement, CMP launched the Engagement and Outreach Contribution Program in 2022.

In addition to outreach and knowledge-sharing activities, CMP promoted information use to minimize the health and environmental risks of harmful chemicals through engagement with external partners and stakeholders. These included representatives of regulated industries, national Indigenous organizations, representatives from all levels of government, international partners, academics, and CSOs.

As discussed under each of the thematic work areas, Health Canada and ECCC conducted a variety of routine engagement activities such as publishing risk assessment and risk management documents for public comment and conducting consultations.

The program also hosted multilateral stakeholder meetings to collaborate and exchange information with external partners and stakeholders. A few external interviewees from industry noted the benefits of the CEPA Industry Coordinating Group in receiving CMP program updates and participating in technical discussions.

Previously, CMP convened a Stakeholder Advisory Council to gather external input on program implementation and to facilitate information-exchange among various CMP external partners and stakeholders⁵. The program also convened a Science Committee composed of external subject matter experts to advise on scientific considerations for CMP delivery⁶. The most recent terms of reference for both the Advisory Council and the Science Committee were concluded in the spring of 2021. The program plans to convene expert workshops as needed, as an alternative to the CMP Science Committee.

Finally, to promote capacity for stakeholder engagement among external partners and non-industry stakeholders, CMP launched an Engagement and Outreach Contribution Program Call for Proposals in January and October 2022. The contribution program is intended to foster broader participation in CMP from health organizations, disproportionately affected populations, Indigenous partners, academics, and the general public. Of note, the contribution program has an Indigenous Participation Stream to support efforts to build relationships with Indigenous partners. Since its launch in 2022, the program signed contribution agreements with five organizations across the country and successfully distributed 100% of its allocated funding. Funding recipients included the NB Lung, the Newcomer Centre of Peel, Inuvialuit Regional Corporation and the Maliseet Nation Conservation Council.

Strengths and challenges of engagement and collaboration

CMP had clear and informative engagements with regulated industry representatives. However, the program faced challenges in fostering meaningful engagement with civil society organizations and Indigenous partners. External stakeholders and partners felt that engagement quality had declined over the pandemic.

Both internal and external interviewees reported regular engagements between CMP and industry stakeholders representing a variety of sectors. Engagements were primarily conducted through working groups, although some industry representatives also relayed instances of bilateral communication when necessary, such as for clarifying compliance requirements. All industry interviewees described having clear and informative engagements with CMP staff, both in larger stakeholder meetings and through bilateral meetings and communications.

In contrast, all interviewees representing CSOs reported experiencing barriers and limitations in their engagement with the program. For example, several interviewees said they had never received responses to their comments submitted on CMP documents published by Health Canada. Consequently, they were unable to determine whether their feedback was taken into consideration. Even with the Toxic Caucus created through CMP's contribution program, several CSO interviewees described having very few dedicated engagements between their sector and CMP.

Additionally, documents and interviews illustrated how the program faced challenges in fostering meaningful engagement and collaboration with Indigenous partners. Interviewees from national Indigenous organizations recommended that future engagements highlight priorities for each distinct Indigenous group, that is, the First Nations, the Inuit, and the Métis, as their interests and needs differ. Additionally, the majority of interviewees also requested more capacity-building opportunities to support Indigenous engagement, noting that there is an opportunity to expand on the current contribution program.

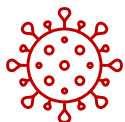
Of concern, some external interviewees from various groups felt that the quality of CMP's engagements has declined in the last two

years due to the conclusion of the Stakeholder Advisory Council, the COVID-19 pandemic, and staff turnover. While there were divided views about the effectiveness of the Advisory Council, many acknowledged it was useful for building relationships and communicating the program's priorities and approaches. Furthermore, external interviewees shared that recent stakeholder meetings have been less meaningful due to the pivot to less tailored and less interactive virtual engagements during the pandemic. Finally, internal documents described some difficulty in retaining staff. This contributed to a few external interviewees feeling the resulting staff turnover hampered relationship building, as there was less corporate memory on sector-specific issues. External interviewees across a variety of stakeholder groups recommended increasing bilateral engagements to enable more meaningful and relevant discussions and more proactive communication about program plans.

It should be noted that the program has taken steps to improve outreach and participation during the period evaluated. In addition

to the launch of the Engagement and Outreach Contribution program in 2022, the program also published 'A Vision for the Chemicals Management Plan Program Engagement: 2021-2024 and beyond'. This engagement plan addresses gaps and identifies ways to better collaborate with civil society and national Indigenous organizations towards meaningful and more inclusive participation. As a result of these recent efforts, Health Canada has reported significant overspending under Theme 4 in the past two fiscal years. Although the Theme 4 budget is relatively small compared to the other themes, the Department overspent by 52% in 2021-22 and by 66% in 2022-23 for communication activities, such as increased outreach and engagement through the Healthy home campaign, including conduct of public opinion research, advertising and engagement of digital influencers. Additionally, stakeholder engagement on the future directions of regulatory work, enhanced Indigenous engagement and international collaboration with the World Health Organization were funded. See Appendix 6 for more detail.

Key Findings: Impact of COVID-19



The COVID-19 pandemic negatively affected CMP activities by limiting research and data collection, delaying certain publications, and restricting external engagement. However, in response to these challenges, program staff innovated and continued delivering on commitments, reflecting the program's adaptability.

Public health measures and emergency response needs paused or delayed many research activities, as laboratories were closed, and data collection activities were put on hold. The pandemic also paused scientific collaborations due to limited partner capacity and travel restrictions. Given that regulatory activities rely on research data, these delays subsequently delayed risk assessment and risk management decisions.

The pandemic also briefly delayed the publication of screening assessment reports and risk management documents due to communication resources being diverted to COVID-19 efforts. However, publications resumed by May 2020. Of note, during the publication pause, the program continued to develop materials and, through the CMP mailing list, it communicated with external partners and stakeholders about the delays and provided tentative publication dates.

Furthermore, in response to pandemic-related public health measures, especially in 2020, staff had to scale down or pause activities involving direct stakeholder engagement. The evaluation noted examples of lower participation in public consultations, suspended compliance promotion and enforcement site visits, as well as reduced engagement with industry and CSOs. Program documents also revealed how a planned retail engagement campaign to promote Health Canada's Healthy home campaign was put on hold due to the need to focus on COVID-related communications and outreach. Furthermore, the number of enforcement activities during 2020 and 2021 declined while the number of administrative verifications significantly increased (from 4% to about 30%) compared to previous years.

Despite these limitations, program staff adapted to support program activities throughout the pandemic. Most notably, there was evidence of a shift to virtual outreach and engagement strategies, such as virtual stakeholder workshops and digital exhibit booths. These alternatives helped diversify CMP's outreach

strategies and made CMP messaging more accessible, although some external interviewees felt virtual stakeholder meetings were less meaningful. Also, despite delays in original research data collection, the program continued to develop and publish chemicals management information and research papers throughout the pandemic, once the publication pause was lifted. For documents published for public consultation, the program provided external partners and stakeholders with flexibility in providing comments beyond the usual 60-day comment period.

Finally, the program supported the COVID-19 pandemic response by prioritizing and streamlining relevant work. For example, CMP moved to a new way of triaging and expediting the assessments of all new substances related to COVID-19 control and treatment, including pharmaceuticals, non-prescription health products, and polymers intended for use in medical devices. The program also implemented a new process to align new substances assessments with accelerated clinical trial application timelines for biologic drugs developed as COVID-19 therapies and vaccines.

Key Findings: Future challenges



CMP faces future challenges due to an increasingly complex chemicals management landscape and rising expectations from recent amendments to CEPA through Bill S-5. CMP's well-established functions and staff's preparedness put the program in a promising position to address future challenges. However, resource constraints and frequent program renewals hinder the program's ability to conduct long-term planning and implement new initiatives.

Future challenges for chemicals management in Canada

The Canadian chemicals management landscape is becoming increasingly complex due to the globalization of supply chains, the rapid developments in science, and the broader issues of climate change and Indigenous reconciliation. Additionally, recent CEPA amendments will increase expectations for new methodologies, processes, and considerations in risk assessment and risk management.

At the end of 2023-24, CMP will have addressed the initial list of priority substances. However, work in this area is ongoing and the program faces an increasingly complex chemicals management landscape with new expectations and priorities.

Documents and interviews flagged emerging challenges from increasingly complicated global supply chains. As described earlier, a globalized supply chain poses a challenge for risk management. Some products purchased internationally through e-commerce may not disclose the chemicals used by the foreign manufacturer and may not be subject to the legislative requirements as those produced domestically. Internal policy documents recognized that businesses, consumers, and regulators want greater transparency on the ingredients used in imported products to better reduce risks from exposure to toxic chemicals.

CMP will also need to contend with evolving domestic priorities for chemicals management, particularly from Bill S-5, the *Strengthening Environmental Protection for a Healthier Canada Act*. The Bill received Royal Assent in June 2023 and modernized CEPA through a series of amendments. To meet requirements of these amendments, the program will need to develop new methods, processes, and activities, such as:

- an implementation framework to set out how a right to a healthy environment, as provided under CEPA, will be considered in the administration of the Act;
- strategies to replace, reduce, or refine the use of vertebrate animals in the testing and assessment of substances;
- methods to determine the cumulative effects from exposure to multiple chemicals;
- application of a class-based assessment approach to avoid regrettable substitutions, which can occur when a chemical that becomes restricted is replaced by another that could pose even greater risks or moves risk to another population;
- risk assessments that consider potential impacts on populations that may be disproportionately impacted and on the environment;
- risk management tools that target 'hot spots', where pollution is impacting locations more heavily than others; and
- use of labelling and other means to provide meaningful information to the public⁷.

Moreover, CMP will need to keep pace with emerging science for both chemical production and risk assessments. It is estimated that there are currently between 40,000 to 60,000 industrial chemicals in commerce globally, which is 'exceeded by a larger, and growing number of chemical-intensive products' on the global market⁸. Bill S-5 requires the program to develop a new plan to examine the rapidly increasing number of chemicals and prioritize them for assessment.

At the same time, to remain agile and science-based, the program will need to understand and adopt new scientific methods and data sources. For instance, new approach methods (NAMs), which are broadly defined as any technology, methodology, approach or combination thereof that can be used to replace, reduce or refine animal toxicity testing and allow for more rapid or effective prioritization and/or assessment of chemicals⁹, are being developed. NAMs cover a broad array of new technologies, methodologies, or approaches, such as computational models. Meanwhile, new expectations under Bill S-5, including developing better understanding of cumulative effects, impacts on populations that may be disproportionately impacted and the environment, considerations of supply chain transparency, considerations of occupational exposures and improving hazard communication for chemicals used in the workplace (under the Hazardous Product Act), are expanding the scope of CMP's activities and will require additional research and data generation.

Finally, the program will need to adapt to broader issues that will have an impact on chemicals management, most notably climate change and Indigenous reconciliation. A few internal and external interviewees described climate changes' potential effects on risks to the environment, such as driving the emergence of new toxins or affecting the absorption of contaminants in nature. Additionally, the amended CEPA mentions that the Canadian government is

committed to implementing the United Nations Declaration on the Right of Indigenous Peoples (UNDRIP). Moving forward, the CMP is required to annually report on measures undertaken to advance Indigenous reconciliation in the context of the Act. As such, the program will see increased expectations and accountability in this area.

All of these growing complexities, emerging issues, and rising expectations represent key considerations for the renewal of CMP. Internal interviewees acknowledged that the program will need to manage expectations on what can be achieved with ongoing resource constraints.

Program's position to address future challenges

The program is in a promising position to address future challenges. CMP staff are well aware of their new context and have begun to adapt their work accordingly. The program can also leverage its strong processes and collaborations and draw on existing best practices that align with new expectations. A strategic comparison of resources to the list of new commitments will help the program determine its priorities.

As noted throughout the evaluation report, CMP is a well-established program with clearly defined processes for risk assessment, risk management, scientific research, outreach, and engagement that can help it face future challenges. Documents and internal interviewees indicated that program staff are aware of future challenges and are adapting their work to incorporate new science and considerations.

To start, the evaluation found evidence that CMP has already made efforts to prepare for new scientific advances and forthcoming CEPA amendments. For example:

- Through publication of notices of intent in Canada Gazette, CMP has signaled intent to advance efforts to reduce reliance on animal testing;
- As part of the 'Accelerating the Pace of Chemical Risk Assessment' initiative, CMP collaborated with international partners to research the application of NAMs for priority setting and risk assessment;
- Internal interviewees mentioned beginning to gather data, initiate discussions with partners, and validate methods for alternatives to animal testing;
- The recent PFAS report signalled that CMP is starting to use class-based approaches to risk assessment; and
- The program has drafted plans to conduct engagement ahead of changes to prepare an implementation framework to set out how the right to a healthy environment, as provided under CEPA, will be considered in the administration of the Act.

Meanwhile, documents and interviews mentioned that Bill S-5 presents opportunities for the program by offering new tools for chemicals management. For example, internal interviews and documents noted how Bill S-5 enables the government to publish a 'watch list' to serve as an early warning for substances that might meet the criteria of toxic if their use or exposures changes. This tool can help inform the public of potentially hazardous chemicals and it can encourage industry to select safer alternatives. However, it should be noted that a few industry representatives have expressed concerns that the 'watch list' could cause misunderstanding of the actual risks posed by listed substances.

Some internal CMP partners have already developed and implemented best practices for chemicals management that could support necessary transitions for the rest of the program. For instance, PMRA has been examining occupational exposures in their

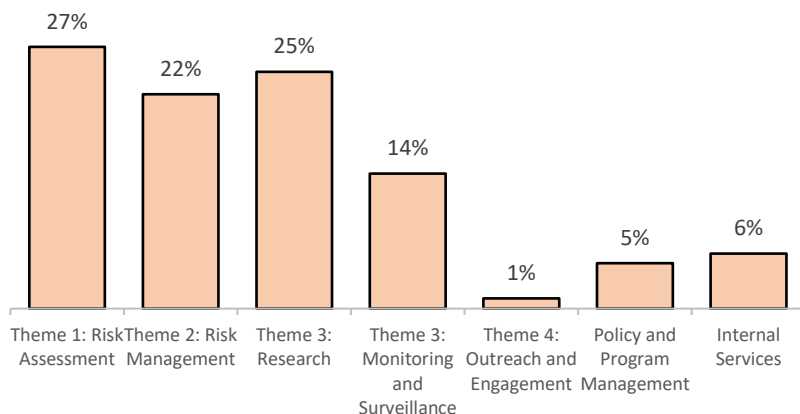
risk assessments well before such considerations were included under Bill S-5. Meanwhile, the Northern Contaminants Program, which received some time-limited funding from CMP, was recognized by some Indigenous interviewees as a model for meaningful Indigenous engagement on chemicals management. Learnings from the Northern Contaminants Program could support CMP in relation to the Government's commitment to implement the UNDRIP.

In spite of these promising factors, some internal interviewees warned that efforts to address all the new expectations and priorities outlined in Bill S-5 will require significant additional time and investment. As such, there is a need to review CMP's priorities in light of its new commitments, particularly with respect to resource allocation. This is because, as some internal interviewees mentioned, they 'don't have the right resources to do more than what we're currently doing', and how static resourcing could pose a risk to the program's ability to address future challenges, including a risk of 'delivering the program at a reduced pace and scope'. Moreover, both internal and external interviewees felt that frequent program renewals hinder the program's longer-term planning and stability. For example, recognizing that chemical management needs to examine long term impacts on human and environmental health, cyclical renewal of program funding makes it difficult to plan and commit stable funding for long-term scientific studies, including longitudinal biomonitoring studies. Additionally, frequent program renewals pose significant administrative burden on existing program resources across different branches, at times, taking staff away from core program work.

Program budgetary allocations of \$ 311.5 million over both years for Health Canada and ECCC saw combined 88% allocation to the thematic work areas of risk assessment (27%), risk management, compliance promotion and enforcement (22%) and science-based

decision making (39%). Thematic work area 4 (collaboration, outreach and engagement) received the lowest allocation (1%) of program funding, and funding was only allocated to Health Canada. See Figure 4 below.

Figure 4: CMP budgetary allocation to thematic work areas and program activities, from 2021-22 to 2022-23 (Health Canada and ECCC)



An analysis of CMP financial data shows that program expenditures were managed within the overall budget for both fiscal years under consideration. The program spent at least 90% of its budget within each thematic work area over the past two fiscal years. While research activities at both Health Canada and ECCC remained within budget, there was variance in other areas (see Figures 5 and 6). More significantly, there was overspending in risk assessment at ECCC, along with overspending in risk management, monitoring and surveillance, and outreach and engagement activities at Health Canada.

Figure 5: CMP budget and percent budget spent by thematic work area, from 2021-22 to 2022-23 (Health Canada)

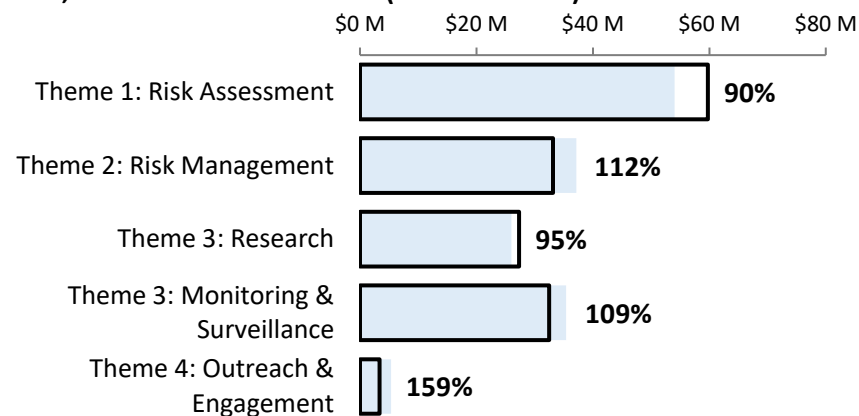
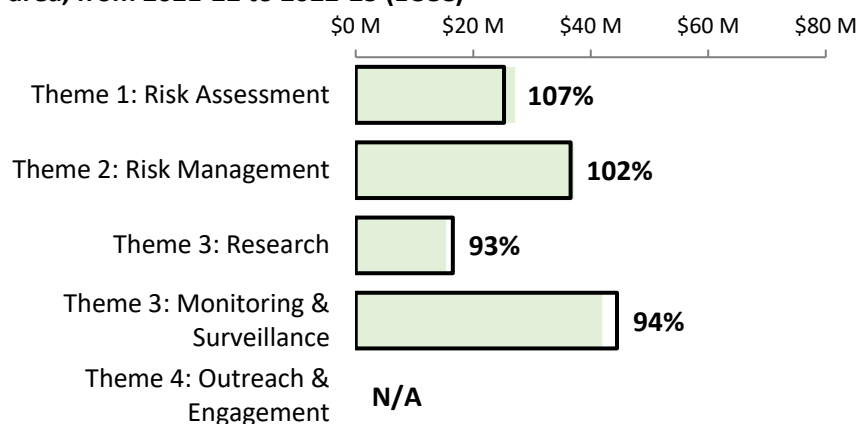


Figure 6: CMP budget and percent budget spent by thematic work area, from 2021-22 to 2022-23 (ECCC)



Finally, many internal interviewees reported that resource constraints negatively affected functions across CMP, at times, causing delays in work or resulting in staff 'working at the side of their desk'. In particular, a few internal interviewees expressed

concerns that administration of the large number of risk management instruments that have accumulated over the lifetime of CMP and conducting performance measurement evaluations will become increasingly challenging at current levels of funding. With the increasing complexity of risk assessments, demands for research on new methodologies, and the need to provide timely and robust data, it is anticipated that the program will continue to face demand for resources across all activity areas.

International approaches to chemicals management

Besides addressing evolving issues, the program would benefit from an examination of note-worthy international approaches to emerging areas of concern, including:

- environmental racism, disproportionately impacted groups, and hot spots;
- alternatives to animal testing; and
- safe chemical substitution and products.

Studying chemicals management approaches across different jurisdictions, including the United States, New Zealand, Australia, and the European Union, would enable CMP to identify promising international initiatives for further exploration.

Environmental racism, disproportionately impacted groups, and hot spots

Across jurisdictions, initiatives addressing issues of hot spots and disproportionately impacted populations within the United States and New Zealand stand out.

In the United States, the *Toxic Substances Control Act* is the primary chemicals management law at the national level, and requires the US Environmental Protection Agency (EPA) to identify and assess risks to susceptible and highly-exposed populations when evaluating risks of chemicals. To this end, several exposure assessment

guidelines and tools, including the 2019 *Guidelines for Human Exposure Assessment* and the ExpoBox exposure assessment toolbox have been developed. These aid assessors to include considerations of disproportionately impacted groups in chemical assessments. Additionally, the EPA is working to develop and implement new approaches and tools that are expected to improve considerations of the impact on communities. These include:

- a new human health assessment approach incorporating novel techniques, including genomic technology;
- a screening approach to determine risks faced by people and environmental systems in near proximity of chemical activities; and
- approaches for cumulative risk assessment.

The New Zealand government's approach to decision making particularly stands out in the way perspectives of indigenous Māori populations are incorporated. Legislated under the *Hazardous Substances and New Organisms Act, 1996* (HNSO), New Zealand's EPA has established several mechanisms to ensure decision makers have comprehensive awareness of, and consider Māori perspectives in all decision making, including through:

- a standing Māori advisory committee to advise the EPA Board on Māori perspectives for all decisions made in relation to the HNSO;
- a Māori policy unit within the EPA, that carries out Māori-specific impact assessments and provides results to support assessment approval processes;
- a mātauranga¹⁰ framework, designed to help EPA decision makers understand the implications of Māori knowledge, experience, values, and philosophy; and
- a public consultation process, required under the HNSO, through which Māori and other members of the public can make submissions related to chemical assessment applications.

Alternatives to animal testing

While Canada is considered a prominent leader in the implementation of alternatives to animal testing, initiatives in the US and the European Union are note-worthy. These include legislation and directives calling for a reduction of chemical substance testing on animals, along with actions supporting the development and implementation of NAMs. This includes the European Unions' *Registration, Evaluation, Authorisation and Restriction of Chemicals* (REACH) regulatory policy, that requires companies to undertake animal testing as a last resort. Notable actions include:

- the US EPA's goal to eliminate funding for animal testing by 2030 and commit research funding for NAMs; and
- the European Unions' strong data sharing requirements among companies producing or importing chemicals. This is meant to increase the availability and transparency of information and reduce the need for repeated animal testing.

Safe chemical substitution and products

The European Union plays a leading role in promoting safe and sustainable chemicals through the publication of the Chemical Strategy for Sustainability 2020, which outlines over 80 action items and implementation timelines. The European Union's comprehensive Safe and Sustainable by Design framework was introduced in 2022, and is providing a model for the Organisation for Economic Co-operation and Development's work on this topic. Key features of the framework include the application of guiding principles to support safe and sustainable design of chemicals and materials, along with the implementation of a four-step process¹¹ to assess safety, environmental, and socio-economic sustainability of a chemical or material. While there are some concerns that the

framework may be difficult to implement due to its complexity, this remains to be seen as the framework is currently in the testing phase.

Additionally, the US EPA's Safer Choice program is a non-regulatory partnership that aims to promote safe product design, green chemistry alternatives, and enables the selection of safer alternatives through informed substitution. Another emerging US EPA initiative includes the Value of Information Framework, which is currently under development, and the use of cheminformatics tools to inform safer substitution decisions. While directly supporting safer chemical development falls outside of the regulatory authority of major departments involved in chemicals management in Australia, a number of non-governmental voluntary and industry-led measures addressing the safe chemical substitution and products focus area are currently in place within the country.

Conclusion

In 2021-22 and 2022-23, more than 260 existing substances were examined and addressed by CMP. Since 2006, 95% of the 4,363 substances originally prioritized for assessment were addressed, in addition to a significant number of pre-market assessments of new substances, including pesticides. It is anticipated that by the end of 2023-24, CMP will complete addressing the initial cohort of prioritized substances.

To date, performance measurement evaluations show that program activities have been effective in reducing human and environmental exposures to specific toxic chemicals. Moreover, the program has made contributions to national and international scientific communities to support understanding the effects of harmful chemicals on human health and the environment, and to promote chemicals management.

The program has adopted several efficient and evidence-informed processes for substance screening and prioritization of risk assessment and risk management. To date, the program has developed and implemented more than 500 risk management actions for existing priority and new substances assessed to be potentially harmful to human health or the environment. However, the increasing complexity of substances and exposures and the need to develop advanced scientific methods for chemical risk assessment and to identify appropriate risk management measures under the most relevant legislation, present a challenge to the timely completion of risk management actions.

The program collaborates with a variety of internal partners, and conducts a range of compliance promotion, verification, and enforcement activities. Program transparency is supported by ongoing external partner and stakeholder engagement and public

comment periods for draft publications pertaining to the originally prioritized substances. While the program produces a large quantity of publicly available information, it is not always easily accessible or understandable for non-technical audiences.

Though the COVID-19 pandemic limited research opportunities and restricted external engagement, CMP continued to deliver on program commitments, and supported response to the COVID-19 pandemic through expedited assessments of COVID-19 vaccines and biologics, streamlining of relevant work, and creating innovative solutions like adopting virtual compliance promotion activities.

The globalization of supply chains, rapid developments in science, and broader issues like climate change and Indigenous reconciliation pose increasingly complex challenges and opportunities for the Canadian chemicals management landscape. Additionally, recent amendments to CEPA will require program review and response. CMP can leverage its strong processes and collaborations, and draw on existing best practices that align with addressing new expectations and future challenges. Given the continued need for chemicals management in a complex environment, and the fact that the initial cohort of prioritized substances will soon be addressed, consideration may be given to creating space for CMP to emerge as a long-term chemicals management program, as opposed to a short-term program that requires ongoing renewals. This would enable the program to undertake longer-term planning to effectively address current and future challenges. Additionally, there are a number of international programs, some in early stages of development, whose implementation and lessons learned, may be useful to consider.

Recommendations

The findings from this evaluation have resulted in the recommendations presented below.

Recommendation 1

Review program priorities and align resource allocation across all thematic work areas based on reviewed and/or renewed priorities.

CMP has nearly completed the assessment and, where needed, the development of risk management instruments for the initial cohort of existing priority chemicals. In addition to addressing the continued need for ongoing chemicals management, the program also needs to respond to a number of upcoming challenges, including:

- broader level prioritization in the light of the recently amended *Canadian Environmental Protection Act, 1999* (Bill S-5);
- increasingly complex chemistries, and rapidly developing scientific methodologies; and
- evolving international commitments.

Static funding and resource constraints were reported across the range of CMP activities. Additionally, the evaluation found evidence of over and underspending across different thematic work areas. Therefore, there is a need to review program priorities and financial and staff allocations across all CMP thematic work areas to effectively respond to current and future challenges.

Recommendation 2

Address the ongoing need for data and improve data infrastructure.

CMP requires a large quantity of scientific, monitoring, surveillance, and commercial use data to carry out its risk assessment and risk management activities. Besides leveraging international data and ongoing research, the program has several research, monitoring, and surveillance activities in place to provide data. However, challenges remain in acquiring sufficiently detailed data in a timely way, or obtaining new data that has not yet been collected or does not yet exist. Additionally, it was noted that at times, data needs for risk assessment of a particular substance may differ from its risk management. These highlight a continued need for research, monitoring, and surveillance activities. Also, earlier information-sharing across all thematic work areas should be considered to effectively align research and data collection activities with upcoming risk assessment and risk management initiatives.

While the evaluation found evidence of a few initiatives to improve internal IM/IT systems, outdated IM/IT and data infrastructure limitations affect program efficiency and operations. This continues to be an area of need, including making the wealth of programmatic information on the CMP website and the CEPA registry easily searchable for external partners and stakeholders.

Recommendation 3

Improve risk communication to people in Canada and support technical communication across different partner and stakeholder groups.

CMP produces a number of knowledge products that are accessed by numerous audiences, which include technical audiences and the general public. The evaluation found evidence that the information

targeting non-technical audiences, including retailers, manufacturers, and national Indigenous partners, was, at times, difficult to understand. However, the Healthy home campaign has been well-received by the public as a successful example of the program's communication activities for non-technical audiences. Lessons learned from the Healthy home campaign should be examined and used strategically to develop other key externally facing communication products, whether for external partners, stakeholders, or for people in Canada.

Recommendation 4

Develop and maintain engagement across different external partner and stakeholder groups, including Indigenous partners.

Meaningful engagement with partner and stakeholder groups is important for the program to achieve its goal of protecting human health and the environment by ensuring diverse voices are heard and considered in program policy and decision making. While the evaluation found evidence of insufficient meaningful engagement with Indigenous partners, the recently launched contribution program provides an avenue to improve the program's engagement with numerous partners, including CSOs and Indigenous partners. During the implementation of the program, consideration should be given to the regular identification of lessons learned and the adoption of best practices to enhance engagement across thematic work areas.

Management Response and Action Plan

Evaluation of Chemicals Management Plan

Recommendation 1				
Review program priorities and align resource allocation across all thematic work areas based on reviewed and renewed priorities.				
Management response				
Management agrees with the recommendation. With amendments to the <i>Canadian Environmental Protection Act, 1999</i> (CEPA, 1999) in 2023, and increasing numbers of chemicals available, the program's approaches to and priorities for chemicals management are evolving. The program will review program priorities to respond to these changes, and consider associated resource allocations, commensurate with funding levels.				
Action Plan	Deliverables	Expected Completion Date	Accountability	Resources
Review program priorities and develop a priority plan which aligns resource allocations to priority areas of work within the allocated budget.	1. Approved program implementation plan, with resource allocations.	December 31, 2024	Office of Primary Interest (OPI) DG: Safe Environments Directorate (SED), Healthy Environments and Consumer Safety Branch (HECSB), Health Canada (HC) Offices of Secondary Interest (OSI) DG: Industrial Sectors and	Existing resources

			Chemicals Directorate (ISCD), Environmental Protection Branch (EPB), Environment and Climate Change Canada (ECCC); DG: Science Reporting and Assessment Directorate (SRAD), Science and Technology Branch (STB), ECCC	
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Recommendation 2				
Address the ongoing need for data and improve data infrastructure.				
Management response				
Management agrees with the recommendation. The program uses a wide variety and extensive volume of data to carry out its activities. It will continue to work to address and coordinate its data (for example, for risk assessment and risk management) and data infrastructure needs, commensurate with funding levels.				
Action Plan	Deliverables	Expected Completion Date	Accountability	Resources
Develop, consult on and publish the Plan of Chemicals Management Priorities, that will prioritize program data needs.	1. Published Plan of Chemicals Management Priorities	June 30, 2026	OPI DG: SED, HECSB, HC OSI DG: Environmental and Radiation Health Sciences Directorate (ERHSD), HECSB, HC; DG: SRAD, STB, ECCC	Renewed resources, pending level
In the context of ongoing efforts to modernize digital services in support of regulatory development and implementation at ECCC, review program data infrastructure requirements for the CMP program and develop recommendations to improve IM/IT systems, commensurate with the overall priorities for the regulatory data modernization work and with related	2. Approved plan on improvements to data infrastructure to support CMP data collection, reporting and information sharing, as part of the Department's Regulatory Services Modernization Initiative.	September 30, 2025	OPI DG: Legislative and Regulatory Affairs Directorate (LRAD), EPB, ECCC OSI DG: ISCD, EPB, ECCC; DG: SRAD, STB, ECCC	Renewed resources, pending level

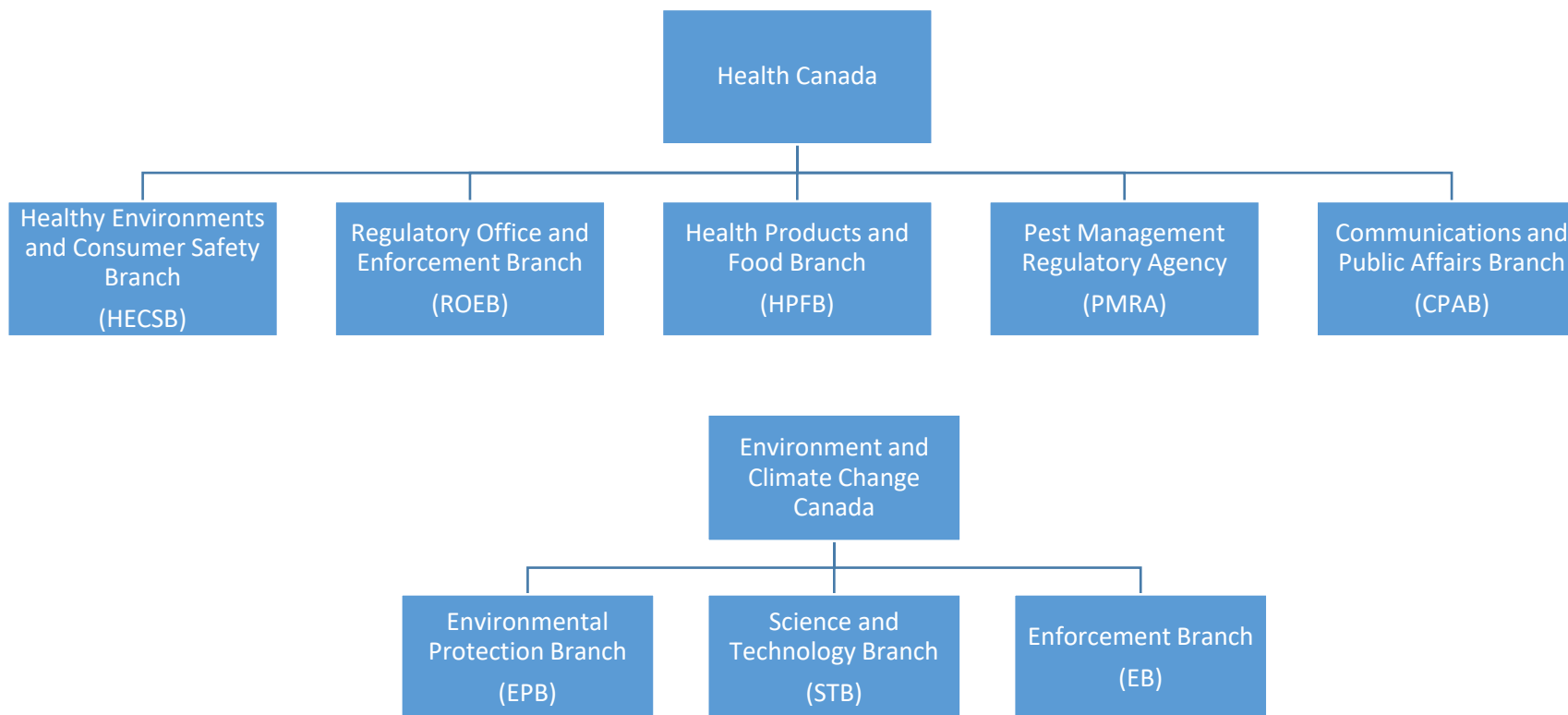
initiatives at HC and with the funding allocated to this area of work.				
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Recommendation 3				
Improve risk communication to people in Canada and support technical communication across different partner and stakeholder groups.				
Management response				
Management agrees with the recommendation.				
Action Plan	Deliverables	Expected Completion Date	Accountability	Resources
Improve and expand technical CMP risk communications to stakeholders, partners, and the public (e.g., specific audiences or stakeholders, forums, messaging, tools, products, communications channels)	1. Completed scan of existing technical risk communications approaches.	December 31, 2024	OPI DG: SED, HECSB, HC OSI DG: ISCD, EPB, ECCC	Renewed resources, pending level
	2. Approved work plan for improvements to CMP technical risk communications.	December 31, 2025	OPI DG: SED, HECSB, HC OSI DG: ISCD, EPB, ECCC; DG, Environmental Health and Pesticides Directorate (EHPD), Regulatory	Renewed resources, pending level

			Operations and Enforcement Branch (ROEB), HC	
Identify chemicals that the Government is watching to support information sharing to importers, manufacturers and consumers	3. Published “Watch List” of chemicals.	December 31, 2025	OPI DG: SED, HECSB, HC OSI DG: ISCD, EPB, ECCC	Renewed resources, pending level

Recommendation 4				
Develop and maintain engagement across different external partner and stakeholder groups, including Indigenous partners.				
Management response				
Management agrees with the recommendation. Engagement with external partners, such as Indigenous organizations, and stakeholder groups is important for the program as it works to consider and address disproportionately impacted populations. This was envisioned with the amendments to CEPA 1999 in 2023, which added a Right to a Healthy Environment within the Act. The program will review and update its engagement plans, commensurate with funding levels.				
Action Plan	Deliverables	Expected Completion Date	Accountability	Resources
Review and update <i>A Vision for the Chemicals Management Plan Program Engagement: 2021-2024 and Beyond</i> , with lessons learned and updates to the plan, as necessary.	1. Progress report on the implementation of the <i>Chemicals Management Plan Program Engagement: 2021-2024 and Beyond</i>	September 30, 2025	OPI DG: SED, HECSB, HC OSI DG: SRAD, STB, ECCC	Renewed resources, pending level

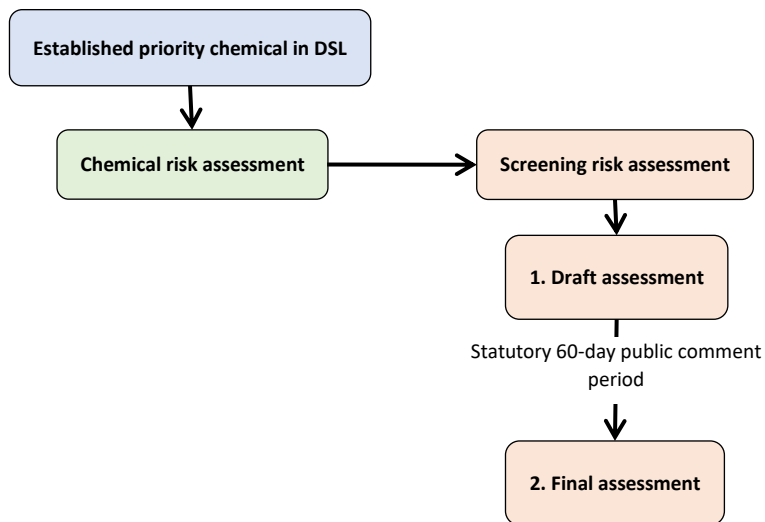
Appendix 1: Departmental branches engaged with the Chemicals Management Plan



Appendix 2: Program description

Theme 1: Chemical risk assessment of substances under CMP involves the review of existing priority substances currently in commerce and identification and assessment of new substances entering the Canadian market. Prioritized existing substances undergo risk assessments to determine whether they meet or are capable of meeting any of the criteria for toxicity set out in section 64 of the *Canadian Environmental Protection Act, 1999* (CEPA). Draft screening assessments are published for a 60-day public comment period, followed by publication of final screening assessments.

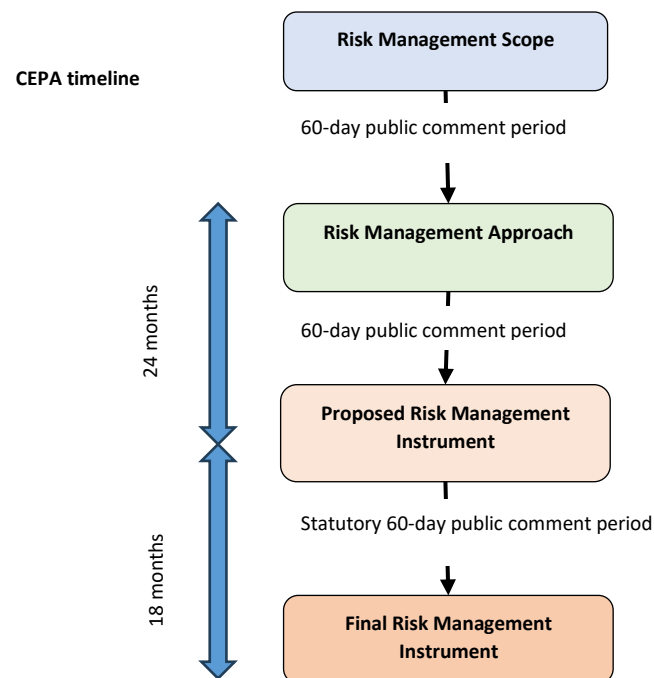
Figure 7: Risk assessment process and timelines for established priority substances



Theme 2: Chemical risk management of substances is advised by an iterative, multi-disciplinary process and results in the publication of the risk management scope, followed by a risk management

approach document. These documents outline the programs' thinking on risk management of identified substance(s) that meet one or more of the toxicity criteria set out in section 64, CEPA, and are published for 60-day public comment periods. Prior to finalization of instruments, consultation documents and draft risk management instruments are published for public comment. These publications inform external partners and stakeholders and solicit feedback on the key elements of proposed risk management instruments.

Figure 8: CMP chemicals risk management process and timelines



Risk management of substances under CMP is conducted through a series of inter-related activities. These include the development and

publication of risk management instruments and their implementation through compliance promotion and enforcement activities. See figure 9 below.

Theme 3: Science-based decision making is comprised of CMP research, monitoring, and surveillance activities perform the vital function of providing scientific data to inform CMP decisions. Activities include field-based environmental sample collection across Canada, human biomonitoring, food surveys, and laboratory-based research.

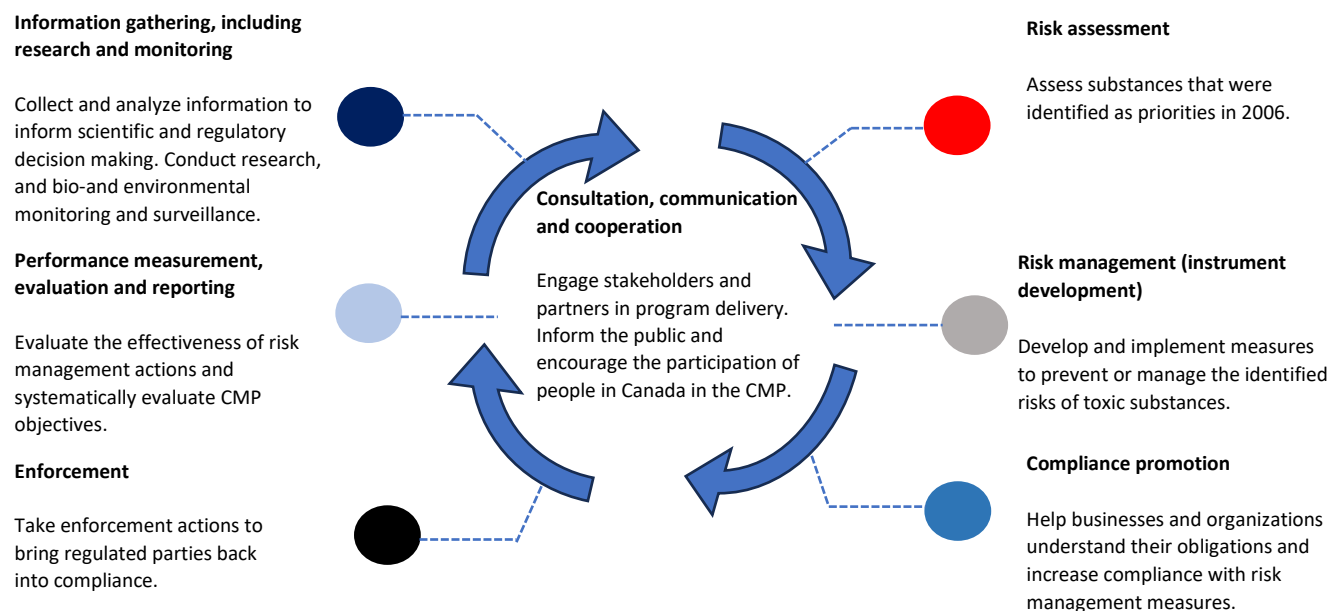
Theme 4: Collaboration, outreach, and engagement by the program covers both external partners and stakeholders and the general public. The desired outcome is that people in Canada use information to minimize the health and environmental risks of

harmful chemicals. Stakeholder and partner engagement activities support program decision-making and ensure accountability and transparency. Public outreach activities and publication of knowledge products inform the public on government actions to protect their health and the environment, and encourage the public to take action.

The CMP Cycle






Risk management is a cyclical process that starts with information gathering and risk assessment, and continues beyond the implementation of a risk management instrument to include monitoring and performance measurement in order to determine the relevance, success, and effectiveness of implemented instruments.

Figure 9: CMP's chemicals management cycle of existing priority substances



Appendix 3: Data collection and analysis methods

Evaluators collected and analyzed data from multiple sources. Data collection occurred between May and September 2023.

Internal and External Interviews	
	<ul style="list-style-type: none"> OAE conducted interviews between May 28 and August 25, 2023. Internal interviews involved 17 Health Canada interviewees and 17 ECCC interviewees. External interviews were conducted with several groups, including industry representatives, associations of select industry sectors, CSO representatives, independent researchers and academic experts, representatives from three national Indigenous organizations and other federal government departments. A total of 19 external interviews were conducted. OAE conducted thematic analysis of interview notes using NVivo 12 software.
Document Review	
	<ul style="list-style-type: none"> OAE received and reviewed over 400 program documents from ECCC and Health Canada. Documents included annual reports, workplans, program outputs, tracking sheets, and communication tools. OAE conducted thematic analysis of documents using NVivo 12 software.
Financial Data Review	
	<ul style="list-style-type: none"> OAE reviewed program planned and actual spending for fiscal years 2021-22 and 2022-23.
Performance Data Review	
	<ul style="list-style-type: none"> OAE reviewed program performance data for Health Canada and ECCC for fiscal years 2021-22 and 2022-23.
International scan	
	<ul style="list-style-type: none"> OAE contracted a consultant to conduct a review of international approaches to chemicals management that are worth considering in the Canadian context. The review focussed on four jurisdictions, including the United States, the European Union, Australia, and New Zealand, and covered the following three topics: (1) environmental racism, disproportionately affected groups and hot spots; (2) alternatives to animal testing; and (3) safe chemical substitution and products. This component involved a review of program documents, grey literature, and 13 interviews (nine with jurisdictions, and four with international experts).

Data was analyzed by triangulating information gathered from the different methods listed above. The use of multiple lines of evidence and triangulation was intended to increase the reliability and credibility of the evaluation findings and conclusions.

The following scale was used to describe the significance of the qualitative findings in terms of the relative proportion of responses:

Number of interviewees expressing the same/similar view	Qualitative descriptor used in the report
More than 2 interviewees or more than 25%	'A few'
25% to 50% of interviewees	'Some'
51% to 74% of interviewees	'Majority'
75% to 90% of interviewees	'Most' or 'A large majority'
More than 90% of interviewees	'Almost all'

Limitations, impacts and mitigation strategies

Limitation	Impact	Mitigation strategy
Key informant interviews are retrospective in nature, providing only a recent perspective on past events.	This can affect the validity of assessments of activities or results that may have changed over time.	Triangulation with other lines of evidence substantiated or provided further information on data captured in interviews. Document review also provided corporate knowledge.

The evaluation considered the SGBA Plus Lens for Evaluation in its assessment of the Chemicals Management Plan activities. The Truth and Reconciliation Commissions' Calls to Action were considered in tandem with the SGBA Plus Lens. Although Official Languages were not specifically examined, they were not found to be an issue for CMP activities. Furthermore, an examination of the Sustainable Development Goals found them to be applicable for this evaluation. CMP activities contribute to a number of goals. These include:

- Goal 3 of ensuring healthy lives and promoting well-being for all at all ages. By assessing substances for potential health and environmental risks and implementing risk management actions, CMP activities contributed to this goal. CMP activities additionally contributed to Goals 3.4 (by 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment) and to Goal 3.9, (to substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination by 2030).
- Goal 12 of responsible production and consumption, where CMP contributions include research and monitoring activities, as well as participation and leadership in international engagement on chemicals. CMP also contributed to Goal 12.4 for achieving environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and

significantly reducing their release to air, water and soil in order to minimize their adverse impacts on human health and the environment. Both Health Canada and ECCC report on CMP activities in relation to Goal 12 including performance indicators related to the assessment and management of risks to human health and the environment posed by chemical substances found in food and food products, consumer products, cosmetics, drugs, drinking water and industrial release.

In conducting the evaluation, a single window was identified at Health Canada and Environment and Climate Change Canada, with whom the Office of Audit and Evaluation worked closely throughout the evaluation. The scope for this evaluation was shared with the Performance Measurement, Evaluation and Results Committee (PMERC) on May 15, 2023. The preliminary findings were presented at PMERC on October 19, 2023, and the final report will be presented at PMERC in January 2024.

Appendix 4: Horizontal initiative results

Theme Performance Indicator	Status of established indicator target							
	2021-22				2022-23			
	Met	In progress	Not met	Data not yet available	Met	In progress	Not met	Data not yet available
Theme 1 – Chemical risk assessment								
Outcome: Harmful chemicals are identified through risk assessments of established priority chemicals								
Percentage of the 4,363 existing chemicals prioritized under the CMP have been addressed		●				●		
Department-specific indicators								
Health Canada								
Percentage of existing chemicals addressed within targeted timelines	●				●			
Percentage of new substances (chemicals, polymers, and animate products of biotechnology) assessed within prescribed timelines	●				●			
Percentage of pesticide re-evaluations that are completed within specific timelines	Not applicable						●	
Percentage of pesticide special reviews that are completed within specific timelines	Not applicable						●	
Environment and Climate Change Canada								
Percentage of existing chemicals addressed within targeted timelines	●				●			
Percentage of new substances (chemicals, polymers, and animate products of biotechnology) assessed within prescribed timelines			●				●	
Theme 2 – Chemical risk management, compliance promotion, and enforcement								
Outcome: Potential human or environmental exposure to harmful chemicals is reduced								
Exposure or prevalence of a selected group of chemicals where risk management actions have been put in place	●				●			
Percentage of actions taken in a timely manner to protect the health of Canadians from substances found to be a risk to human health	●						●	
Percentage of actions taken in a timely manner to protect Canada's environment from chemicals found to be a risk to the environment			●				●	
Department-specific indicators								

Theme Performance Indicator	Status of established indicator target							
	2021-22				2022-23			
	Met	In progress	Not met	Data not yet available	Met	In progress	Not met	Data not yet available
Health Canada								
Percentage of planned compliance verifications completed	●						●	
Department-specific indicators								
Environment and Climate Change Canada								
Percentage of regulatees subject to regulatory and non-regulatory CMP instruments that are contacted through compliance promotion activities	Not applicable				●			
Percentage of non-compliance addressed by enforcement action	Not applicable				●			
Percentage of verified compliance for ongoing environmental violations during follow-up inspections	Not applicable				●			
Theme 3 – Science-based decision making								
Outcome: CMP research and monitoring and surveillance projects provide data to inform CMP decisions								
Percentage of research projects that inform program science-based decision-making	●				●			
Percentage of monitoring and surveillance activities that inform program science-based decision-making	●				●			
Department-specific indicators								
Health Canada								
Percentage of planned knowledge transfer activities completed related to research on chemicals of concern	●				●			
Percentage of planned knowledge transfer activities completed related to monitoring and surveillance on chemicals of concern	●				●			
Department-specific indicators								
Environment and Climate Change Canada								
Percentage of research projects that supports priorities for risk assessment and risk management	●				●			
Percentage of monitoring and surveillance projects that supports risk assessment and risk management decisions	●				●			
Theme 4 – Collaboration, outreach, and engagement								
Outcome: Canadians use information to minimize the health and environmental risks of harmful chemicals								

Theme Performance Indicator	Status of established indicator target							
	2021-22				2022-23			
	Met	In progress	Not met	Data not yet available	Met	In progress	Not met	Data not yet available
Percentage of Canadians who took recommended actions to minimize the health and environmental risks of harmful chemicals*	Not applicable					●		
Department-specific indicators								
Health Canada								
Percentage of Canadians who engaged in social media in order to actively learn more about minimizing the health risks of harmful chemicals	●				●			
Percentage of outreach participants who report an increase in knowledge about environmental health risks	●				●			
Percentage of outreach participants who intend to take recommended actions to minimize the environmental health risks of harmful chemicals	●				●			
Percentage of contribution funds committed to selected recipients to communicate evidence-based information about chemicals and health to Canadians	Not applicable				●			
Percentage of planned engagement opportunities completed with the participation of disproportionately impacted populations, including Indigenous peoples	Not applicable				●			





*Indicator baseline developed in 2021-22 with target to be achieved by 2027

Appendix 5: Select listing of CMP risk management instruments

Enforceable Instruments	Other Tools	Industry-led Actions and Other Actions
<ul style="list-style-type: none"> Regulations under the <i>Canadian Environmental Protection Act, 1999</i> (CEPA) Significant new activity provisions under CEPA Ministerial conditions, Ministerial prohibitions, Ministerial requests for additional information and Significant new activity provisions under CEPA for new substances Pollution prevention plans under CEPA Environmental emergency plans under CEPA Pollution prevention provisions under the <i>Fisheries Act</i> Prohibition on the deposit of deleterious substances into waters frequented by fish Regulations or prohibitions (Schedule 2 listing) under the <i>Canada Consumer Product Safety Act</i> Regulations under the <i>Food and Drugs Act</i>, including the Cosmetics Regulations Interim Orders and other temporary measures Market based tools: <ul style="list-style-type: none"> Deposit refund systems Environmental charges and taxes Tradeable units systems Financial incentives and subsidies Environmental liability 	<ul style="list-style-type: none"> Agreements Under CEPA: <ul style="list-style-type: none"> Agreements respecting environmental data and research Administrative agreements Suasive and voluntary tools under CEPA: <ul style="list-style-type: none"> Environmental objective Environmental quality guidelines Environmental release guidelines Codes of practice Other suasive or voluntary tools: <ul style="list-style-type: none"> Joint federal-provincial-territorial initiatives (Canada wide standards, guidelines, codes of practice) Environmental performance agreements 	<ul style="list-style-type: none"> Awards and recognition programs Extended producer responsibility Environmental choice program Listing under the <i>Food and Drugs Act</i> Voluntary labelling and disclosures Exchange programs Peer programs Technology development transfer Educational campaigns or programs

Appendix 6: CMP performance measurement evaluations (2021-22 and 2022-23)

To date, CMP has published risk management performance measurement evaluations (PMEs) for 11 different substances. Four PMEs were published during the timeline of the current evaluation and are presented in the table below. Other PMEs can be accessed from the CMP website¹².

					
Common name	Scientific name	First assessed	Assessed risk	Risk management instruments	PME result
Dioxins and Furans ¹³	Polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF)	1990	Health-organ dysfunction, neurotoxicity, possible carcinogen	<ul style="list-style-type: none"> Regulations Environmental code of practice Industry standards (Canada- wide) Pollution Prevention Planning Notices Maximum levels in food and livestock feed Elimination from pest control products 	<ul style="list-style-type: none"> 84% reduction in industrial emissions from 1990-2018 10-fold reduction in whole milk, 17-fold reduction in poultry and 6 to 16-fold reduction in ground beef concentrations 79% reduction in human breastmilk
DCM ¹⁴	Dichloromethane	1993	Health-organ dysfunction, neurotoxicity, probable carcinogen	<ul style="list-style-type: none"> Code of practice Pollution Prevention Planning Notices Cosmetic Ingredient Hotlist 	<ul style="list-style-type: none"> 99% reduction in industrial emissions 30 % reduction in ambient (outdoor) air concentrations A reduction in indoor air concentrations (more data needed to establish trend over time)
DEHP ¹⁵	Bis(2-ethylhexyl) phthalate	1994	Health-possible carcinogen	<ul style="list-style-type: none"> Regulations Cosmetic Ingredient Hotlist Risk management actions based on food surveys 	<ul style="list-style-type: none"> Exposure has declined since 2008, with levels in body concentrations among all ages and groups well below the Biomonitoring Equivalent*

					<ul style="list-style-type: none"> • At least, a 2-fold reduction in dietary exposure
NP and NPEs ¹⁶	Nonylphenol and its ethoxylates	2001	Environmental-water, aquatic life	<ul style="list-style-type: none"> • Water and sediment quality guidelines • Pollution Prevention Planning Notices • Regular environmental monitoring in sediment, surface and wastewater 	<ul style="list-style-type: none"> • Surface water samples well below Clean Water Quality Guideline levels • Fresh water sediment samples show reduced levels (more data needed to establish trend over time) • 99.99% reduction in textile mill discharge and use of NP and NPEs in manufactured products reduced by 96% in industry

*Biomonitoring Equivalent is the maximum amount of chemical that can be absorbed on a daily basis over a lifetime, without increased risk of adverse health effects.

Appendix 7: CMP financial data (FY 2021-22 and FY 2022-23)

		FY 2021-22			FY 2022-23		
		Budget (\$) (Million)	Expenditure (\$) (Million)	% Budget Spent	Budget (\$) (Million)	Expenditure (\$) (Million)	% Budget Spent
Theme 1: Risk Assessment	Health Canada	29.88	27.02	90%	29.90	27.00	90%
	ECCC*	12.63	13.61	108%	12.63	13.53	107%
Theme 2: Risk management, compliance promotion and enforcement	Health Canada	16.57	18.55	112%	16.57	18.60	112%
	ECCC	18.27	17.86	98%	18.27	19.32	106%
Theme 3: Science-based decision making: Research	Health Canada	16.25	17.38	107%	16.25	18.02	111%
	ECCC	22.22	20.75	93%	22.22	21.23	96%
Theme 3: Science-based decision making: monitoring and surveillance	Health Canada	13.67	12.19	89%	13.68	13.80	101%
	ECCC	8.25	7.81	95%	8.25	7.60	92%
Theme 4: Collaboration, outreach, and engagement	Health Canada	1.68	2.55	152%	1.68	2.80	166%
	ECCC	-	-	-	-	-	-
Policy and program management	Health Canada	7.40	4.56	62%	7.37	4.56	62%
Internal Services	Health Canada	3.82	3.82	100%	3.81	3.81	100%
	ECCC	5.12	5.12	100%	5.12	5.12	100%
Total	HC	89.27	86.07	96%	89.27	88.58	99%
	ECCC	66.50	65.15	98%	66.50	66.81	100%
CMP Total		155.77	151.22	97%	155.77	155.39	100%

Source: Chief Financial Officer Branch, Health Canada and ECCC, 2021-22 and 2022-23.

*PSPC and SSC expenditures at ECCC are including within presented Theme expenditures.

Endnotes

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- ¹ New Substances not already in the Domestic Substance List are assessed under the New Substances Regulation and triaged at Health Canada and ECCC. Once deemed to be low-risk, with low volume exposures (imported in quantities between 100 to 1,000 kilograms per year) Health Canada uses an internal service standard of 30 days to report on the indicator “Percentage of new substances (chemicals, polymers, and animate products of biotechnology) assessed within prescribed timelines”. ECCC uses 5 days as the service standard for the same assessment. As such, the difference between Health Canada’s and ECCC’s ability to meet timelines varies because of adoption of different service standards.
- ² Government of Canada (2021). Canadian Environmental Protection Act: [compliance](#) and enforcement policy. Available from : [Canadian Environmental Protection Act: compliance and enforcement policy - Canada.ca](#)
- ³ Jarvis, Carolyn (2021). "Cancer-Causing Air Pollution Forecast at 44 Times Annual Level in Ont. First Nation, Docs show | Globalnews.Ca." *Global News*, November 15, Web. Available from <https://globalnews.ca/news/8369470/ontario-first-nation-air-pollution-cancer-causing-chemicals-new-data/>.
- ⁴ Health Canada. (2018). Healthy home. Canada.ca. Available from <https://www.canada.ca/en/health-canada/services/healthy-home.html>.
- ⁵ Health Canada. (2016). Archived [2022-03-21] terms of reference of the chemicals management plan stakeholder advisory council. Available from <https://www.canada.ca/en/health-canada/services/chemical-substances/chemicals-management-plan/stakeholder-advisory-council/terms-reference.html>
- ⁶ Health Canada. (2013). Chemicals management plan science committee. Available from <https://www.canada.ca/en/health-canada/services/chemical-substances/chemicals-management-plan/science-committee.html>
- ⁷ Environment and Climate Change Canada. (2023). Bill S-5: Strengthening environmental protection for a healthier Canada Act. Available from <https://www.canada.ca/en/environment-climate-change/news/2023/06/bill-s-5-strengthening-environmental-protection-for-a-healthier-canada-act.html>
- ⁸ United Nations Environment Programme. (2019). *Global chemicals outlook II: From legacies to innovative solutions: Implementing the 2030 agenda for sustainable development*. United Nations Environment Programme.
- ⁹ Government of Canada. Available at: <https://www.canada.ca/en/health-canada/services/chemical-substances/fact-sheets/use-new-approach-methods-risk-assessment.html>
- ¹⁰ Mātauranga is defined, broadly, as a “body of knowledge, experience, values, and philosophy of Māori
- ¹¹ The four-step process includes considerations of hazard properties of the chemical material in question; assessing human health and safety of production processes, including all processes, from raw material extraction to production/manufacturing, processing, recycling and waste management; assessing environmental and human health risks in the use phase, including use-specific exposure to the chemical or material and associated risks; and assessing

environmental impacts along the entire life cycle of the chemical, from raw material inputs to end of product life, and considerations of other substances emitted during the lifecycle.

¹² Government of Canada. Available at : <https://www.canada.ca/en/health-canada/services/chemical-substances/performance-measurement-toxic-substances.html>

¹³ Government of Canada: Performance measurement evaluation for risk management of dioxins and furans (health component). Available at: <https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/evaluation-risk-management-dioxins-furans.html>

¹⁴ Government of Canada (2022): Performance measurement evaluation for risk management of dichloromethane. Available at: <https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/evaluation-risk-management-dichloromethane.html>

¹⁵ Government of Canada: Performance measurement evaluation for risk management of bis(2-ethylhexyl) phthalate (DEHP), health component Available at: <https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/evaluation-risk-management-dehp.html>

¹⁶ Government of Canada (2022): Performance measurement evaluation for risk management of nonylphenol and its ethoxylates, eco-component Available at: <https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/evaluation-risk-management-nonylphenol-ethoxylates.html>