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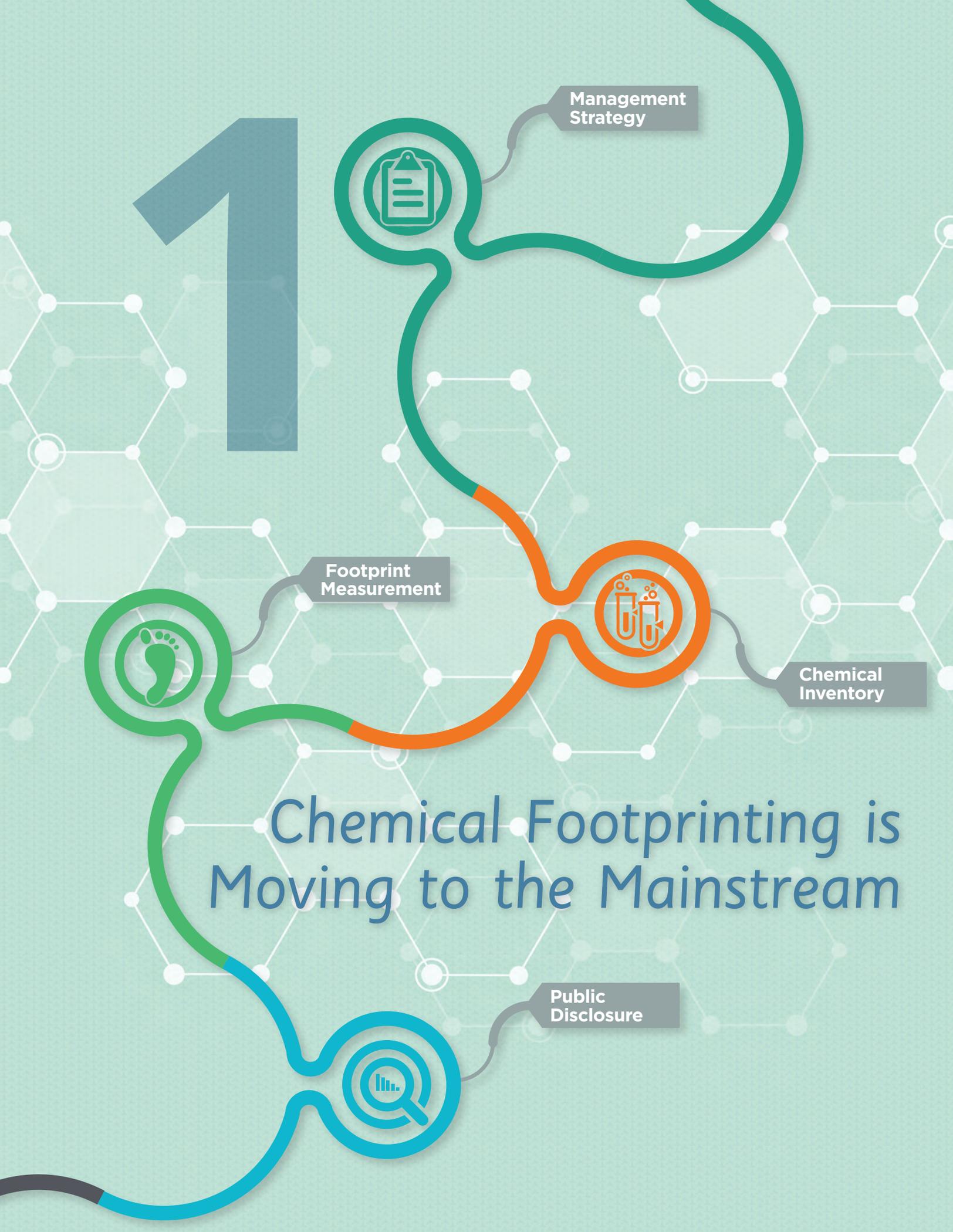
Management Strategy

Footprint Measurement

Chemical Inventory

## Chemical Footprinting is Moving to the Mainstream

Public Disclosure



## CHAPTER 1

## Chemical Footprinting is Moving to the Mainstream



As nature's building blocks, chemicals form the foundation of our material world. Yet all chemicals are not created equal. Some chemicals, such as lead, mercury, Bisphenol A (BPA), and formaldehyde, are inherently hazardous, while others, such as water (H<sub>2</sub>O), and oxygen (O<sub>2</sub>), are inherently safer to human health and the environment. Hazardous chemicals are pervasive in consumer products and many end up in our bodies and in the environment. Yet there are clear pathways to replacing these hazardous chemicals with safer alternatives.

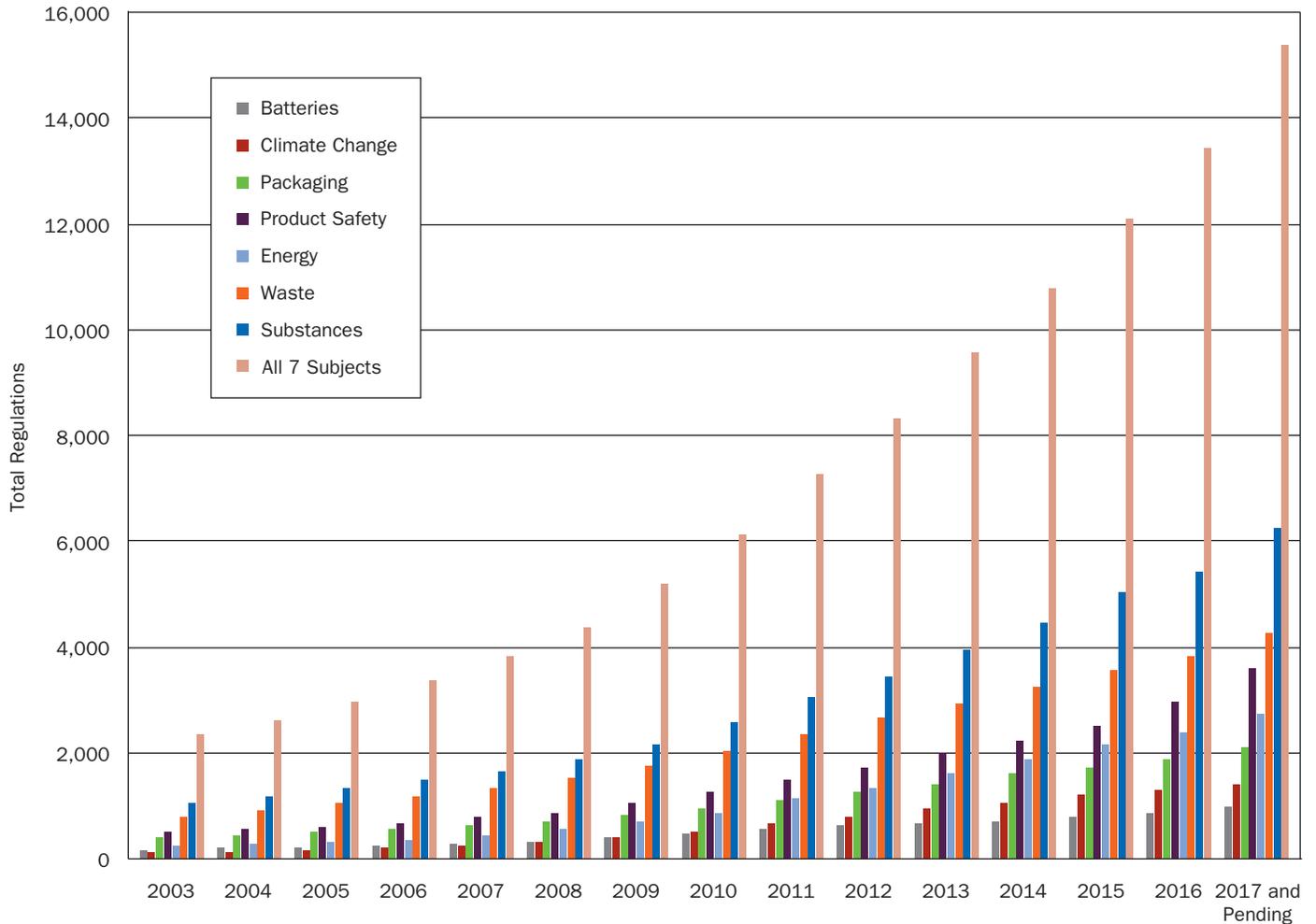
The Chemical Footprint Project (CFP) Survey enables the benchmarking of corporate progress away from hazardous chemicals toward safer alternatives. The four pillars of CFP—Management Strategy, Chemical Inventory, Footprint

Measurement, and Disclosure & Verification—enable participating companies to benchmark their progress internally and externally, and empower investors and purchasers to evaluate and hold companies accountable.

### The Costs of Hazardous Chemicals

It is well documented that people and ecosystems across the globe are exposed to hazardous chemicals. The U.S. National Health and Nutrition Examination Survey (NHANES) tracks human exposure to over 300 chemicals, including pesticides, volatile organic compounds, phthalates, metals, dioxins, perfluoroalkyl and polyfluoroalkyl substances (PFAS), and many other substances.<sup>9</sup> Exposure to these chemicals can cause adverse health effects including cancer, learning disabilities, and reproductive and

FIGURE 1. **New Regulations Implemented Globally by Selected Topic and Year of Entry into Force** (Revised 10/26/17)



Source: Compliance and Risks<sup>16</sup>

developmental disabilities. The World Health Organization’s report, *The Public Health Impact of Chemicals: Knowns and Unknowns (2016)*, highlights the impacts of exposures to hazardous chemicals, including:

- 164,400 deaths annually from unintentional poisonings caused by chemical exposures at home and in the workplace;
- 2% to 8% of all cancers caused by occupational carcinogens;
- 99,100 deaths per year from lung cancer caused by occupational lung carcinogens;
- 233,500 deaths per year from Chronic Obstruction Pulmonary Disease (COPD), caused by occupational particulates; and
- in the general population, 14% of lung cancers are attributable to ambient air pollution,

17% to household air pollution, and 7% to occupational carcinogens.<sup>10</sup>

Exposure to chemicals such as lead, mercury, and organophosphate insecticides are clearly associated with adverse neurodevelopmental effects, such as lower IQ. At the same time, mental, behavioral, and neurological disorders account for 10% of the global disease burden, with hazardous chemicals clearly contributing to a portion of that burden.<sup>11</sup> A recent study of the disease and dysfunction costs of exposure to endocrine disrupting chemicals like BPA estimated the costs to be €163 billion annually in the European Union,<sup>12</sup> highlighting in economic terms the costs of hazardous chemicals upon society.



Increased global regulations represent the efforts of governments to curb the societal costs of hazardous chemicals, which in turn raises the cost of hazardous chemicals management for businesses. In an analysis of global environmental regulations over the past 15 years, the consulting firm Compliance and Risks documents the increasing burden of hazardous chemical regulations. Figure 1 highlights that since 2009 there has been a greater increase in regulations targeting “chemicals, substances, and materials” than any other category of environmental regulation. Underscoring these findings are recently passed laws and regulations that include: the Lautenberg Chemical Safety Act in the U.S. in 2016; overhaul of chemical regulations in Vietnam in 2017;<sup>13</sup> new draft list of 103 substances to be restricted in consumer products in China in 2017;<sup>14</sup> and a chemical management law based on the European Union’s REACH regulations passed in Turkey in 2017.<sup>15</sup>

### Opportunities for Green Chemistry and Safer Alternatives

Along with regulations, increased demand from institutional and individual customers, along with investors, is spurring a growing need for safer alternatives. The Natural Marketing Institute, for example, finds that in general “[s]ustainability has moved from what some viewed as a fad, to what has become a fundamental cultural shift. It notes that **“those companies not engaged in the space will be squarely behind their competition as sustainability concerns are only poised to grow over the coming years** [emphasis added]. Ignoring this trend only gives the competition more time to establish market leadership.”<sup>17</sup>

Specific to consumer concerns related to hazardous chemicals, a 2015 Nielsen global survey of home cleaning and laundry attitudes revealed that “Consumers are looking for healthier, safer choices in the foods they eat and the products they use in their homes.”<sup>18</sup> In the Asia-Pacific region, there is a growing interest in products with “no harsh chemicals,” with consumers “more inclined to say they’re looking for natural and ecofriendly products. Forty percent of respondents in the [Asia-Pacific] region say they seek detergents that don’t contain harsh

chemicals, compared with 35% globally.”<sup>19</sup>

Large retailers are increasingly addressing these concerns. For example, CVS Health, Walmart Stores, Inc., and Target Corporation have all developed chemicals policies and programs

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— Marty Mulvihill, Co-Founder, Safer Made

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to reduce hazardous chemicals in cleaning and personal care products.<sup>20</sup> Similar initiatives in the U.S. health care market are driving up demand for safer chemicals, with sector leaders including Kaiser Permanente, Dignity Health, Advocate Health, Hackensack Meridian Health, Premier, Inc., and Vizient signing on to CFP and implementing safer chemicals policies and programs.<sup>21</sup>

Institutional along with individual concerns with hazardous chemicals in products have created a multi-billion dollar demand for safer products. Unilever’s acquisition of Seventh Generation, a company that designs products with human health and the environment in mind, for approximately \$700 million in September 2016 highlights the market value of products designed for health and safety.<sup>22</sup> Marty Mulvihill, co-founder of Safer Made (a new venture fund investing in companies and technologies that create safer products), concluded at BizNGO 2016 that “the rapid growth in revenue and valuations of brands that focus on safety confirms that safety drives competitive advantage and puts pressure on existing brands to adopt safer chemistry. Significant improvement in chemical and material safety—adoption driven by demand for safer products—protects the brand, and drives competitive advantage.”<sup>23</sup> These findings highlight a growth opportunity for brands that focus on ensuring their products are safer for human and environmental health.

### CFP Value to Investors

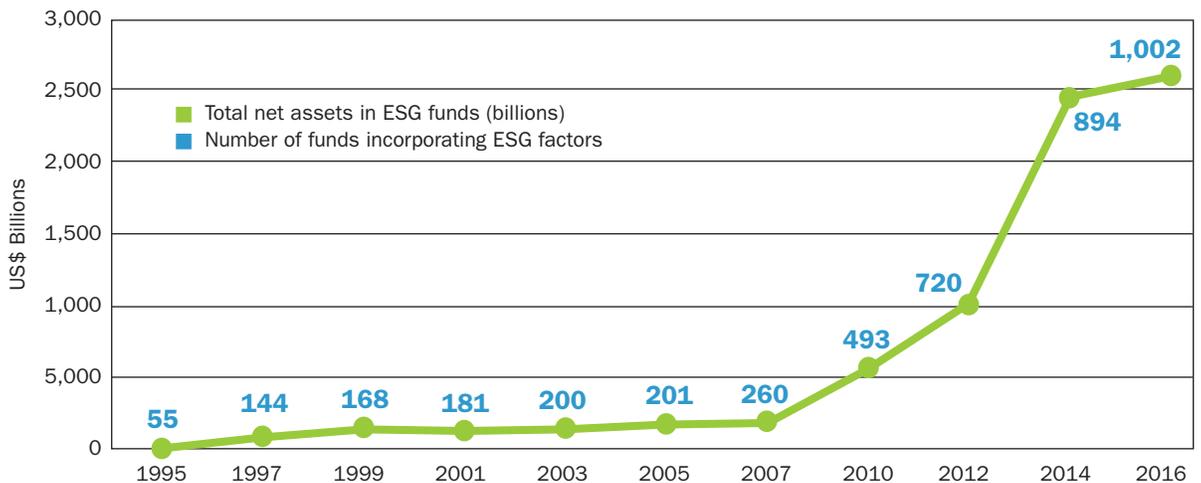
Assets managed according to sustainable investing criteria are growing faster than the financial industry at large. Catalyzing this growth is the view that private assets, not just government and philanthropy, are needed to solve global challenges. Investments into funds with Environmental, Social, and Governance (ESG) criteria have grown from essentially zero in 1995 to over 1,000 funds with \$2.5 trillion assets under management in the U.S. alone (see Figure 2).<sup>24</sup> **This growing interest in ESG in general and environmentally sound chemicals management in particular is underscored by the CFP Signatories in Europe and the U.S. and their \$2.3 trillion in assets under management.**

*Companies that respond to the CFP Survey are well positioned to meet SASB’s reporting standards and the SDG indicators targeting hazardous chemicals.*

CFP advances chemical-related metrics that matter to investors, including the SASB standards and the global Sustainable Development Goals (SDGs). CFP aligns with the SASB accounting metrics for companies in its Consumption Sectors, in particular the following four SASB Standards for: Apparel, Accessories & Footwear; Building Products & Furnishings; Household & Personal Products; and Toys & Sporting Goods. Table 1 highlights how CFP’s Indicators align with SASB’s Accounting Metrics for chemicals in products and product environmental, health, and safety performance. In particular, the CFP Indicators for Chemical Inventory and Footprint Measurement, which include Restricted Substances List (RSLs) and Footprint Measurement, are directly relevant to SASB’s accountability metrics. Companies that respond to CFP are well positioned to meet SASB’s reporting standards and the SDG indicators targeting hazardous chemicals.

CFP aligns with the SDGs<sup>26</sup> because reduced hazardous chemicals use and sound chemicals management are central to meeting SDGs 3, 6, and 12. The CFP Survey supports companies

FIGURE 2. U.S. Funds Incorporating Environmental, Social, and Governance (ESG) Criteria from 1995–2016



Note: Includes funds that incorporate various ESG criteria. The data set is restricted to mutual funds, variable annuity funds, alternative investment funds, exchange-traded funds, closed-end funds, and other pool products. It excludes community investing institutions and assets not associated with a dedicated fund or manager. Separate accounts were excluded beginning in 2014 to maintain exclusive focus on commingled products.

Source: World Resources Institute, 2016<sup>25</sup>



TABLE 1. **Comparing the Sustainability Accounting Standards Board's (SASB) Accounting Metrics to the Chemical Footprint Project's (CFP) Indicators**

Sustainability Accounting Standards Board (SASB)			Chemical Footprint Project (CFP)
Standard	Topic	Accounting Metrics	CFP Indicators (that address the SASB Accounting Metrics)
Apparel, Accessories, & Footwear	Management of Chemicals in Products	<ul style="list-style-type: none"> <li>Description of processes to maintain compliance with restricted substances regulations</li> <li>Description of processes to assess and manage risks associated with chemicals in products</li> </ul>	<ul style="list-style-type: none"> <li>Restricted Substances List (I1)</li> <li>Beyond Restricted Substances List (I2)</li> <li>Footprint Measurement Indicators including: Chemical Footprint (F2) and Hazard Assessment (F4)</li> </ul>
Building Products & Furnishings	Management of Chemicals in Products	<ul style="list-style-type: none"> <li>Description of processes to assess and manage risks and/or hazards associated with chemicals in products</li> <li>Percentage of applicable products meeting volatile organic compound (VOC) emissions and content standards</li> </ul>	<ul style="list-style-type: none"> <li>Footprint Measurement Indicators including: Chemical Footprint (F2) and Hazard Assessment (F4)</li> <li>VOCs are captured under Restricted Substances Lists (I1)</li> </ul>
Household & Personal Products	Product Environmental, Health, and Safety Performance	<ul style="list-style-type: none"> <li>Revenue from products that contain REACH substances of very high concern (SVHC)</li> <li>Revenue from products that contain substances on the California DTSC Candidate Chemicals List</li> <li>Discussion of process to identify and manage emerging materials and chemicals of concern</li> <li>Revenue from products designed with green chemistry principles</li> </ul>	<ul style="list-style-type: none"> <li>Chemical Footprint (F2)</li> <li>Chemical Footprint (F2)</li> <li>Footprint Measurement Indicators including: Chemical Footprint (F2) and Hazard Assessment (F4)</li> <li>Addressed in part by Safer Alternatives (F5)</li> </ul>
Toys & Sporting Goods	Chemical & Safety Hazards of Products	<ul style="list-style-type: none"> <li>Number of recalls and total units recalled</li> <li>Number of Letters of Advice (LOA) received</li> <li>Amount of legal and regulatory fines and settlements associated with product safety</li> <li>Description of processes to assess and manage risks and/or hazards associated with chemicals in products</li> </ul>	<ul style="list-style-type: none"> <li>Companies scoring well in the CFP Chemical Inventory Indicators—including Restricted Substances List (I1), Supplier Requirements (I3), and Supplier Conformance (I6)—would likely have low recalls, LOAs, and fines</li> <li>Footprint Measurement Indicators including: Chemical Footprint (F2) and Hazard Assessment (F4)</li> </ul>

and investors in achieving these three SDGs, especially the CFP Footprint Measurement Indicators, which include: goals to reduce chemicals of high concern (CoHCs) (F1), chemical footprint measurement (F2), CoHCs reductions (F3), and safer alternatives (F5) (see Section 2.3 for details). The following bullets list the three SDGs most relevant to hazardous chemicals along with the SDG indicator that references chemicals and the CFP Indicators most relevant to achieving the goal:

- **Goal 3—Ensure healthy lives and promote well-being for all at all ages.** SDG indicator 3.9—“By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.”<sup>27</sup> **Relevant CFP Indicators:** measuring chemical footprint (F2), the setting of goals to reduce hazardous chemicals

(F1), and reduced Chemicals of High Concern (CoHCs) (F3).

- **Goal 6—Ensure availability and sustainable management of water and sanitation for all.** SDG indicator 6.3—“By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.”<sup>28</sup> **Relevant CFP Indicators:** measuring chemical footprint (F2), the setting of goals to reduce hazardous chemicals (F1), and accounting for reduced CoHCs (F3).
- **Goal 12. Ensure sustainable consumption and production patterns:** SDG indicator 12.4—“By 2030, achieve the environmentally sound management of chemicals and all wastes

throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water, and soil in order to minimize their adverse impacts on human health and the environment.”<sup>29</sup>

**Relevant CFP Indicators:** *the entire suite of CFP Indicators align with achieving the “environmentally sound management of chemicals.” In fact, the entire CFP Survey is a proxy for measuring progress to SDG indicator 12.4.*

According to the United Nations Principles for Responsible Investing (UN PRI), “achieving the SDGs is at the core of the responsible investment agenda over the next ten years.”<sup>30</sup> Investors in Europe and North America are beginning to recognize CFP’s value in meeting their sustainability goals because it:

- supports efforts to evaluate corporate progress towards the United Nations’ Sustainable Development Goals (SDGs) and compliance with SASB standards;
- offers insights into corporate chemicals management and supply chain management;
- is a proxy for good corporate governance practice and comprehensive sustainability programs;
- provides a platform for engaging companies in a dialogue on their chemicals management initiatives; and
- informs investment decision making.

For these reasons banks, management companies, pension funds, and other organizations have become CFP Signatories.

### CFP Value to Purchasers—Health Care, Government, & Retailers

Until CFP was created, government, health care, and retailers lacked the means to evaluate whether their suppliers systematically manage their chemical risks and if they have a plan for continuous improvement to safer chemicals use. CFP provides institutional purchasers with data that readily enable comparison of suppliers on their corporate-wide chemical footprint. The CFP Survey empowers purchasers to request chemical footprint data from suppliers and enables purchasers to recognize and reward leading suppliers.

CFP Purchaser Signatories have over \$600 billion in purchasing power. These Signatories, including Kaiser Permanente, Dignity Health, Advocate Healthcare, Partners Healthcare, and Vizient are engaging their suppliers in participating in the CFP Survey. In 2016, CVS Health became the first pharmacy chain to become a Signatory to CFP as part of its new chemicals policy.<sup>31</sup> “Our consumers expect both transparency and quality when it comes to ingredients in the products they use,” said Eileen Howard Boone, Senior Vice President of CSR and Philanthropy at CVS Health. “This [our chemicals policy] is an important step, and we look forward to continuing to work with stakeholders to address additional chemicals of consumer concern and focus on more product categories in the future.”<sup>32</sup>

Participating health care organizations see CFP as supporting their mission. For example, as Kyle Tafuri, Senior Sustainability Advisor at Hackensack Meridian Health noted at BizNGO 2016, “Safer chemicals directly align with our strategic priorities of safety, population health, and prevention. CFP provides us with an invaluable tool to help us achieve our mission, while providing an avenue for supplier transparency as well as financial savings.”<sup>33</sup> Dignity Health, one of the nation’s five largest health care systems, highlighted its participation as a signatory in its 2016 Sustainability Report by noting that: “Dignity Health advanced the Chemical Footprint Project (CFP) by requesting that 18 of our leading suppliers participate in the first annual business survey. Our goal was to create a quantitative framework and set a new standard for evaluating companies on policies, programs, and practices for managing chemicals. Of 18 companies, four responded and three agreed to be named publicly.”<sup>34</sup>

### CFP Value to Responders

Until CFP, companies lacked the means to publicly demonstrate—using an independent, third party tool—their overall chemicals management performance. By participating in the CFP Survey companies can support their efforts to reduce the regulatory,<sup>35</sup> reputation,<sup>36</sup> and redesign<sup>37</sup> risks of hazardous chemicals. CFP increases customer and investor engagement and transparency in



supply chains, resulting in increased opportunities to capture new markets with safer products.

CFP is a tool for aligning purchasers and investors with brands and manufacturers as they work to improve chemicals management. What follows below are highlights on the value of CFP from three diverse companies: 1) a diversified, international consumer goods, medical devices, and pharmaceuticals company; 2) a small manufacturer of formulated products; and 3) a small manufacturer of toys.

As Al Iannuzzi, Senior Director of Worldwide Environment, Health, Safety & Sustainability at Johnson & Johnson, explained:

“We . . . participated in the inaugural Chemical Footprint Project last year as a way to demonstrate and benchmark our process and approach to management of chemicals and ingredients in our products. . . . Tools must be relevant to our business units and outcomes must be meaningful to our customers and stakeholders. We support cross-industry efforts and work closely with stakeholders, and focus on tools and rating systems that are valued by our customers. As an example, CVS Health, one of our largest customers in the United States recently awarded us with their inaugural Sustainability and Social Responsibility Supplier Award, in part because of our participation in the Chemical Footprint Project.”<sup>38</sup>

Nicole Koharik, Corporate Communications Director at GOJO Industries, a manufacturer of formulated products, explained to investors at the SRI Conference 2016 how CFP has provided:

- a framework for implementing a whole systems approach to sustainable chemistry,
- productive conversations across the organization,
- actionable metrics to inform goals and priorities,
- increased customer engagement, and
- opportunity to lead and learn.<sup>39</sup>

And for Radio Flyer, a small manufacturer of toys, the CFP Survey provides a blueprint for what companies need in a comprehensive chemicals management program. Eric Selner, Director of Operations & Sustainability at Radio Flyer, highlighted that “the footprinting effort has helped us reach new levels of achievement across our broad chemicals management program.”<sup>40</sup>

Radio Flyer found that the CFP Survey facilitated:

- “greater transparency, knowing what is in its products and supply chains, in order to improve materials; and
- stronger accountability across the supply chain through a better understanding of inputs and processes (reaching across other company priorities, such as quality).”<sup>41</sup>

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— Eric Selner, Director of Operations & Sustainability, Radio Flyer

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Radio Flyer is leveraging CFP to “gain greater transparency across the supply chain and understanding of potential chemicals of concern to get out ahead of the market and build on its legacy of responsibly producing products for children.”<sup>42</sup>

In summary, CFP provides brands, manufacturers, investors, and institutional purchasers with a common platform for authentically communicating their organizational progress in chemicals management policies and practices that are healthy for people and the planet.