

2013

ZERO DISCHARGE OF HAZARDOUS
CHEMICALS PROGRAMME

Joint Roadmap

Version 2

June 2013



ES022513024504BAO

adidas
GROUP



ESPRIT

G-STAR RAW H&M INDITEX



LEVI STRAUSS & CO.



YOUR M&S



Executive Summary

The ZDHC Programme

In 2011, the Zero Discharge of Hazardous Chemicals (ZDHC) Programme formed to catalyse positive change in the discharge of hazardous chemicals across the product life cycle. Our coalition now includes brand members adidas Group, C&A, Esprit, G-Star Raw, H&M, Inditex, Jack Wolfskin, Levi Strauss & Co., Li Ning, M&S, New Balance Athletic Shoe, Inc., NIKE, Inc., and PUMA SE, a growing number of associate members, and a diverse group of stakeholders we engage with regularly. Given the challenge of driving industry change, we will only succeed in achieving the vision and goals of the ZDHC Joint Roadmap if we work together. This is the true origin of the ZDHC collaboration.

The Joint Roadmap is a highly ambitious plan that aims to set a new standard of environmental performance for the global apparel and footwear industry.

The ZDHC Joint Roadmap

The ZDHC Joint Roadmap communicates the Programme's long-term vision and goals. It is a high-level strategic document supported by an actionable plan that focuses on goals, milestones, deliverables and responsibilities.

ZDHC Vision

We envision an apparel and footwear industry that delivers high quality products, using safe chemistries, operating in ways that keep communities free from unintended, downstream environmental impacts. Further, our vision includes delivery to a market in which sustainable chemistry practices are preferred and rewarded, and the entire system of suppliers, brands, governments and NGOs also will fulfill their responsibilities to ensure the safe use of chemicals.

ZDHC Mission

The ZDHC Programme and its multi-stakeholder group of partners will transform the global apparel and footwear industry by improving environmental performance and chemical safety; thereby delivering a safer and cleaner environment as we work towards zero discharge of hazardous chemicals in the life cycle of all products by 2020.

ZDHC 2020 Goals

The ZDHC Programme is working towards achieving the following goals by 2020:

1. Elimination or substitution of hazardous chemicals in our members' products and their manufacture
2. Development of a transparent process to screen and eliminate hazardous chemicals in the apparel and footwear industry
3. Tools training and capacity building programmes in place to support the entire supply chain
4. Development of common, harmonised assessment tools to be used throughout the industry and clear guidelines on best practices available for all supply chain stakeholders
5. Development of a system of disclosure created in partnership with the supply chain, that allows communities and consumers to access information about potential exposures to chemicals
6. The entire system of suppliers, brands, governments, and NGOs is engaged and participating, innovating, and fulfilling their respective responsibilities to ensure the safe use of chemicals.
7. Development of a transparent and continuous stakeholder engagement process, that helps build trust and ensures strong alignment amongst all parties

ZDHC Guiding Principles

The ZDHC Programme team is committed to several guiding principles that inform and underpin every aspect of this programme. These principles include support of the Precautionary Principle¹ and systemic change (that is, wider societal and policy change) to achieve zero discharge of hazardous chemicals across supply chains and product life cycles. We are committed to disclosure, in line with the Right to Know principle², and understand the challenge involved in moving the industry to a new level of transparency in chemical usage.

We apply these principles to our work through actionable, on-the-ground efforts that are grounded in science and address the realities of the diverse and complex global supply chains. In addition, we push for innovation in sustainable chemistries development and manufacturing processes as part of the path to the 2020 vision.

The goal of zero discharge demands the collective action of industry and other stakeholders; we cannot accomplish our aspirations alone. The elimination of hazardous chemicals requires collaboration and partnership with our industry peers and also with stakeholders across the supply chain.

In the end, our priority is tangible progress, both through development of industry wide best practices and on-the-ground implementation, the results of which are and will continue to be publically shared and reported.

2013 Joint Roadmap Update

After more than 18 months of extensive work, the ZDHC Programme team has developed an updated Joint Roadmap, Version 2, to reflect our current understanding of the challenge ahead towards zero discharge of hazardous chemicals by 2020. This updated document also incorporates and reflects upon input received from a wide range of stakeholders, including industry partners, government agencies, non-governmental organisations and advocacy groups.

This updated Joint Roadmap builds on the previous plan laid out in the initial Joint Roadmap, but does not replace it. The fundamentals of what we initially set out to do, and the public commitments we have made, have not changed with this release.

ZDHC 2013 Workstreams

To reflect our updated understanding of how to move towards our 2020 vision, we have organised our work into seven workstreams. Each workstream is aimed towards a set of 2015 achievements (as shown in Table ES-1) and is supported by an actionable, near-term plan (see Section 4).

TABLE ES-1

Anticipated 2015 Achievements by Workstream

Workstream	2015 Anticipated Achievements
1. Chemical Hazard Assessment, Prioritisation and Action	<ul style="list-style-type: none">• Created a transparent process for assessing and prioritising chemicals that is clearly documented and reviewed by key stakeholders with ongoing bi-annual review cadence• Developed a publically available list of chemicals substances that has been targeted for phase out and/or research• Communicated about and achieved phase out of initial priority chemicals³ (with a key performance indicator [KPI] to be determined) within the top 50% of total wet process production of our respective supply chains• Developed a clearly defined Manufacturing Restricted Substances List (MRSL)

¹ The Precautionary Principle means that when (on the basis of available evidence) an activity may harm human health or the environment, a cautious approach should be taken in advance – even if the full extent of harm has not yet been fully established scientifically. It recognizes that such proof of harm may never be possible, at least until it is too late to avoid or reverse the damage done. The process of applying the Precautionary Principle must involve an examination of the full range of alternatives, including, where necessary, the development of sustainable alternatives where they do not already exist.

² The Right to Know Principle is defined as practices that allow public access to environmental information. In this case, information specifically about the uses and discharges of chemicals based on reported quantities of releases of hazardous chemicals to the environment, facility-by-facility, year-by-year.

³ List to be clearly specified by the assessment and prioritisation work. While we know many of the key chemical substances and classes that will be targeted (e.g. chlorobenzenes, APEOs), we will develop a specific list of substances for transparency and clarity.

TABLE ES-1

Anticipated 2015 Achievements by Workstream

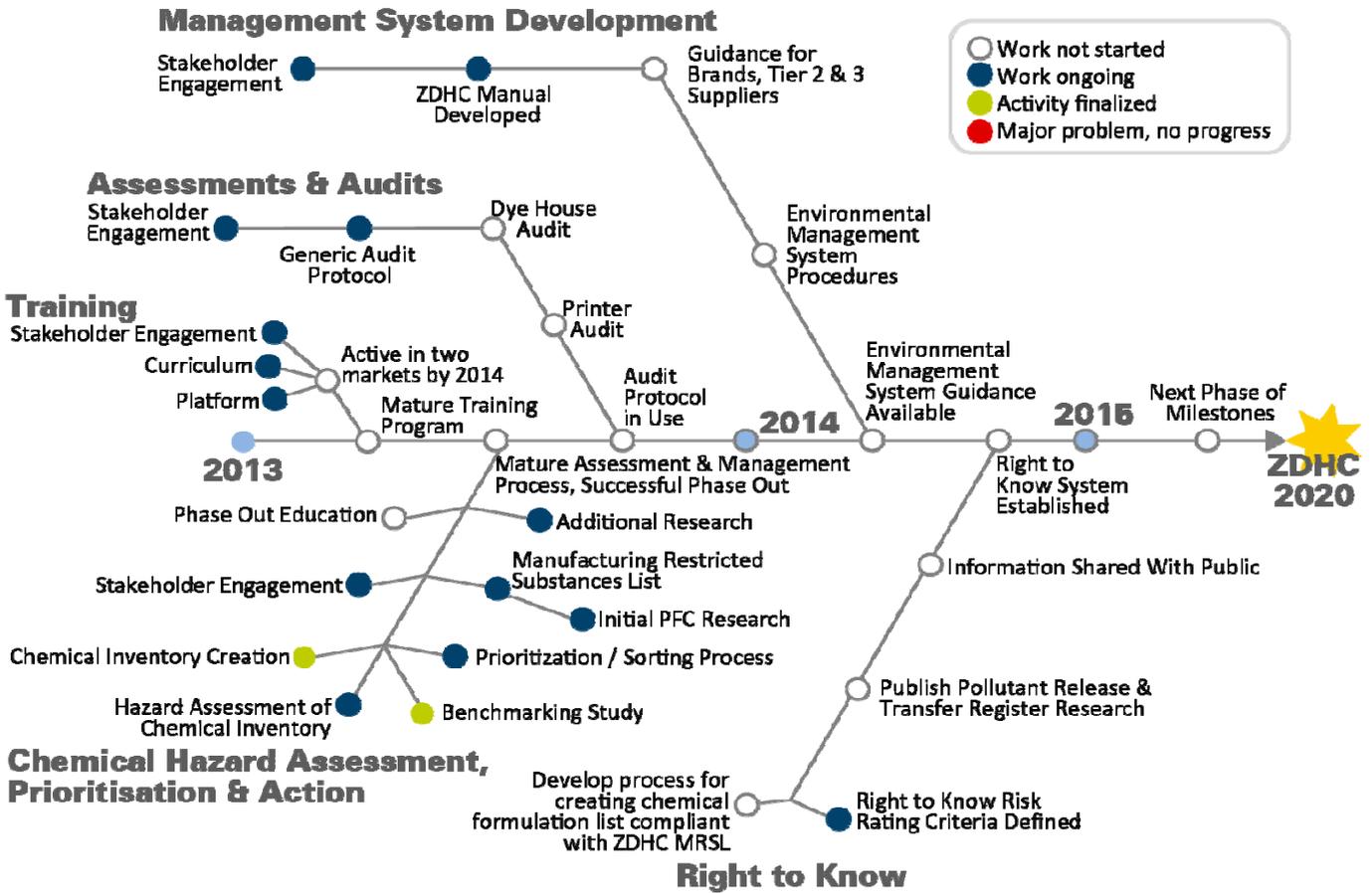
Workstream	2015 Anticipated Achievements
	<ul style="list-style-type: none"> • Set up an evaluation and substitution process, starting with PFCs, for chemicals that need to be assessed and substituted in the future • Identified and assessed PFC alternatives to avoid regrettable substitution • Checked the PFC-free repellency finishes with regard to performance levels, especially on water-, oil- and soil-repellency, stain release and durability. • Documented the evaluation of short chain and PFC-free alternatives as they relate to hazard and consumer performance
2. Training	<ul style="list-style-type: none"> • Established a functioning training and capacity building infrastructure in at least three key sourcing countries • Trained top suppliers providing 50% of the total brand's production by 2015, using a modular training approach with contents related to all ZDHC programmatic guidelines and tools • Achieved industry acceptance and demand for ZDHC's offered trainings • Established ZDHC training as the preferred choice for industry chemicals management training needs • Showed, through evidence based results, that trainings are supporting ZDHC goals
3. Right to Know	<ul style="list-style-type: none"> • Developed a solid foundation for the disclosure of data from suppliers that will be used to indicate the progress of facilities in implementing ZDHC best practices for the responsible use and management of chemicals <ul style="list-style-type: none"> – Suppliers report a "performance rating" which is based on number of factors such as compliance to national and local standards, disclosure of chemical inventory, use of the positive formulation list, disclosure of discharge results and, ability to disclose data to the public • A list of chemical formulations that are compliant with the ZDHC MRSL, based on disclosure from the chemical industry, is available for use by suppliers and brands and retailers.
4. Assessment and Auditing	<ul style="list-style-type: none"> • Developed, in strong cooperation with ZDHC, SAC, GSCP, and other related organisations, a Generic Environmental Audit Protocol and Dyehouse Audit Protocol used by brands, retailers and Tier 1 and 2 suppliers via a joint service provider or similar organisation • Audit protocol used by 50 brands and retailers from ZDHC, SAC and GSCP members as their single, harmonised environmental protocol
5. Management Systems Approach, Structure and Documentation	<ul style="list-style-type: none"> • Adoption of the overall management framework, by ZDHC members and partners, that serves as a structure for delivering environmental improvements and systematic change in the supply chain • Aligned and coupled the overall management framework and the Audit protocol(s) in an effective manner • Used the framework as a holding structure for ZDHC collaboration for the benefit of ZDHC members and their partners • Achieved the perception that the framework is an effective mechanism for driving change and delivering improvements by the supply chain partners, particularly the Tier 2 and 3 suppliers
6. Stakeholder Partnering	<ul style="list-style-type: none"> • Increased the number of partner brands so that our coverage of the apparel and footwear supply chain increases • Collaborating with key influencers from different parts of the system who provided expertise and helped us take workstream activities and projects to scale • Increased engagement with suppliers as true partners in the process • Established an independent External Advisory Board, comprised of representatives from the system (chemical industry, NGOs, suppliers, academia and investors/funders). The remit of the external advisory board would be to provide strategic advice to the ZDHC and evaluate progress against roadmap goals
7. Chemicals Management Best Practices Pilot	<ul style="list-style-type: none"> • Worked with key experts and stakeholders to develop a chemicals management best practice pilot programme • Identified best practices (for example input quality, input management and process management) to apply at study sites • Disseminated best practices across supply chain partners through training platform or other communications • Outlined parameters to monitor as a result of our intervention, possibly including BOD/COD, TSS, pH, temperature, for the presence of 11 priority chemical classes, total water discharge, water consumption per kilo of product and energy consumption per unit of product

Workstream actions, as shown in Figure ES-1, will contribute to the goal of zero discharge.

FIGURE ES-1

Metro Map

Action Plan to Achieve Zero Discharge of Hazardous Chemicals 2020

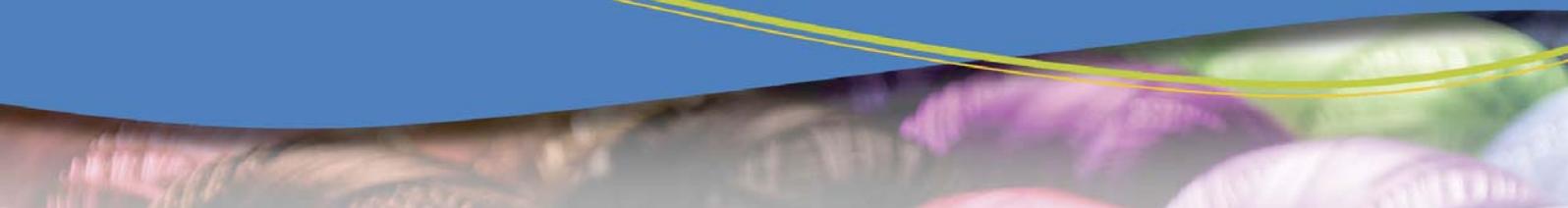


Ongoing Engagement

The ZDHC Programme will continue to update stakeholders through the ZDHC website (www.roadmaptozero.com) and direct communication. We will continue to issue Programme Annual Reports and will publish project deliverables on this website. Ongoing stakeholder engagement is a ZDHC Programme priority, and regional stakeholder meetings, both in person and via webinar, are a regular feature of our engagement process. We welcome your interest in the programme and encourage you to participate in future consultation efforts. To receive updates and stay informed on the ZDHC Programme, register at info@roadmaptozero.com and monitor our website for information on stakeholder webinars, meetings and other events.

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Acronyms and Abbreviations

APEs	alkylphenols
APEOs	alkylphenol ethoxylates
BOD	biological oxygen demand
BSI	Bundesverband der Deutschen Sportartikel-Industrie (German Sporting Goods Association)
BSSL	Bluesign System Substances List
CHA	Chemical Hazard Assessment
COD	chemical oxygen demand
DWR	durable water repellent
EMS	Environmental Management System
EOG	European Outdoor Group
GSCP	Global Social Compliance Programme
KPI	key performance indicator
MRS�	Manufacturing Restricted Substances List
OIA	Outdoor Industry Association
OIA CMWG	OIA Chemicals Management Working Group
PFC	perfluorinated chemicals
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PRTR	Pollutant Release and Transfer Register
SAC	Sustainable Apparel Coalition
SCCP	short-chained chlorinated paraffin
SIN	Substitute It Now (List)
SVHC	Substances of Very High Concern
TSS	total suspended solids
ZDHC	Zero Discharge of Hazardous Chemicals
UNEP	United Nations Environment Programme
UNEP CiP	UNEP Chemicals in Products

Introduction

1.1 Who is the ZDHC Group?

Since the 1990s, apparel and footwear companies have been working closely with European and United States regulatory agencies to restrict harmful substances in consumer products. In support of this effort, industry organisations, such as AFIRM, have focused on harmonising product standards and communicating these standards throughout the supply chain. While these efforts have achieved great progress, it is now clearly essential for the industry to consider impacts throughout the global supply chain in addition to controlling restricted chemicals in products for consumer safety.

In 2011, the ZDHC Programme formed to reduce and eliminate the discharge of hazardous chemicals across the product life cycle. Current members include adidas Group, C&A, Esprit, G-Star Raw, H&M, Inditex, Jack Wolfskin, Levi Strauss & Co., Li Ning, M&S, New Balance Athletic Shoe, Inc., NIKE, Inc. and PUMA SE, and key influencers in the textile chemical industry. Our group continues to expand, welcoming new members who are interested in contributing to these efforts.

In reaching out to the broader industry, the message is clear: to deliver the change we would like to see, all parts of the supply chain—brands, chemical suppliers, manufacturers and other intermediaries—must come work together to engage with concerned stakeholders, drive innovation and establish new ways of reducing and eliminating hazardous chemicals. Members must accept and share responsibility whilst maintaining individual accountability for both their actions and contributions to the delivery of the Joint Roadmap.

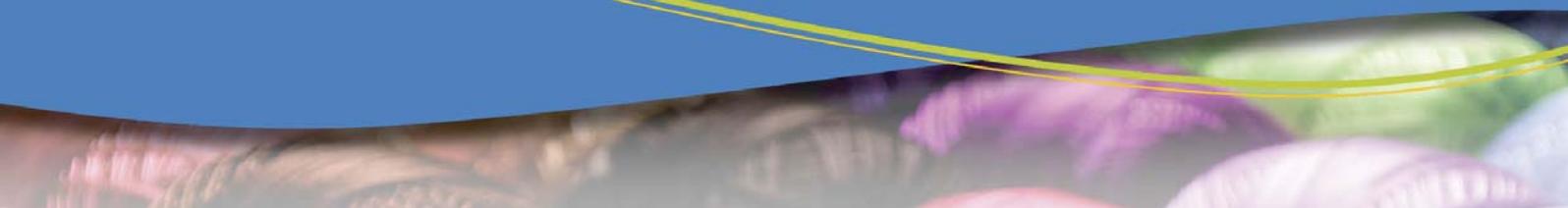
For more information on the ZDHC Programme, visit our website at www.roadmaptozero.com.

1.2 What is the Joint Roadmap?

The Joint Roadmap is a highly ambitious plan that sets a new standard of environmental performance for the global apparel and footwear industry. The Roadmap communicates the ZDHC Programme's long-term vision and goals, and is a high-level strategic document supported by an actionable plan that focuses on goals, milestones, deliverables and responsibilities.

From the onset, we recognized that holistic system change is required to achieve our goal and we placed focus on improving manufacturing inputs and processes, not just end-of-pipe controls. As such, the first Joint Roadmap, released in November 2011, identified the areas where ZDHC members could collaborate to conduct research and take action to guide the group toward the 2020 goal of zero discharge of hazardous chemicals. In developing our initial work plan, we asked ourselves several fundamental questions:

- How do we know which restricted chemicals are still in use in our supply chain?
- How do we communicate to our suppliers about the ZDHC Programme?
- How do we best train our suppliers?
- How do we know which chemicals to prioritise?
- When are these chemicals used in ways that pose risk?
- How should we best assess chemicals for the risks they cause?
- How do we select chemicals on which we wish to focus our efforts?



After more than 18 months of extensive work on these and other questions, we are pleased to present the first update to the Joint Roadmap.⁴ This update provides an overview of the guiding principles and long-term vision of the ZDHC group and updates key activities that are catalysing industry change. These activities aim to develop and promote industry best practices and challenge entrenched attitudes and business activities that hinder global environmental progress.

This update to the Joint Roadmap builds on the previous Joint Roadmap. Our fundamental mission, and the public commitments we have made, has not changed. This Joint Roadmap, Version 2, presents an updated understanding of our challenge, our 2020 goals and our mission. It incorporates and reflects comments received from a wide range of stakeholders, including industry partners, government agencies, non-governmental organisations and advocacy groups. Those comments, along with our responses, are published on the ZDHC website at www.roadmaptozero.com.

⁴ For more detail on our progress to date, please see our Annual Report at http://roadmaptozero.com/df.php?file=pdf/2012_Annual_Report.pdf

Our Strategy

The Joint Roadmap, Version 2, is based on the learnings, experience and stakeholder feedback obtained during the first year of the ZDHC Programme. This section outlines the overall strategy, which includes the vision, mission and 2020 goals and how these goals translate into the work we are delivering.

2.1 Vision Statement

We envision an apparel and footwear industry that delivers high quality products, using safe chemistries, operating in ways that keep communities free from unintended, downstream environmental impacts. Further, our vision includes delivery to a market in which sustainable chemistry practices are preferred and rewarded, and the entire system of suppliers, brands, governments and NGOs also will fulfill their responsibilities to ensure the safe use of chemicals.

2.2 Mission Statement

The ZDHC Programme and its multi-stakeholder group of partners will transform the global apparel and footwear industry by improving environmental performance and chemical safety; thereby delivering a safer and cleaner environment as we work towards zero discharge of hazardous chemicals in the life cycle of all products by 2020.

2.3 2020 Goals

The ZDHC Programme is working towards achieving the following by 2020:

1. Elimination or substitution of hazardous chemicals in our members' products and their manufacture
2. Development of a transparent process to screen and eliminate hazardous chemicals in the apparel and footwear industry
3. Tools training and capacity building programmes in place to support the entire supply chain
4. Development of common, harmonised assessment tools to be used throughout the industry and clear guidelines on best practices available for all supply chain stakeholders
5. Development of a system of disclosure, created in partnership with the supply chain, that allows communities and consumers to access information about potential exposures to chemicals
6. The entire system of suppliers, brands, governments, and NGOs is engaged and participating, innovating, and fulfilling their respective responsibilities to ensure the safe use of chemicals.
7. Development of a transparent and continuous stakeholder engagement process, that helps build trust and ensures strong alignment amongst all parties

These seven goals are aspirational and long-term in nature. To ensure that we make practical progress, we developed tracks of work, which we call workstreams, to support progress towards the 2020 goals. While we do not know the details of the entire path towards achieving our 2020 goals, the workstreams are designed to help us learn, make progress, create measurable results and reassess as needed. To balance short- and long-term thinking, we developed a set of interim 2015 achievements, and near-term actions for each workstream.

2.4 Interim Achievements

Interim programme achievements are noted in Table 2-1.

TABLE 2-1
ZDHC 2015 Anticipated Achievements

Workstream	2015 Anticipated Achievements
1: Chemical Hazard Assessment, Prioritisation and Action	<ul style="list-style-type: none"> • Created a transparent process for assessing and prioritising chemicals that is clearly documented and reviewed by key stakeholders with ongoing review cadence • Developed a publically available list of chemical substances targeted for phase out and/or research • Communicated about and achieved phase out of initial priority chemicals (with a key performance indicator [KPI] to be determined) within the top 50% of total wet process production of our respective supply chains • Developed a clearly defined MRSL • Set up an evaluation and substitution process, starting with PFCs, to have a system in place for other potential chemicals that need to be assessed and substituted in the future. We will reference existing frameworks, such as the EU REACH Authorisation evaluation and substitution processes. • Identified and assessed PFC alternatives to avoid regrettable substitutions • Checked the PFC-free repellency finishes with regard to performance levels, especially on water-, oil- and soil-repellency, stain release and durability • Documented the evaluation of a short chain and PFC free alternatives as they relate to hazard and consumer performance
2: Training	<ul style="list-style-type: none"> • Established a functioning training and capacity building infrastructure in at least three key sourcing countries • Trained top suppliers providing 50% of the total brand's production by 2015, using a modular training approach with contents related to all ZDHC programmatic guidelines and tools • Achieved industry acceptance and demand for ZDHC's offered trainings • Established ZDHC training as the preferred choice for industry chemicals management training needs • Showed, through evidence based results, that trainings are supporting ZDHC goals
3: Right to Know	<ul style="list-style-type: none"> • Developed a solid foundation for the disclosure of data from suppliers that will be used to indicate the progress of facilities in implementing ZDHC best practices for the responsible use and management of chemicals <ul style="list-style-type: none"> – Suppliers report a "performance rating" which is based on number of factors such as compliance to national and local standards, disclosure of chemical inventory, use of the positive formulation list, disclosure of discharge results and, ability to disclose data to the public • A list of chemical formulations that are compliant with the ZDHC MRSL, based on disclosure from the chemical industry, is available for use by suppliers and brands and retailers.
4: Assessments and Audits	<ul style="list-style-type: none"> • Developed, in strong cooperation with ZDHC, SAC, GSCP, and other related organisations, a General Environmental Audit Protocol and Dyehouse Audit Protocol used by brands, retailers and Tier 1 and 2 suppliers via a joint service provider or similar organisation • Audit protocol used by 50 brands and retailers from ZDH, SAC and GSCP members as their single, harmonised environmental protocol
5: Management Systems Approach, Structure and Documentation	<ul style="list-style-type: none"> • Adoption of the overall management framework by ZDHC members and partners that serves as a structure for delivering environmental improvements and systematic change in the supply chain • Aligned and coupled the overall management framework and the Audit protocol(s) in an effective manner • Used the framework as a holding structure for ZDHC collaboration for the benefit of ZDHC members and their partners • Achieved the perception that the framework is an effective mechanism for driving change and delivering improvements by the supply chain partners, particularly the Tier 2 and 3 suppliers
6: Stakeholder Partnering	<ul style="list-style-type: none"> • Increased the number of partner brands so that our coverage of the apparel and footwear supply chain increases • Collaborating with key influencers from different parts of the system who provided expertise and helped us take workstream activities and projects to scale

TABLE 2-1
ZDHC 2015 Anticipated Achievements

Workstream	2015 Anticipated Achievements
	<ul style="list-style-type: none"> Increased engagement with suppliers as true partners in the process Established an independent External Advisory Board, comprised of representatives from the system (chemical industry, NGOs, suppliers, academia and investors/funders). The remit of the external advisory board would be to provide strategic advice to the ZDHC and evaluate progress against roadmap goals
7: Chemicals Management Best Practices Pilot	<ul style="list-style-type: none"> Worked with key experts and stakeholders to develop a chemicals management best practice pilot programme Identified best practices (for example, input quality, input management and process management) to apply at study sites Disseminated best practices across supply chain partners through training platform or other communications Outlined parameters to monitor as a result of our intervention, possibly including BOD/COD, TSS, pH, temperature, for the presence of 11 priority chemical classes, total water discharge, water consumption per kilo of product and energy consumption per unit of product

To illustrate the link between the 2020 goals and what we hope to achieve in our current workstreams, we mapped our end goals against workstreams in Table2-2.

TABLE 2-2
Workstream Support of ZDHC Programme Goals

2020 Goals	Workstreams that Support 2020 Goals				Management Systems Approach, Structure and Documentation	Stakeholder Partnering	Chemicals Management Best Practices Pilot
	Chemical Hazard Assessment, Prioritisation and Action	Training	Right-to-Know	Assessments and Audits			
Elimination or substitution of hazardous chemicals in our members' products and their manufacture	✓	✓	✓	✓	✓	✓	✓
Development of a transparent process to screen and eliminate hazardous chemicals in the apparel and footwear industry	✓					✓	
Tools training and capacity building programmes in place to support the entire supply chain		✓		✓	✓	✓	✓
Development of common, harmonised assessment tools to be used throughout the industry and clear guidelines on best practices that are available for all supply chain stakeholders		✓		✓	✓	✓	✓

TABLE 2-2
Workstream Support of ZDHC Programme Goals

2020 Goals	Workstreams that Support 2020 Goals						
<i>The ZDHC Programme is working towards achieving the following by 2020:</i>	Chemical Hazard Assessment, Prioritisation and Action	Training	Right-to-Know	Assessments and Audits	Management Systems Approach, Structure and Documentation	Stakeholder Partnering	Chemicals Management Best Practices Pilot
Development of a system of disclosure, created in partnership with the supply chain, that allows communities and consumers to access information about potential exposures to chemicals	✓		✓	✓	✓	✓	
The entire system of suppliers, brands, governments, and NGOs is engaged and participating, innovating, and fulfilling their respective responsibilities to ensure the safe use of chemicals	✓	✓	✓	✓	✓	✓	✓
Development of a transparent and continuous stakeholder engagement process, that helps build trust and ensures strong alignment amongst all parties	✓	✓	✓	✓	✓	✓	✓

ZDHC Principles

Our aspiration is to create positive and lasting change in the discharge of hazardous chemicals across the apparel and footwear industry. We believe that a pragmatic, step-wise approach with a focus on early wins is the most effective way to achieve our ambitious 2020 goals. We are constantly striving to balance this ambition with on-the-ground realities and scientific insights to effectively and efficiently deliver the change we seek.

3.1 What We Believe

The ZDHC community is committed to several guiding principles that inform, direct and underpin every aspect of this programme. These principles include support of the Precautionary Principle⁵ and systemic (that is, wider societal and policy) change to achieve zero discharge of hazardous chemicals across supply chains and product life cycles. We recognize that if we are to deliver lasting solutions, our actions need to be guided by transparency, fact-based decision-making and an integrated approach to chemicals management throughout the supply chain.

To achieve the goal of zero discharge of hazardous chemicals, mechanisms for disclosure and transparency about the hazardous chemicals used in our global supply chains both are important and necessary. Disclosure, in line with the Right to Know principle⁶, will be one of the most challenging issues encountered on the path to zero discharge of hazardous chemicals by 2020. We wish to move the industry to a new level of transparency in chemical usage, but also must understand the technical capacity, cost, regulatory implications and confidential business information issues for individual chemical suppliers (Tier 3 suppliers) and manufacturing suppliers (Tier 1 and 2 suppliers) to meet this expectation.

3.2 How We Work

The pursuit of our 2020 goals must be implemented through a workable, on-the-ground approach that is grounded in science. If we are looking for sustainable solutions, these must address the realities of our diverse and complex global supply chains. To this end, we support decision making that builds on sound scientific and regulatory principles and is connected to the reality of supply-chain change management. We know that effective solutions will require a holistic, integrated chemicals management approach that addresses inputs, process innovation and end-of-pipe control. In addition, a strong push for innovation in chemical development and manufacturing processes will be required.

Our goals demand the collective action of industry and other stakeholders. We believe that the elimination of hazardous chemicals requires not only collaboration and partnership with our industry peers, but also with stakeholders across our supply chain. From our past experiences with supply chain engagement, we realize that industry coalitions are important mechanisms for standardizing messages, tools and requirements, and also in presenting a stronger case for industry change than any individual brand could present. This collective voice becomes more important as we move further into our supply chains, where each individual brand makes up only a small percentage of business volume at Tier 2 and 3 suppliers.

We strive for continuous learning and improvement within our own organizations and throughout our supply chains. To facilitate this learning, we are committed to sharing our work openly to accelerate learning for our group and stakeholders. In the end, our priority is tangible progress, both through development of industry-wide best practices and on-the-ground implementation, the results of which are publically shared and reported.

⁵ The Precautionary Principle means that when (on the basis of available evidence) an activity may harm human health or the environment, a cautious approach should be taken in advance, even if the full extent of harm has not yet been fully established scientifically. It recognizes that such proof of harm may never be possible, at least until it is too late to avoid or reverse the damage done. The process of applying the Precautionary Principle must involve an examination of the full range of alternatives, including where necessary the development of sustainable alternatives where they do not exist.

⁶ "Right to Know Principle" is defined as practices that allow members of the public access to environmental information. In this case, it is specifically about the use and discharge of chemicals based on reported quantities of releases of hazardous chemicals to the environment, facility-by-facility, year-by-year.

ZDHC Workstreams

To focus our efforts, we identified the following seven key workstreams that support our progress towards the 2020 goals and focus on in the near term.

- Workstream 1: Chemical Hazard Assessment, Prioritisation and Action
- Workstream 2: Training
- Workstream 3: Right to Know
- Workstream 4: Assessments and Audits
- Workstream 5: Management Systems Approach, Structure and Documentation
- Workstream 6: Stakeholder Partnering
- Workstream 7: Chemicals Management Best Practices Pilot

Additional workstreams will likely be created in future years. Similarly, we may complete some of these workstreams before 2020.

In the following sections, each workstream is described in terms of its objective, mid-term achievements and near-term tangible actions. Also described below are the milestones and metrics that will be used to track progress and the partnerships necessary to accomplish this work. We will continue to publish workstream deliverables on our website at www.roadmaptozero.com.

4.1 Workstream 1: Chemical Hazard Assessment, Prioritisation and Action

Overview

This work is focused on prioritising hazardous chemicals and planning actions for those chemical substances to either phase them out and restrict their use in the supply chain or manage their use while encouraging innovation for alternative processes and substitutes for which there are limited or no alternatives currently available.

Why are we focusing on this work?

We need to identify hazardous chemicals to manage chemical use and discharge in our supply chain. The initial focus is within the 11 priority chemical classes,⁷ as well as chemicals found in the benchmarking studies that were carried out last year, but we recognize the need to proactively identify additional chemical substances as we go forward.

In addition to developing a clear list of priority chemicals, many of which we have already been addressing in the supply chain, we also need consistent management of chemicals at supplier locations to ensure use of better chemistries and processes. This work will help us create tools and actions that brands and Tier 2 suppliers can implement to use less hazardous chemicals. As part of this work, we also want to promote the research and development of safer chemicals and processes.

What are our key objectives?

Our objectives for this workstream are three-fold, as noted below and shown in Figure 4-1.

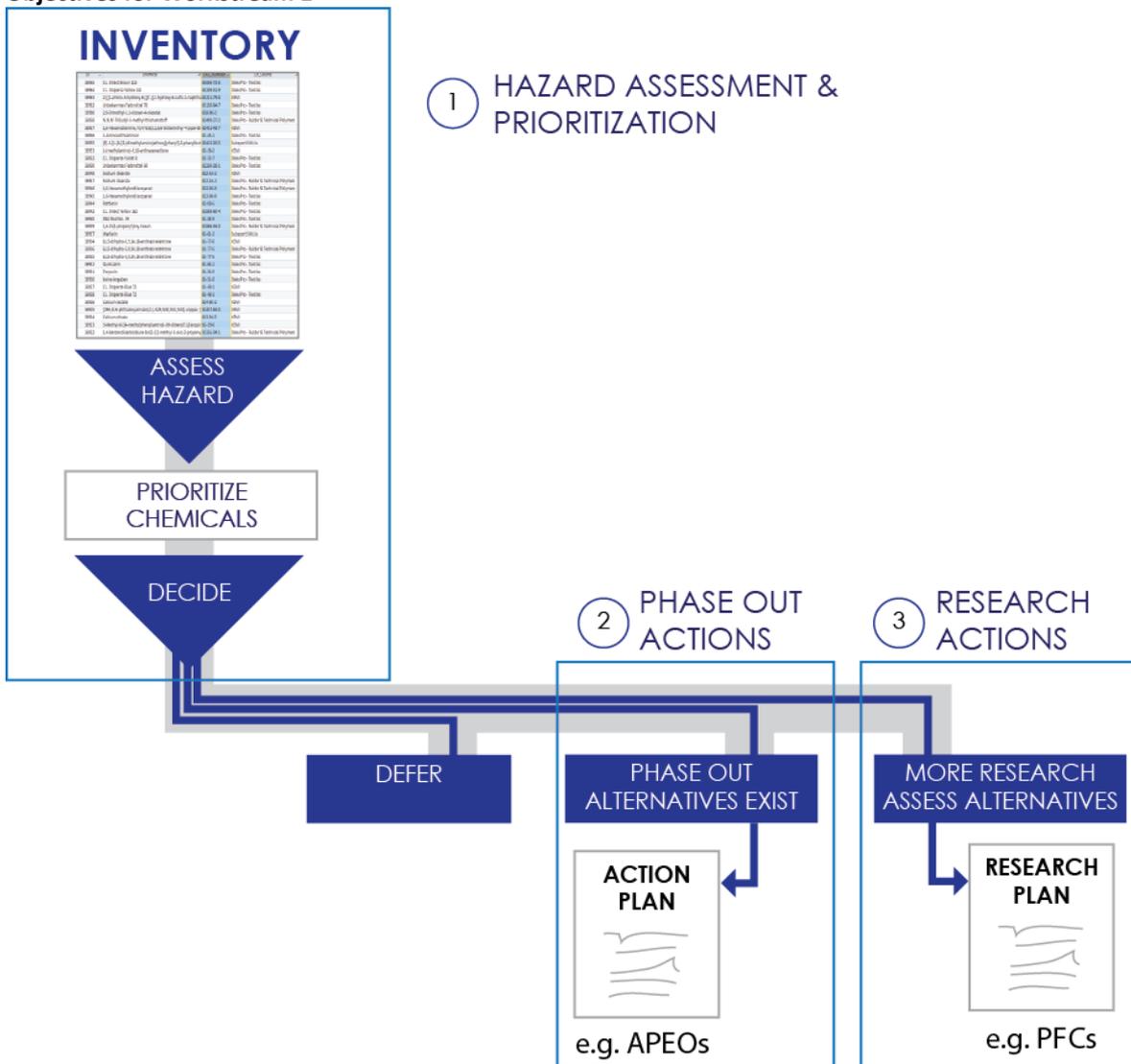
1. **Hazard Assessment and Prioritisation.** Develop a transparent, validated process to prioritise hazardous chemical substances used in the apparel and footwear supply chain for further action based on inherent hazard, and prioritise them for action based on the overall human health and environmental impact

⁷ These are Alkylphenol Ethoxylates/Alkylphenols (APEOs/APEs), Brominated and Chlorinated Flame Retardants, Chlorinated Solvents, Chlorobenzenes, Chlorophenols, Heavy Metals, Organotin Compounds (e.g., TBT), Per- and polyfluorinated Chemicals (PFCs), Phthalates (ortho-phthalates), Short-Chained Chlorinated Paraffins (SCCPs), and Azo Dyes that may release carcinogenic amines as defined in Annex XVII of REACH.

- Phase Out Actions.** Develop key actions against hazardous chemical substances that we have identified for elimination or substitution in our supply chain, including substances in the 11 chemical classes and our restricted substance list
- Research Actions.** Encourage research and development of safer and more sustainable chemicals and processes for the prioritised chemical substances that do not have viable alternatives under the current technological and economic conditions

These three parts to Workstream 1: hazard assessment and prioritisation, phase out actions and research actions, are described in Figure 4-1.

FIGURE 4-1
Objectives for Workstream 1



Part 1: Hazard Assessment and Prioritisation

The ZDHC group will work on assessing chemicals used in the industry and prioritise them for further action. In the past year, we partnered with the Outdoor Industry Association (OIA) to develop the Chemical Hazard Assessment Framework (http://www.roadmaptozero.com/df.php?file=pdf/Haz_Assessment.pdf). This framework defines the general, transparent process of assessing chemical hazard followed by prioritisation. The hazard framework allows for the use of publically available, transparent hazard assessment tools.

Prioritisation of chemicals identified as hazardous is also an important part of this process. We want to ensure that we address and eliminate the most critical environmental and human health impacts for each chemical substance targeted for action with available resources.

After the assessment, we will apply a transparent decision-making process to assign chemicals into the other two parts of this workstream, specifically to the phase out or research actions.

What will we achieve by 2015?

- A transparent process for assessing and prioritising chemicals that is clearly documented and reviewed by key stakeholders with ongoing bi-annual review cadence.
- A publically available list of chemical substances that are targeted for phase out and/or research.

It is important to note that the objectives for this Workstream 1, after initial establishment in the formative year (2013), will be constant. The process also should remain consistent as we use it to respond to emerging and new information each year.

Near-term Action Plan

Action: Provide a list of chemical substances and prioritise for phase out or further research		
<p>Starting with existing sources, including the REACH Candidate List of Substances of Very High Concern (SVHC), the Bluesign System Substances List (BSSL), the SIN List (Substitute It Now list from ChemSec) used in textiles, additional textile chemicals identified by KEMI, the Government of China, and brand RSLs, we will 1) create a list that contains information for each of these substances that will allow us to 2) develop a prioritisation framework and criteria to rank these chemicals for action or research.</p> <p>Working in partnership with stakeholders and the ZDHC Technical Advisory Committee, we will prioritise the list of chemicals with key criteria that may include:</p> <ul style="list-style-type: none"> • How the chemicals are used in the supply chain, in what types of formulations do they typically occur and in which processes are they typically used • Where chemicals are used (e.g., are they a direct input or do they appear as a contaminant) • How much of a chemical is used across the industry • Why they are hazardous • Available alternatives • Chemical class • REACH prioritization process and other regulatory frameworks <p>This information will help inform a transparent prioritisation hierarchy. This work will be done in partnership with stakeholders to ensure the hierarchy is sound. The ultimate determination from this work is to identify whether chemicals are targeted for phase out/restriction or whether we need to conduct more research on use and alternatives.</p> <p>Many of these chemicals are ones that have historically been targeted in the supply chain and will be quickly moved to action (e.g., organic solvents). However, this process also will help bring additional chemicals of concern to our attention, so we can actively push the industry toward cleaner operation and discharge.</p> <p>We will document our approach.</p>		
Results	Deliverables	Timeline
<p>Ongoing methodology to identify and flag priority chemical substances</p> <p>Creation of a prioritised list of chemicals with known hazards where each chemical has been populated with additional information such as chemical class and use</p>	<p>List of priority chemicals for further action</p> <p>Documented and transparent process</p>	<p>The first deliverables will be completed by August 2013.</p> <p>However, this will be ongoing work that will occur at regular (to be specified) intervals.</p>

Part 2: Phase Out Actions

Phase out actions are specific items the ZDHC will implement to achieve successful elimination or substitution of the prioritised chemical substances identified in the assessment and prioritisation process.

There will be close coordination between the assessment and prioritisation work and the detailed lists targeted for phase out. Many of these initial “phase out” chemicals will map to the 11 priority chemical classes that are described in the first Joint Roadmap. Many of those classes of chemicals have already been targeted for phase out in our supply chain. We also conducted benchmarking of effluent in 2012 and 2013, and these results inform where we focus efforts first, heavy metals, short chained chlorinated paraffins (SCCPs), APEOs, PFOA and PFOS (which now have specific phase out dates) and ortho-phthalates.

What will we achieve by 2015?

- We will strive to communicate and achieve phase out of initial priority chemicals⁸ (with a KPI to be determined) within the top 50% of total wet process production of our respective supply chains.
- We will develop a clearly defined MRSL.

Near-term Action Plan

Action: Increase awareness of chemicals targeted for elimination and substitution in the supply chain and provide recommendations		
<ul style="list-style-type: none"> • We will collate existing resources and communications to drive consistent messaging around phase out within the supply chain (e.g., brand resources, AFIRM). For example, some brands have developed APEO handbooks. The ZDHC group will collate these materials and prepare a ZDHC toolkit for supply chain communications. • We will translate these messages into the languages of our manufacturing countries to ensure we effectively communicate with our supply chain partners. • We will develop new, simplified communications where needed. • We will prioritise communications around chemicals that were detected most often in the benchmarking studies conducted in 2012. These classes include: heavy metals, short chained chlorinated paraffins (SCCPs), APEOs, PFOA and PFOS (which now have specific phase out dates) and ortho-phthalates. We also will examine tools and recommendations for other chemicals that are targeted for phase out, but first we will proceed with the classes found in benchmarking. 		
Results	Deliverables	Timeline
Quick activities that will ensure that priority chemicals are widely known and initial actions and recommendations are communicated to relevant supply chain partners	Collection of documents and guides in various languages that have been shared with supply chain partners to increase awareness of chemical elimination and substitution	The first deliverable will be completed by December 31, 2013. However, this will be ongoing work that will occur at regular (to be specified) intervals

Action: Develop a KPI that each brand can use to track whether phase out has been achieved at a supplier location		
<ul style="list-style-type: none"> • Without a clear KPI, it will be difficult to monitor how we are truly progressing in the journey towards zero discharge of hazardous chemicals. Tracking progress against “phase out” is very tricky and needs to be flexible for each company. • We will examine ways to monitor progress that give a holistic view of supplier operations, not just a snapshot in time. • We will also look at different units of measuring progress. 		
Results	Deliverables	Timeline
Clear and transparent way of monitoring progress in zero discharge of hazardous chemicals.	Formula or instructions that each brand can follow to track progress.	First scoping of KPI will be completed by Fall 2013

⁸ List to be clearly specified by the assessment and prioritisation work. While we know many of the key chemical substances and classes that will be targeted (e.g., chlorobenzenes, APEOs), we will develop a specific list of substances for transparency and clarity.

Action: Define and develop the ZDHC MRSL		
Drawing on the results of the ZDHC benchmarking studies we realize that RSLs only focus on product content. Use of restricted substances may occur on the production floor in processes (e.g., equipment cleaning) even though the restricted substance is not added to the product. Hence, the products can fulfill RSL testing, but these chemicals may appear as contaminants in discharge anyway. As such, we will develop a MRSL.		
Results	Deliverables	Timeline
Chemicals targeted for phase out are not used in processes or products, resulting in cleaner effluent Success will be monitored by KPI developed in concurrent work	MRS� document publically available Supply chain communications that increase awareness of the MRSL	The first deliverable will be completed by September 30, 2013

Part 3: Research Actions

The third part of this Workstream 1 focuses on research and development for substances that do not have suitable alternatives in the market and that were prioritised in the course of this workstream. We aim to encourage innovation and development of sustainable chemistries in general and specifically for potentially hazardous substances that are difficult to substitute. We also want to ensure that we avoid regrettable substitutions by assessing new chemistries before introducing them in our supply chain. We will partner with other groups that have the same focus and/or expertise, such as industry associations, chemical industry, or research institutes, and incorporate the REACH Authorisation process where applicable.

This part of the workstream is closely linked to the initial hazard assessment and prioritisation aspect of the workstream. The first group of chemicals we are tackling is replacements for long-chain PFCs associated with PFOA and PFOS which are persistent, bioaccumulative and toxic. The industry recognizes that there is a strong call to move away completely from perfluorinated and polyfluorinated chemistry. However, since the move from fluorinated to non-fluorinated repellency technologies is challenging, the industry will conduct further research on the performance and safety of alternatives for all uses and performance levels.

In general PFCs are used for textiles with special performance requirements with regard to water, oil, and soil repellency and stain release. Especially for high performance levels, there are at the moment no PFC-free alternative products available on the market with equivalent functional properties.

All ZDHC members have committed to eliminate long chain PFCs and the associated critical substances of PFOS and PFOA.

What will we achieve by 2015?

- We have set up an evaluation and substitution process, starting with PFCs, which will be used for other potential chemicals that need to be assessed and substituted in the future. We will reference existing frameworks, such as the EU REACH Authorisation evaluation and substitution processes.
- Alternatives to PFCs have been identified and assessed to avoid regrettable substitution.
- The PFC-free repellency finishes have been checked with regard to performance levels, especially on water, oil, and soil repellency, stain release and durability.
- Evaluation of short chain and PFC-free alternatives have been documented as it relates to hazard and consumer performance.

Near-term Action Plan

Action: Conduct a research project on durable repellency technologies, to include water, oil and soil repellency and stain release, in the outdoor and fashion industry to substitute perfluorinated and polyfluorinated substances by safer alternatives for all uses and performance levels.
<ul style="list-style-type: none"> • Finding alternatives to PFCs is a complex challenge and one that the ZDHC group cannot solve alone • The research project will be a collaborative project between ZDHC, the European Outdoor Group (EOG), OIA and the Bundesverband der Deutschen Sportartikel-Industrie (BSI) (German Sporting Goods Association) • This research will be conducted based on available funding.

Results	Deliverables	Timeline
Creation of a categorisation scheme for products in the outdoor and fashion industry that currently require repellency	Categorisation scheme for apparel, footwear and equipment products in the outdoor and fashion industry that currently require repellency, for use in feasibility assessments of alternative repellency technologies.	<ul style="list-style-type: none"> - Reply to request for proposal due by end of June 2013 - First deliverables by end of September 2013 and ongoing
Identification and collection of performance data for short chain and non-fluorinated repellency technologies	Database containing information such as the definition of performance levels and testing parameters that can be applied to all use cases.	Ongoing after sending out the request for proposal
Data gathering and assessment of the potential environmental and human health impacts of short-chain and non-fluorinated repellency technologies	A recommended system for conducting an assessment of the environmental and human health impacts of short-chain and non-fluorinated repellency technologies and specification for a dataset needed to conduct assessments using this system. Creating a database containing information as above with identification of data gaps.	To be applied after the model for hazardous risk assessment tool that is to be developed under Part 1 of Workstream 1
Create a streamlined data collection and dissemination system for data collected in and beyond this project	Development of a data dissemination system	End of 2016

4.2 Workstream 2: Training

Overview

This workstream is focused on delivering the training, capacity building and information exchange necessary to support the ZDHC Programme's 2020 goals. The training program will aim to provide options in local languages and tailored to different market needs as necessary. We will work with our supply chain partners to understand the types of players that should attend training and target attendance accordingly.

Why are we focusing on this work?

A well informed and educated supply chain is a precondition for implementing all future activities to reach the 2020 goal. Creation of web based and physical training infrastructure will enable a two-way sharing of concepts, best practices and key messages effectively over the lifetime of the ZDHC Programme.

What is our key objective?

Our objective for this stream of work is to develop training infrastructure and content that will support awareness and sustainable knowledge transfer of the ZDHC concept and the necessary skills and education to achieve and maintain it for all parts of the supply chain, including brands and stakeholders.

What will we achieve by 2015?

- A functioning training and capacity building infrastructure is in-place in at least three key sourcing countries.
- Top suppliers providing 50% of the total brand's production are trained by 2015, using a modular training approach with contents related to all ZDHC programmatic guidelines and tools.
- Industry acceptance and demand for ZDHC's offered trainings.
- Industry preference for ZDHC Programme's training. Supply chain members booking training on their own initiative.
- Evidence-based results showing that trainings support and deliver against the ZDHC goals.

Near-term Action Plan

Action: Establish partnership with a training organisation and set up a near-term curriculum outline		
Results	Deliverables	Timeline
Signed agreement with training provider	Signed agreement with training provider	July 2013

Action: Disseminate and promote training in first key market (China)		
Results	Deliverables	Timeline
Public training is available	Develop the first Chemical Management module Pilot project training in China	October 2013

Action: Expand to two additional markets		
Results	Deliverables	Timeline
Training is publically available in two other markets (e.g., India and Bangladesh)	Develop training capacity with selected service provider in two additional markets	December 31, 2014

Action: Integrate training in external projects		
Results	Deliverables	Timeline
Agreement with Project partner	Utilise and promote training within the programs	December 31, 2013

4.3 Workstream 3: Right to Know

Overview

Why are we focusing on this work?

The Right to Know principle is one of the foundations of our work. This workstream is focused on how disclosure drives improvements within the industry but also delivers value to key stakeholders including brands, factories, NGOs and the public. Managed correctly, we believe that Right to Know activities can:

- Build trust with our customers, local communities and other interested stakeholders
- Create resilient, clean operating supply chains
- Strengthen collaboration with stakeholders

What is our key objective?

The key objectives of this workstream include the following:

1. To support transparent communication of the performance improvements around the use and discharge of chemicals in a responsible manner
2. To support identification of facilities that can deliver to ZDHC Programme's requirements by ensuring a tool for communicating on performance
3. To communicate the performance of facilities in delivering Zero Discharge
4. To facilitate the disclosure of data from the chemical industry
5. To create incentives for facilities to disclose data
6. To provide the public with information to re-assure them that products and suppliers are managed responsibly

The ZDHC team understands that we need mechanisms for disclosure, regarding the use of hazardous chemicals, and that we need to move the industry to a new level of transparency in chemical usage. While we cannot achieve this alone, the sections below outline our near- and mid-term efforts to move towards these aspirational goals.

What will we achieve by 2015?

- Workstream 3 will develop a solid foundation for the disclosure of data from suppliers which will be used to indicate progress of facilities in implementing ZDHC best practices for the responsible use and management of chemicals. Specific achievements include the following:
 - A mechanism is developed to facilitate disclosure by the chemical industry that will lead to a list of chemical formulations that meet the ZDHC MRSL that can be shared with suppliers.
 - Drawing on best practices developed in other workstreams, a mechanism is developed to rate suppliers as a way to incentivize them to disclose. The rating system would be based on criteria such as: compliance with the ZDHC MRSL, compliance with local/national standards for discharge of effluent, reporting of discharge data and using the ZDHC formulation list.

Near-term Action Plan

Action: Define the criteria that will be included in the Right to Know performance rating mechanism (e.g., compliance with local/national standards)		
To support our work to identify and incentivize facilities that can deliver on ZDHC Programme's best practices, we will develop a performance rating system. This system would be based on criteria such as: compliance with the ZDHC MRSL, compliance with local/national standards for discharge of effluent, reporting of discharge data, and using the ZDHC formulation list. This work will look to draw from other tools and best practices already developed by others.		
Results	Deliverables	Timeline
ZDHC members have a transparent tool to incentivize facilities to share information.	Rating system criteria, weights and scoring guide Methods for assigning ratings and ensuring transparency	March 30, 2014

Action: Develop process for creating the preferred list of chemicals and dyestuff		
To move toward a positive approach to chemical input management, we will develop a mechanism for chemical companies to identify products that are compliant with the ZDHC MRSL. This will result in a list of chemical formulations or products that are compliant with the ZDHC MRSL, and will be made available to suppliers. We also will determine what the appropriate level of ZDHC due diligence assessment is for this list to ensure conformity of disclosure to the MRSL. We also will develop a mechanism that allows suppliers to improve their performance rating through the use of products compliant with the ZDHC MRSL.		
Results	Deliverables	Timeline
Suppliers know which products are compliant to ZDHC MRSL and can choose those products and reduce discharge of ZDHC priority chemicals as a result.	Mechanism for developing a list of formulation or products that meet the ZDHC MRSL.	To be determined

Action: Publish the extensive research into different methods for managing chemical compliance including Pollutant Release and Transfer Register (PRTs)		
In 2012, ZDHC conducted extensive research into disclosure methodologies. We will use this research to inform our actions in 2013 and beyond, but wish to publish this information so that stakeholders can use it and understand how our previous information gathering has informed our current actions. We will continue to engage stakeholders in this work.		
Results	Deliverables	Timeline
Disclosure research is available to interested parties	Summary report	To be determined

4.4 Workstream 4: Assessments and Audits

Overview

This workstream will create assessment and audit approaches that will be used to ensure strong environmental performance and continuous improvement throughout the supply chain including, but not limited to, chemicals management.

Why are we focusing on this work?

Workstream 4 delivers a structure to audit and support improvements at the Tier 1 and 2 supplier levels. The workstream supports the overall goal of alignment and harmonisation of standards and protocols in the industry. At the same time, the protocols will help with the overall management framework by systematically addressing environmental performance in the supply chain and to embed all practices, guidelines, tools and trainings developed within ZDHC with partner organisations.

What is our key objective?

Our overriding objective will be to deliver a structure to audit and support improvements at a Tier 1 and 2 supplier level, with focus on Tier 2 (for example mills and dyehouses).

We are working to share audit results through an appropriate sharing platform, respecting any antitrust concerns, to avoid duplication of auditing efforts. Furthermore, the joint audit protocols will ensure the necessary harmonisation needed for the success of environmental efforts in the textile supply chain.

What will we achieve by 2015?

- Generic Environmental Audit Protocol and Dyehouse Audit Protocol is used by brands, retailers and Tier 1 and 2 suppliers via a joint service provider or similar organisation, developed in strong cooperation with ZDHC, Sustainable Apparel Coalition (SAC), GSCP and other related organisations.
- Of ZDHC, SAC and GSCP members, there are 50 brands and retailers who use these audit protocols as their single, harmonised environmental protocol.

Near-term Action Plan

Action: We will develop a joint generic audit approach for environmental performance (including chemicals management) with the possibility for brands to, within legal confines, share supplier results		
We will develop a joint generic audit approach for environmental performance (including chemicals management) with the possibility for brands to, within legal confines, share supplier results.		
<ul style="list-style-type: none"> - A joint audit protocol that will put the least burden on suppliers being audited, while also effectively assessing environmental performance - The joint audit protocol will help avoid duplication of effort by developing a common way of measuring and verifying environmental performance 		
Results	Deliverables	Timeline
Draft Protocol delivered Training pilot protocol delivered at two to five suppliers Draft pilot protocol publically available by the end of September 2013 Twenty total audits completed by the end of 2013	A report about the results and conclusions to be made publically available with 2013 annual report. The report should include a simple KPI report based on statistics of nonconformances	December 2013

Action: We will develop a shared dyehouse audit protocol with a competent third party		
We will develop a shared dyehouse audit protocol with a competent third party.		
Results	Deliverables	Timeline
Conduct 20 pilots projects at mills and dyehouses by the end of 2013 (each brand commits to two to four pilot projects)	Completed audits.	Dye house audit module, June 30, 2014 Printer audit module (if applicable and requested), December 31, 2014 Incentive structure for audit participation, December 2013

4.5 Workstream 5: Management Systems Approach, Structure and Documentation

Overview

This work focuses on creating the approach, structure and documentation needed to support a ZDHC management system, which we believe is an effective framework for ensuring continuous improvement towards the ZDHC 2020 goals.

The management system should be easily internalized by the brands and their supply chain partners while accommodating the complexity of the ZDHC roadmap work and the textile supply chain chemistry applications. The framework will build on ISO management standards and other applicable frameworks, such as the OIA CMWG Framework.

Based on our experience over the last 18 months, we realize that an environmental management system (EMS) approach would be a beneficial approach for the ZDHC Programme. An EMS approach provides the ZDHC group, its suppliers and other stakeholders a well-defined structure to work towards, one that allows for inclusion of all projects introduced in the Joint Roadmap, Version 1.

Specifically:

- We believe that an EMS is an effective framework for improving overall environmental performance and is widely used throughout the industry as a best practice.
- A management approach allows for continuous improvement related to chemicals management and minimization of our impact on the environment, independent of the starting point.
- The management approach can provide the structure to include many of the current projects of the roadmap as ongoing projects or as technical tools, guidance, protocols or procedures.
- A management approach allows for an entry point for different actors in the overall system, including the chemical industry, Tier 1 and 2 suppliers and other stakeholders who wish to contribute to the success of the ZDHC commitment.
- The management approach should be developed for brands (and retailers), Tier 1, 2 and Tier 3 suppliers.

Why are we focusing on this work?

Many of our projects are directly linked to the work within brands and in our supply chain. We have already developed tools, such as the Chemical Hazard Assessment (CHA), and defined procedures; these deliverables now need to be embedded into a framework that guides the brands and their supply chain in how to deliver change in an effective manner. In order to improve performance in an effective way the tools, training materials, and other procedures will be integrated into the system of an EMS approach. We believe that the EMS approach will assist with our communication and make our work more efficient and more widely adopted by the supply chain.

The overarching purpose of an EMS is to improve environmental performance. Historically, the response to environmental problems created by industry has been regulation-driven, “end-of-pipe” remediation. This approach has had limited success, because it is a short-term and often cost-intensive solution and does not consider the well-established processes within the organisation. An EMS approach strives to address these

shortcomings by providing clear rules and responsibilities for handling environmental issues when they arise, before they negatively impact the environment. The integration of preventative measures within an organisation helps avoid or reduce “end-of-pipe” emissions and impacts.

The management system will create a well-defined structure for the ZDHC group and its partners to work within. This guiding structure, we believe, is an effective framework for supporting the continuous improvement of overall environmental performance and thereby supporting the achievements of the ZDHC 2020 goals.

What is our key objective?

Our objective in this workstream is to develop a management framework that allows for brands, retailers, Tier 1 and 2 suppliers and chemical suppliers to understand their roles, by developing clear guidelines that allow all committed supply chain stakeholders to participate and take responsibility for their part of the value chain. This level of alignment and harmonisation will be key to delivering on the ZDHC vision, mission and 2020 goals. The documentation should include outcomes of other workstreams and thereby build out a comprehensive, yet pragmatic management system.

To summarize, our objective for this work restructuring will be to begin drawing the picture of what our supply chain should work toward. By folding in all our existing workstreams, we give our entire Programme a structure that is known and understood in the industry, a programme that will be as easy as possible to communicate – namely a management system structure.

What will we achieve by 2015?

- Adoption of the overall management framework by ZDHC members and partners that serves as a structure for delivering environmental improvements and systematic change in the supply chain.
- Alignment and coupling of the overall management framework and the Audit Protocol(s) in an effective manner
- Use of the framework as a holding structure for the ZDHC collaboration for the benefit of ZDHC members and their partners
- Perception of the framework as an effective mechanism for driving change and delivering improvements by the supply chain partners, specifically the Tier 2 and 3 suppliers.

Near-term Action Plan

Action: Develop the ZDHC EMS Manual (including structure for guidelines, procedures, tools and protocols)		
Results	Deliverables	Timeline
Documents are produced and available	Rough structure for manual, guidelines and procedures	Draft for consultation, October 2013
Brands and suppliers implement these tools	Draft manual 'high-level' with exemplary inclusion of 'test' guidelines and procedures; completed tools and decisions	Final manual prototype, December 2013
Training is delivered on this topic	Consultation with ZDHC and partners, as well as selected stakeholders	
	Final manual prototype	

Action: Develop guidelines for brands, Tier 3 suppliers, and mills		
Results	Deliverables	Timeline
Completed guidelines document.	Guidelines documents - Drafts for Pilot: - Brands - Mills and dyehouses - Tier 3 suppliers	October 2013 (brands and mills) December 2013 (suppliers)

Action: Develop ZDHC EMS procedures		
Results	Deliverables	Timeline
Completed EMS manual and procedures.	Chemicals management focused EMS procedures.	March 2014

4.6 Workstream 6: Stakeholder Partnering

Overview

The apparel and footwear industry is a complex, interconnected dynamic system with many players. There are a number of systemic barriers to be overcome in order to shift the system to more sustainable practices and to achieve zero discharge.

Key Objectives

The key objective of Workstream 6 is to build partnerships and achieve stakeholder support for zero discharge. We need to engage with stakeholders and stakeholder organisations, build alliances and partnerships, align activities and address system barriers and leverage points to achieving the 2020 goals of the roadmap.

Since the brands represent one group of stakeholders within the system, we will need to partner with many groups, all of whom have a role to play. Key stakeholders include, but are not limited to:

- The chemical industry to deliver information and safer chemistries as well as to assist in direct implementation
- Suppliers who can develop and implement best practices
- Textile associations who can mobilize the sharing of best practices
- NGOs for partnership on projects and review of progress
- Funders to facilitate taking best practices and new technologies to scale (e.g., implementation of waterless dyeing technology)
- Regulators who can assist with disclosure mechanisms
- Entrepreneurs who are interested in creating breakthrough solutions to radically reduce the environmental impact of mills and dyehouses
- Academia to proliferate learnings and case studies and provide research and development

What will we achieve by 2015?

- Increased number of partner brands so that our coverage of the apparel and footwear supply chain increases
- Collaborated with key influencers from different parts of the system that provided expertise and helped us take workstream activities and projects to scale
- Increased engagement with suppliers as true partners in the process
- Established an independent External Advisory Board, comprised of representatives from the system (such as the chemical industry, NGOs, suppliers, academia and investors/funders). The remit of the external

advisory board would be to provide strategic advice to the ZDHC Programme and evaluate progress against roadmap goals.

Near-term Actions

Action: We will engage with key influencers in the system		
We wish to avoid duplication of effort and resources in addressing similar broad goals.		
Results	Deliverables	Timeline
Improved understanding of joint opportunities for collaboration and partnership	Three regional stakeholder meetings	April 2014

Action: We will engage stakeholders against specific workstreams for which we need additional expertise and resources		
The ZDHC approach requires significant expertise that may lie outside of the capabilities or resources of the member brands		
Results	Deliverables	Timeline
Stakeholders are aligned against workstream actions	Aligned with relevant workstream deliverable	Ongoing

Action: We will engage with chemical suppliers to promulgate best practices and engage materials and finished goods suppliers on best practice implementation		
Broad adoption of better chemistry and better chemicals management are key leverage points for achieving change at scale		
Results	Deliverables	Timeline
Progress towards 100% supplier coverage of zero discharge commitment by 2020	20% of suppliers, representing highest materials volumes, are committed and on pathway to zero discharge	2015

Action: We will increase the number of partner brands to at least 40 members by 2015		
Increase the number of partner brands with established supply chain and RSL management practices in place to 40 by 2015		
Results	Deliverables	Timeline
Increased leverage within our value chain	20 signatory members in 2013 30 signatory members in 2014 40 signatory members in 2015	2015

Action: We will establish an external advisory board		
Provides expertise that complements the expertise within the membership group		
Results	Deliverables	Timeline
Advisory board reviews overall achievements and prepares final report	Advisory board established Regular bi-annual cadence of meetings and delivery of annual assessments	Advisory board established in 2013 Regular review cadence through 2015 and beyond

4.7 Workstream 7: Chemicals Management Best Practices Pilot

Overview

This workstream is focused on piloting best available chemistry practices at a set of supplier locations to determine which best practices create the most valuable outcomes and business case.

Why are we focusing on this work?

There are known best practices for chemicals management, treatment and water stewardship. However, the impact of applying these best practices at supplier sites, and the associated business case for doing so, is unclear.

What is our key objective?

The goal of this action item is to reduce negative environmental impact to the lowest possible level, through best available technologies and processes, and to evaluate the business case for implementing these best practices. This action will allow us to evaluate how close to “Zero Discharge of Hazardous Chemicals” a facility can achieve when using chemicals which do not intentionally contain any of the 11 priority chemicals and are compliant with the most stringent RSL of the brands participating in the study while optimizing use of resources through best available technology and processes.

What will we achieve by 2015?

Working with a subset of supplier locations, we will:

- Work with key experts and stakeholders to develop a chemicals management best practice pilot project
- Identify best practices (for example input quality, input management and process management), to apply at study sites
- Disseminate best practices across supply chain partners through training platform or other communications
- Outline parameters to monitor as a result of our intervention, possibly including BOD/COD, TSS, pH, temperature, for the presence of 11 priority chemical classes, total water discharge, water consumption per kilo of product and energy consumption per unit of product.

Near-term Action Plan

Action: Pilot best available chemistry practices at a set of supplier locations to determine which best practices have the most valuable outcomes and business case		
Results	Deliverables	Timeline
Clear understanding and value proposition for key best practices. This information will support the OIA Chemicals Management Framework and create case studies that will demonstrate the value of achieving tasks/milestones in the framework.	A report with clear recommendations on what actions to scale within the supply chain and the business case for Tier 2 suppliers in 2015 and beyond	Report available within 6 months of kickoff. Kick-off of this project is anticipated in 2013.

Partnerships and Communications

ZDHC is seeking systemic change in our industry and partnerships are critical to achieving this change. While the ZDHC members can influence some aspects of our industry, many aspects are outside of our direct control and we must rely on other stakeholders to achieve our goals. Indeed, many groups are working to improve environmental and social conditions in the textile and apparel industry and we will align with these groups to meet the following objectives:

- Successfully achieve our shared commitments
- Leverage resources
- Ensure efficiency
- Leverage collective industry power/voice
- Work towards harmonised outcomes/standards/guidelines
- Avoid duplication of effort

ZDHC has already established many partnerships. Examples of these follow.

- We have established a Technical Advisory Committee comprised of representatives from several textile chemical companies and industry associations. This committee provides technical support to much of our work and participates on project teams.
- We are partnering with BSI, EOG and the OIA in our work on durable water repellent (DWR) chemistry.
- We are partnering with the Global Social Compliance Programme (GSCP), and the SAC to develop audit and assessment tools; we seek alignment with other related organizations as well.
- We have begun a partnership with the United Nations Environment Programme (UNEP) Chemicals in Products (CiP) initiative to explore ways to collaborate.
- We have held two stakeholder events, one in Portland, Oregon, USA and one in London, UK, to foster greater partnership and build relationships with stakeholders.

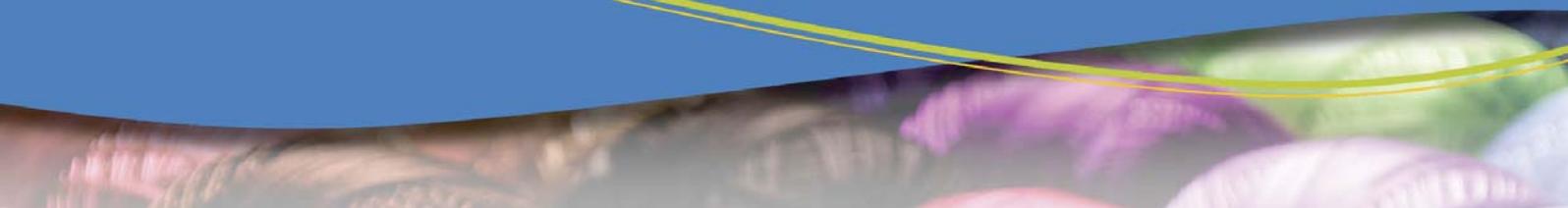
We realize that stakeholder engagement is an ongoing task. In the near-term, we plan to establish an External Advisory Board comprised of key stakeholders who will give strategic advice on the ZDHC Programme's work. We also are planning a ZDHC Summit in Asia in 2014.

We will continue to identify and reach out to stakeholders that can support the ZDHC Programme's work. To organise this effort, we have begun mapping stakeholders that are relevant for the ZDHC Programme and partnering activities, including:

- Industry associations
- Tier 3 suppliers and chemical industry associations
- NGOs with environmental/social focus
- Regulatory/policy makers
- Tier 1 and Tier 2 suppliers
- Funding organisations
- Academia
- Traditional and new media

We are always looking for additional support in achieving this ambitious goal, whether a stakeholder is interested in becoming a new member, a partner, or just staying in touch with us. Our goal is global and we have established regional engagement groups to acknowledge regional differences. Currently, we focus efforts in Asia, Europe and the United States. Opportunities for participation follow.

1. **Join the ZDHC.** The ZDHC Joint Roadmap defines the vision and practical projects that brands/retailers will implement. There are currently three types of ZDHC members: Signatory, On-Boarding and Associate



members. Members contribute financially to the ZDHC Programme and are also committed to contributing human resources and technical expertise to the vision and projects of this Joint Roadmap.

ZDHC members benefit from shared insight and experience of peer brands, resource-pooling to accomplish shared goals, and the advantages of speaking with a collective, multi-brand voice in the market place. Furthermore, the outcome of all programme products and deliverables can be used by all members, unless a project is specifically funded only by some members. Given the challenge of driving change in the supply chain, we will only succeed if we work together. This is the true origin of the ZDHC collaboration.

2. **Partner with Us.** ZDHC partners' core focus may not exactly align with the ZDHC members', but activities overlap and are aimed at achieving similar objectives. In such cases, we are interested in aligning and expanding our efforts together.
3. **Keep Informed.** If you are interested in following our activities, we offer numerous ways to receive information. To receive updates and stay informed on the ZDHC Programme, register at info@roadmaptozero.com and monitor our website (www.roadmaptozero.com) for information on stakeholder webinars, meetings and other events. The ZDHC website will be enriched with the following additions:
 - Specific project outcome presentations; project deliverables will be released on a rolling basis on our website www.roadmaptozero.com
 - Training information
 - Quarterly and annual reports, posted on our website (www.roadmaptozero.com)
 - Subscription to our information feed (info@roadmaptozero.com) for regular information on our progress
 - Open consultation periods to be set up on specific topics
 - Press releases to be organised for specific items
 - Regional stakeholder events to be held for each geographical area

Closing

This update to the ZDHC Joint Roadmap is informed by 18 months of work insights and experiences as well as by significant stakeholder input received over this time. With this document, we aspire to share our long-term vision and goals, describe our guiding principles, outline the workstreams that we have developed to organise our work, and present the goals, milestones and deliverables that we will achieve over the coming years.

Our vision and 2020 goals are ambitious, and the ZDHC team realizes that we will need strong support from many stakeholders to achieve them. In this document, we have balanced these aspirational, system-wide ambitions with practical, on-the-ground work plans that include clear milestones and deliverables. While our path to 2020 is not yet entirely clear, we are confident that the actions we have outlined through 2015 will move us towards our vision of an apparel and footwear industry that delivers high quality product while using safe chemistries and operating in ways that keep communities free from unintended negative environmental impacts. We have an ambitious goal, but we are committed to working together to achieve it.

As always, we welcome your input, support, and questions. Continue to watch for communications from us on our website, www.roadmaptozero.com. Please also visit this site to reach out with specific questions, or to join our mailing list and stay apprised of our ongoing activities. Thank you for your interest and for your support.