

ACMT

Report on “Advanced Chemical Management Training” in
the garment industry – findings, experiences and lessons
learned

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The stuff colours are made of

How the ACMT programme started, what we learned and how it will continue.

Fashion is a part of life. We all want to wear clothes that we like and feel comfortable in. Chemicals are indispensable in clothes production, for example, to ensure colour longevity or provide coatings to protect against rain. Prior to Greenpeace's DETOX campaign in 2011, we lacked an overview of the chemicals being used in our business partners' wet dyeing factories, how these substances were being managed and how many other businesses were involved in the process.

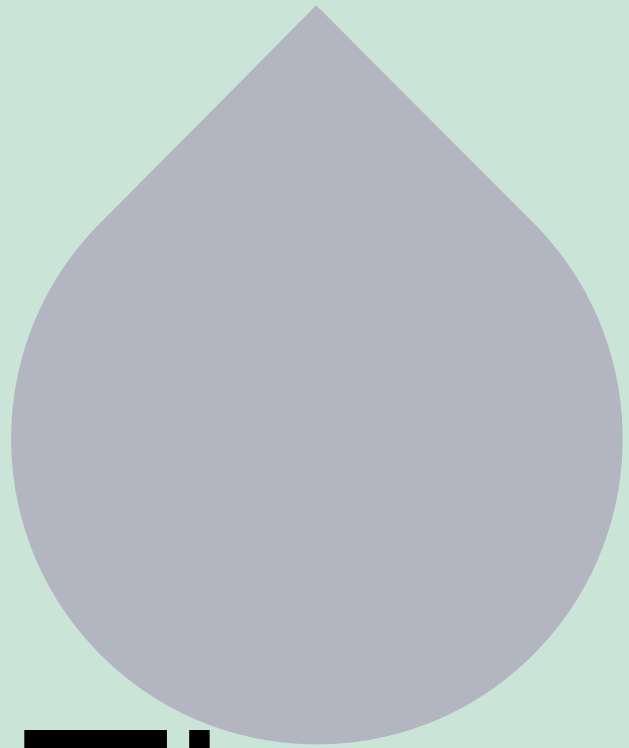
It was obvious to us from the outset that production processes must not be harmful to people's health or the environment in textile producing countries such as Bangladesh, Vietnam, China and Turkey. With the "Advanced Chemical Management Training" (ACMT) programme, we are addressing the problems locally. We have been working to replace toxic substances with better alternatives and to establish responsible usage wherever it is lacking. Good chemical and waste water management in factories significantly reduces the impact on nature and people.

We are proud to say that we have made significant progress in this area, although we are far from having achieved all our goals.

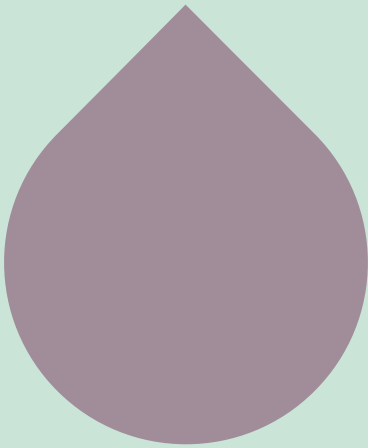
This report tells the story of the ACMT programme and the people involved, takes stock of what we have achieved and sets down the lessons we have learned for the future.

Daniel Koltermann,
Sustainability Manager

Michelle Herfeldt
Sustainability Manager



The



challenge



How Greenpeace revealed problems with chemicals in the garment industry and how Tchibo responded.

The 2011 Greenpeace campaign “Detox My Fashion” highlighted a dark side of the textile industry: although high ecological standards had been established in Europe, many toxic chemicals from dyeing and finishing processes were being discharged unfiltered into rivers and lakes in the primary production countries in the Global South. This seriously impacts people and the environment: toxic chemicals not only pollute much-needed drinking water, but can also interfere with the hormonal balance in humans and animals and trigger diseases such as cancer. Greenpeace’s high-profile campaign compelled major brands to examine what they were involved in and take responsibility for chemical use throughout their supply chains.

Chemicals are essential for the dyeing and finishing of textiles. Colours, colour accelerators and solvents used in dyeing are only some of the chemicals used. Before dyeing, some fabrics require bleaching. **Sizing** and **desizing** makes the processing of textile fabrics easier. After dyeing, further chemicals may also be needed to increase garment gloss, colour fastness or weather protection. Softeners increase textile suppleness, and other chemicals ensure that cotton fabrics retain their shape and are machine-washable. Though some of these substances can be replaced by natural alternatives, what is most needed is good chemicals management.

Central to the Greenpeace campaign was the **DETOX Commitment**: a voluntary commitment by major brands to work to replace all toxic chemicals and, where this isn’t possible, to keep them out of the human–nature cycle through proper waste water management. Tchibo signed this voluntary commitment in 2014 and has since become a leading brand in this area – a success that Greenpeace has also acknowledged.¹ Key here was Tchibo’s approach to developing a comprehensive training programme for producing factories: The “Advanced Chemical Management Training” programme, or ACMT for short.

The following pages show the challenges in chemicals management that Tchibo faced prior to 2014 and is still facing today. The second section (pp.12-33) describes how we addressed these challenges via the ACMT programme. The final section (pp.34-41) looks at how we want to improve chemicals management in the future.



Glossary:
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¹ Greenpeace: Destination Zero: seven years of Detoxing the clothing industry, Hamburg 2018, p.18.

Good to know

3,500

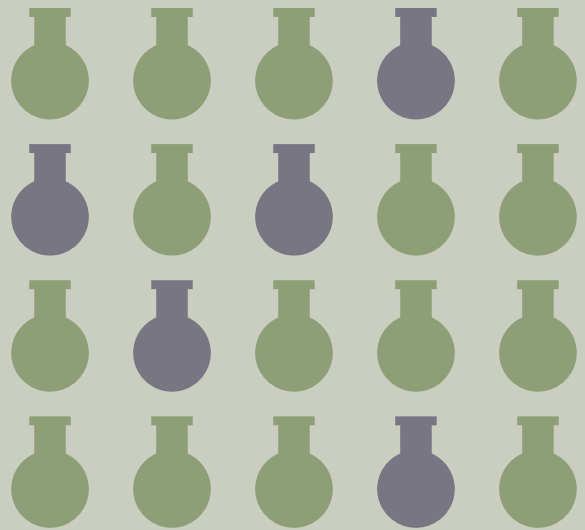
Over 3,500 different chemicals are used in the garment industry, of which:

10%

Harmful to health

5%

Environmentally harmful









25%

of chemicals produced worldwide are used in textiles.

CHALLENGE

Especially harmful

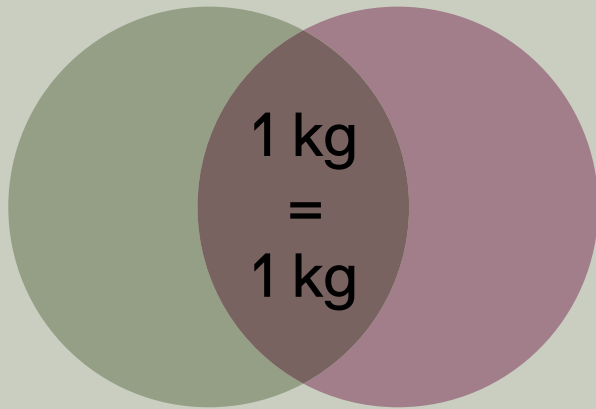
Greenpeace has defined 11 priority hazardous chemical groups. These are used in the garment industry as:

-  Plasticisers
-  Dyes
-  Fire retardants
-  Solvents
-  Antibacterial coatings
-  Water and dirt repellent coatings

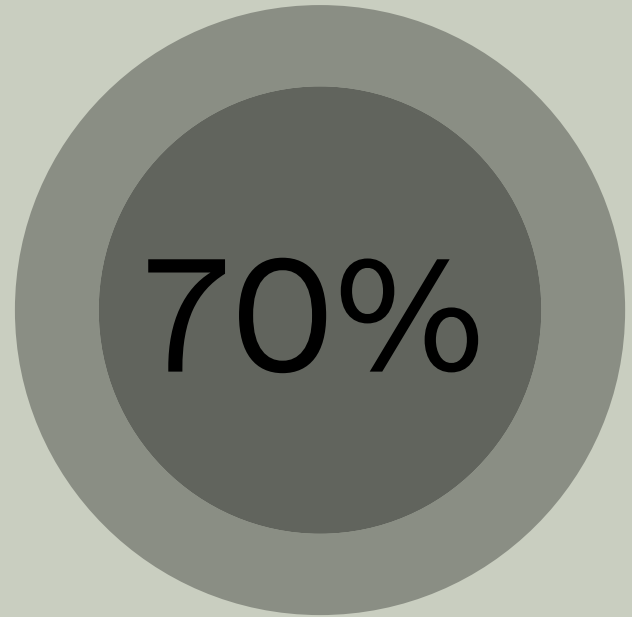
30-50 litres/kg

To dye one kilogram of fabric requires 30-50 litres of water. For yarn, as much as 60 litres are required.

Around one kilo of chemicals is used to produce one kilo of fabric.



Around 70% of all rivers and lakes in Asia are polluted by waste water from the garment industry.




Work steps

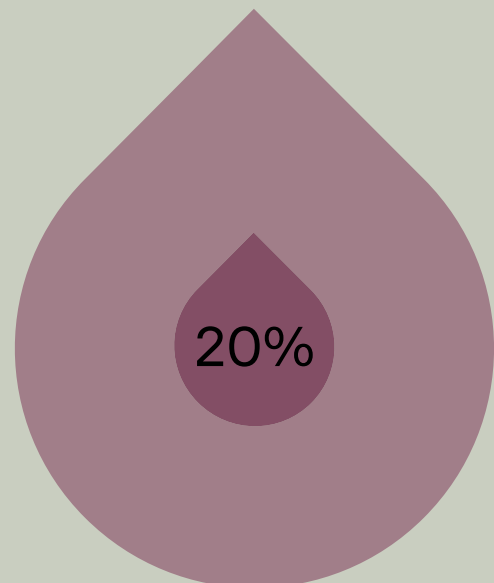
in a wet-processing plant

(for woven fabrics)

-  **Sizing** 
(Applying a protective layer to the yarn)
-  **Weaving**
-  **Desizing** 
(Removing the protective layer)
-  **Scouring**
-  **Bleaching**
-  **Mercerising** 
-  **Finishing, e.g. fixing**
-  **Dyeing and/or printing**
-  **Washing**

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The textile dyeing industry is responsible for 20% of the world's industrial waste water.



“We need to learn how to manage chemicals”

An interview with Anett Matthäi, professor for sustainable chemical use in textile production, on the challenges and solutions around chemicals in the garment industry.

Prof. Matthäi, why is chemical consumption so high in the garment industry?

ANETT MATTHÄI Three factors play a role. Firstly, the production chain from fibre to finished garment is very long and some of the steps, such as dyeing and finishing, are very chemical-intensive. Most of the chemicals are then washed out of the garments, meaning that rather than being retained in the finished T-shirt, they end up in waste water. Secondly, the amount of textiles produced worldwide doubled between 2000 and 2015 and continues to increase, meaning more chemicals are needed. Thirdly, fashion trends are primarily short-lived, meaning: more individualised processes where, for example, **dye liquors** and printing pastes are being mixed each time, resulting in proportionally more chemical waste.

Was nobody concerned about the high use of chemicals prior to Greenpeace launching the Detox My Fashion campaign?

ANETT MATTHÄI Apart from a few smaller eco-labels, only a handful were concerned. What was established on a mass scale were certifications such as the **OEKO-TEX® STANDARD 100**, which tests finished textile products for harmful substances. Here the focus is only on ensuring that consumers are not harmed. The standard is not concerned about whether harmful substances have been used in production, provided these leave no residues in the finished textile product.

Has chemical usage in the garment industry decreased overall since the start of the Detox campaign?

ANETT MATTHÄI That can't be said for sure. No register exists to record how many hazardous chemicals have been and are being used across different businesses and countries. The higher production volume that we now have compared to 2011 is reason enough for me to believe that chemical consumption has risen rather than fallen.

On the positive side, many manufacturers are gradually replacing hazardous chemicals in their textile product groups. This began with the chemicals that you can see (e.g. colours) and feel (e.g. plasticisers) or that have some other function in the finished textile. Chemicals in additives, such as detergents, are sure to also undergo closer scrutiny in the long term.

Which countries are particularly problematic in their use of chemicals in the garment industry?

ANETT MATTHÄI I would say those countries that have not yet implemented their own laws on the safe handling of chemicals or are not adhering to the GHS system. This “Globally Harmonised System of Classification and Labelling of Chemicals” (GHS) was created by the United Nations. It features pictograms identifying chemicals with certain properties. The aim is to harmonise national and regional labelling. Anyone, regardless of country, viewing the pictogram will then be aware of the danger posed by



Prof. Dr. Anett Matthäi

Teaches in the “Sustainable Textiles” Master’s programme at the Hof University of Applied Sciences. From 2015 to 2020, she worked at Tchibo on chemical safety in the non-food sector. For several years prior to this she worked in textile-chemical certification and auditing.

the substance and how to manage it to avoid harming people or the environment.

Two countries that have not yet incorporated the GHS into their own legislation are, of all places, India and Bangladesh, two of the most textile-intensive producing countries. If the legislation is not in place, the necessary infrastructure will also probably be absent, for example, to dispose of empty chemical drums.

Greenpeace lists eleven groups of chemicals that should be banned from production. Do you think these are the most important substances?

ANETT MATTHÄI The eleven substance groups are rightly listed, which is why they can be found on all the **Manufacturing Restricted Substances Lists** of brands. These are substances that fall into certain categories: substances that are dangerous to people, known as **CMR substances** – carcinogenic, mutagenic, reproductive toxicity – and substances harmful to the environment, such as **PBT substances**, i.e., persistent, bioaccumulative and toxic substances. Substances with these properties are legislatively listed and also included in businesses' voluntary exclusion lists because they are hazardous and also highly relevant in the garment industry.

Are substitutes available for these hazardous chemicals?

ANETT MATTHÄI That varies a lot. For example, good alternatives are now available for polyfluorinated and perfluorinated substances, known as **PFAS**, which are used in outdoor garments to make them water-repellent. These alternatives are sufficient for a rain jacket for city wear in milder conditions. But PFASs are still required for more extreme requirements, such as protective clothing for fire-fighters, which also need to repel oily and flammable liquids. No alternative substances are currently available that are as technically effective. We do see a trend whereby increasingly more garment manufacturers are analysing the exact purpose of a garment and then looking for the best alternative to conventional substances. Increasing demand has also made it commercially viable for chemical manufacturers to bring these more humane and environmentally friendly alternatives to the market. A lot of progress is therefore being made in this area.

What other solutions are available to make chemical usage in the garment industry safer?

ANETT MATTHÄI Brands need to agree on a common industry approach and then work locally in factories to ensure the necessary conditions are in place. Technical conditions and qualified personnel are needed in production, textile and environmental engineers as well as mechanical engineers. Only then can we ensure working conditions are safe. In my opinion it is impossible to replace all substances classified as hazardous in the


“Good alternatives are now available for many problematic substances”

garment industry, because some properties are essential for specific products and no alternatives are available. This is why we must learn to manage them professionally.

Is there anything that consumers can do?

ANETT MATTHÄI As a consumer I think you need to be aware that in a very cheaply produced garment the best chemicals cannot have been used. Its production will also not have been possible in factories that maintain high environmental and employee safety standards or pay living wages. Boilers in dye works will have probably been fired with coal or oil, certainly not with renewable energy. In my opinion a T-shirt for €1.99 cannot meet the required production standards.

To reduce chemical consumption in the garment industry, we need to consume less. And to enable that we need to refocus on the product: a good yarn from which to make a good, durable fabric, and then dye and finish it to create a long-lasting textile. This is how the **Detox Commitment** can be implemented most effectively. ●

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Workers at a textile factory in Dhaka, Bangladesh (not a Tchibo supplier) inspecting dyed jeans.

The

ACMT

ACMT PROGRAMME

programme

Tchibo, like other large enterprises in 2014, faced the question: how can we sustainably improve toxic chemicals management in the garment industry? In response, we worked together with GIZ and REWE to create the ACMT programme.



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In 2014, after discussions with Greenpeace Germany, Tchibo adopted the **DETOX Commitment** to reduce and safely manage hazardous chemicals in textile production. Since then we have strived to avoid using toxic substances by applying strict regulations right at the product development stage. We also support wet processing factories to analyse waste water, check chemical inventories and replace toxic substances with more environmentally friendly alternatives.

In a strategic alliance with the REWE Group and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), we developed a comprehensive training programme in which textile factories in China and Bangladesh were supported over a period of eight months starting from 2016. In 2020, the “Advanced Chemical Management Training” (ACMT) was further expanded as part of the Partnership for Sustainable Textiles and also introduced in Pakistan and Turkey.

The approach we took was to establish a multi-stage training programme to empower workers in factories to acquire and pass on expertise within their own enterprises. To date, 59 factories selected by Tchibo in four countries have undergone training. These account for around 60% of all textiles produced for Tchibo. This has helped to establish new standards and best practices in chemicals management.

We had no preset path to follow because ACMT was a completely new departure. The following pages describe how we developed ACMT and how we integrated chemicals management with other initiatives in the garment industry.

Key facts

Project duration

2017–2022

Project partner

Tchibo REWE GIZ

59

Tchibo partner-factories have received training. The production plants are located in **four countries**:

China, Bangladesh, Pakistan and Turkey.

ACMT PROGRAMME

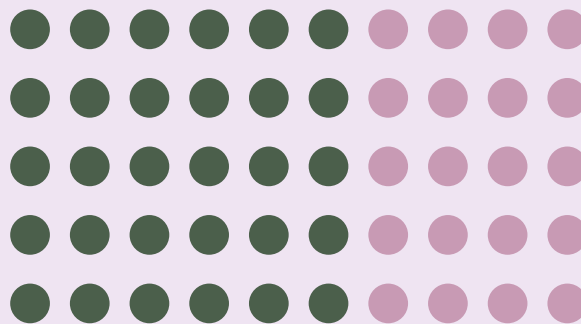


The 59 factories employ more than 120,000 people who have directly and indirectly benefited from the training, for example, through safer workplaces.

In 2021, over

60%

of all textiles produced for Tchibo came from these factories.



90%

of Tchibo partner factories dye fabrics as part of their production.

The remaining 10% use chemicals, e.g., for washing.

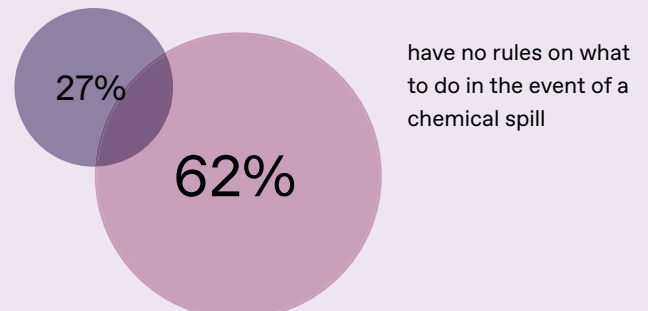
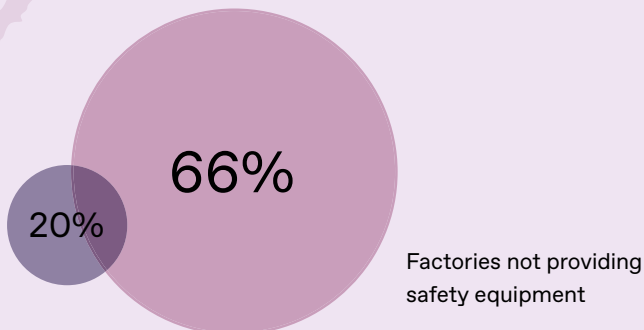
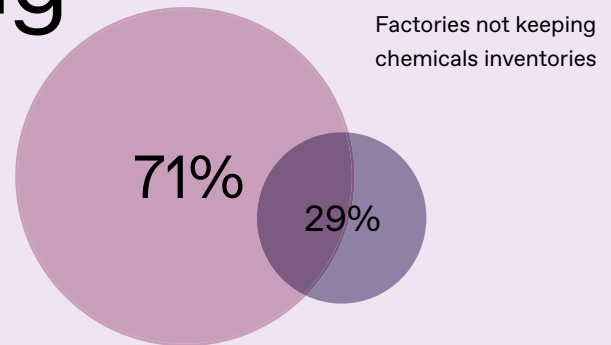
37 trainers

were trained in China and Bangladesh. They also conducted training in Turkey and Pakistan.

Factories making progress

The training resulted in major improvements in lowering risks in the factories.

Before training After training



Context: An industry seeking solutions

How do you raise awareness, deep into the supply chain, on chemicals management in textile factories? No ready-made solutions were available at the time. Standards and structures have now been established, also due to the pioneering work of the ACMT programme.

How are chemicals managed and disposed of in the garment-making industry? How many factories and dye works work for our suppliers? And how do you get every business in the supply chain to comply with higher standards in chemicals management? Many clothing brands and retailers were faced with such questions, yet there were no ready-made solutions available. The only thing obvious was that something had to be done, and quickly, because public pressure was mounting.


There was suddenly talk about lists of banned substances. Greenpeace was constantly updating the Detox Commitment, adding new chemicals to its lists. Companies that signed the Commitment in the first year were therefore working with different lists than brands who joined in the second year – even though many sourced their products from the same factories. This was a nightmare for producers, who had to deal with different requirements from customers despite all having the same goal.

Many factories also had no regulated way of managing chemicals. There were no reliable inventory lists to track quan-

Partnership for Sustainable Textiles

This is a multi-stakeholder partnership that was launched in 2014 by Gerd Müller, the then German Development Minister. It promotes due diligence and transparency in supply networks in textile supply chains. Activities by the textile partnership also focus on four key areas for improvement in the garment industry: living wages and purchasing practices, circular economy and climate, gender equality, and grievance mechanisms and remedies. Tchibo has been an active partner since 2015.

Zero Discharge of Hazardous Chemicals Initiative (ZDHC)

ZDHC helps factories improve their chemical management through training. Founded in 2011, the initiative now includes more than 170 brands and companies from the chemical and garment industries. Tchibo joined the initiative in 2018. ZDHC publishes a list of chemicals that must not be used at any point in the production process. The “**Manufacturing Restricted Substances List**” (MRSL)  has now established itself as the standard. It undergoes continuous ZDHC updating and extensions.

Sustainable Apparel Coalition (SAC)

The SAC is a global non-profit organisation uniting a wide range of stakeholders from the garment industry. The SAC is responsible for the **Higg Index**,  which enables brands to assess the sustainability of their textile and footwear supply chains. Tchibo joined SAC 2023 as a trial member for one year.

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Apparel Impact Institute (Aii)

Aii was founded by the Sustainable Apparel Coalition and others. The Aii team carries out various projects in the garment industry that contribute to greater sustainability around energy, water, chemicals and materials. Included here is the **Clean by Design programme** , which Tchibo tested for the first time in a factory in 2022 (see p. 37).

ties, types and routes of the substances used – from purchase to waste water management – nor was there sufficient knowledge about the hazards that individual chemicals posed to humans and the environment. It quickly became clear that external monitoring was insufficient. On-site support was needed to raise awareness of chemical management issues among manufacturers and to establish long-term expertise.

Such intensive engagement with factories in producing countries had a precedent at Tchibo. In 2008, together with the Gesellschaft für Internationale Zusammenarbeit (GIZ), we initiated and moderated dialogues in garment factories on human rights, working conditions and discrimination. GIZ again made itself available as a partner this time, as it had already developed training materials on chemicals management in other projects. REWE also came on board as another retailer, and Tchibo had already been in discussions with them on other sustainability issues. The train-the-trainer approach was the preferred method (see pp.18–19). The ACMT project was born (more on its genesis and development on pp. 24–29).


The garment industry is now in a very different position. Many industry-wide initiatives, in which Tchibo has also been actively involved, have since been established (see infoboxes). The ZDHC’s Manufacturing Restricted Substances List has established a standard for dealing with toxic substances that makes it easier for producers to comply with requirements. Many trainers trained in the ACMT project pass on knowledge they have acquired and are in demand throughout the industry.

Klaas Nuttbohm from ZDHC sums up developments over the past decade: “The first five years of the DETOX Commitment saw a lot of movement in different directions, but in the last five years that has changed”. Although there is still a lot of homework to be done on implementation, he says: “Everyone is now working towards the same goal. The industry, by and large, is speaking as one voice”.

Method: Train-the-trainer

At the heart of the ACMT programme is the train-the-trainer method. What does it actually involve? How does it work? Questions and answers.

What is train-the-trainer?

There is a simple idea behind train-the-trainer: a person is trained, who then passes on their knowledge to people who will act as trainers in the future. With ACMT, the approach has been twofold. First, Tchibo, REWE and GIZ, together with the service provider Sustainable Textile Solutions (STS ) , trained 37 master trainers. These then conducted workshops in participating factories. Employees responsible for chemicals acquired important knowledge on sustainable chemicals management. With this newly acquired knowledge they were themselves able to become trainers in their factory and pass on their knowledge. Each factory was also supported by factory visits from master trainers in addition to the workshops, and received support for a total of twelve months.



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Who are master trainers and how were they selected?

A total of 37 master trainers received training. They came from very different fields, for example, from engineering professions, as well as from conventional audit-services providers. In an intensive training and selection process lasting several days, STS project managers together with Tchibo, REWE and GIZ selected the most suitable trainers.

What do master trainers learn in their training?

Master trainers had to be highly capable, i.e. able to train as well as advise and audit. In a multi-day training process they not only learned relevant knowledge about chemicals, but also a range of soft skills, e.g., role playing as factory managers and chemical representatives to better understand different needs. Training was based on materials provided by GIZ, from previous chemicals management projects, and updated by STS. During their first factory visits, master trainers were accompanied and supported by STS trainers to ensure that they would be able to apply what they had learned.

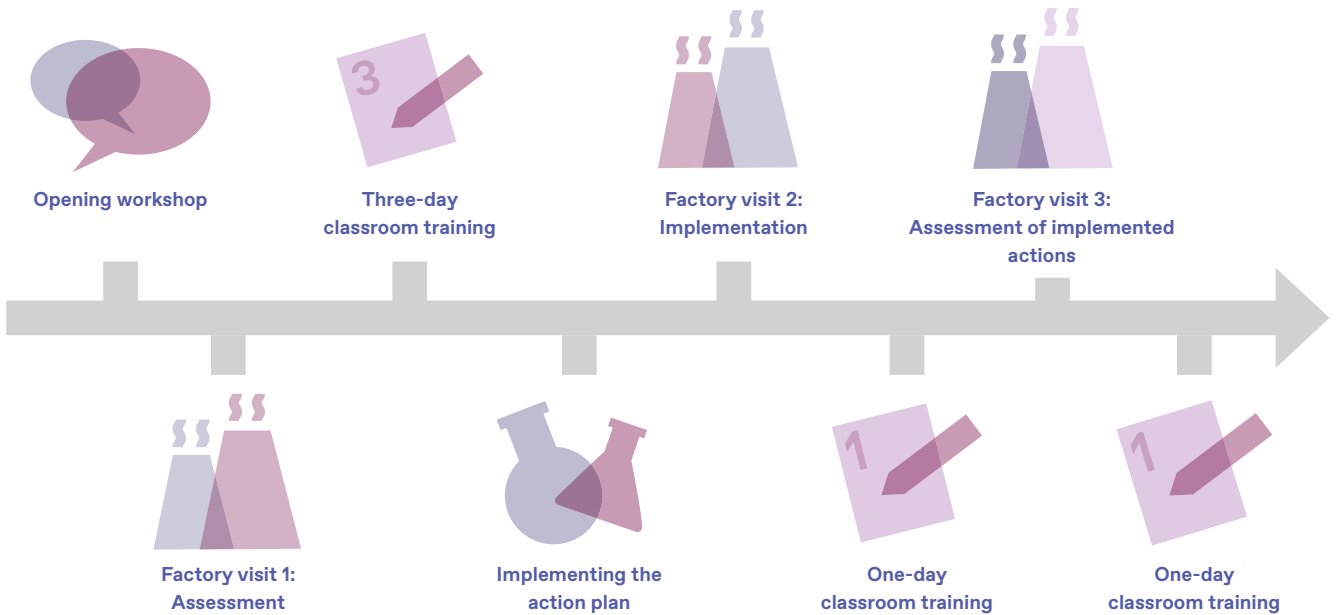
What benefits does train-the-trainer provide?

As equals rather than top down. Train-the-trainer means master trainers work hand in hand with factories. They indicate to those responsible where there is potential for optimisation and where safer alternatives are available. They not only explain where something requires changing, but also why. By empowering factory personnel through knowledge, the train-the-trainer approach can have a more long-term, lasting impact than traditional audit or top-down approaches could.

Are there any drawbacks to the train-the-trainer approach?

Compared to an audit, where factories are inspected for non-compliance in a specific area, train-the-trainer is much more expensive because it provides training according to specific needs. Project sponsors Tchibo, REWE and GIZ invested a lot of money in the development of the training materials, while the intensive twelve-month monitoring of participating factories also involved high expenses. For each participating factory, project sponsors incurred costs of EUR 10,000-12,000. Training materials and content also required regular updating, which entailed further costs.

**Training process in factories
Twelve months per factory**



“We had high expectations of our future trainers”

In this interview Tamara Wulf, a project manager, talks about the long journey from producing training materials to the first factory visit.

Ms Wulf, you helped from the outset to develop and support the train-the-trainer approach. What were the challenges involved?

TAMARA WULF It has been a very laborious process. First, we reviewed and revised existing GIZ training materials. A particular challenge was to adapt complex chemical terminology so that everyone could understand it – and then to translate it into Chinese. It all took a lot more time than expected. What we also didn't expect was just how difficult it would be to find suitable trainers. I have never experienced such an intensive selection process.

Why was that?

TAMARA WULF We didn't just select individuals, but also larger consulting firms who would then provide the multiple staff required for ACMT. The different firms as well as the individual staff had widely varying levels of prior knowledge. We had high expectations of our future trainers. They needed to be capable of applying complex chemical knowledge to larger contexts and thereby initiate change in the factories. This required them to be able to present themselves appropriately and to have the necessary soft skills. These were big requirements, and it wasn't easy to find people who met all of them. Many of the trainers we did train for ACMT are still involved in similar activities today, and their skills are in great demand.

After the selection process, the trainers visited the factories independently. How did the factories respond to what ACMT was offering?

TAMARA WULF Very differently. The factories participating in ACMT were selected by Tchibo and REWE. This made ACMT seem like an obligation the factories had to meet rather than voluntary training. Some were very open to the ACMT programme and the opportunity to upskill. Others participated only reluctantly so as not to lose custom. At a pre-arranged visit to a factory in China, we found ourselves before locked doors and were only allowed in reluctantly.

Chemicals management varied greatly in the factories at the beginning of the training. Some needed to first learn what it was all about, while others were able to immediately engage and start substituting hazardous chemicals. Many factories made significant progress thanks to ACMT and have remained engaged with the issue after taking part in the programme. This has also been due to chemicals management now playing a greater role in the industry and in the expectations of brand companies. ●



Tamara Wulf

was responsible for coordinating and implementing ACMT at the service providers MADE-BY and Sustainable Textile Solutions. She produced training materials and was involved in selecting trainers in Bangladesh and China and worked as a master trainer on improving participant soft skills. She now works for the Apparel Impact Institute (see p. 17).

The following pages present three of the 59 factories that completed the ACMT programme – with varying conditions and outcomes.



Shasha Denims

ACMT PROGRAMME

Location

Dhaka, Bangladesh

Founded

1996

Factory type

Denim production

Number of employees

2,557 (incl. subsidiaries)

Supplying Tchibo since

2018

Participation in the ACMT programme

2021-2022

Shasha Denims manufactures various denim products, from dyeing and processing the fibres to weaving the fabrics and sewing the finished product. According to the company website, sustainability is a priority at Shasha Denims. It includes using more environmentally friendly materials such as organic and recycled cotton, Tencel™ and hemp, as well as recycled plastic in denim production. Compared to many other producers, the factory was able to start at a higher level of chemicals management. For example, detailed inventories of chemicals were already available, workers wore adequate protective clothing when handling chemicals, and management had already implemented a system to ensure compliance with the **MRSL criteria** [☞]. The ACMT programme has trained key staff in chemical management, reduced water consumption and improved testing procedures for MRSL compliance. The only area where progress has not been made is in waste management. The company attributes this to weaknesses in Dhaka’s municipal waste management system.



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“The ACMT programme has increased the competence and confidence of our chemical management team. We are now able to carry out internal audits and have introduced ecomapping, which shows where hazardous materials are kept. What has been particularly helpful is the exchange with other factories facing similar challenges to ours”

Sirajul Islam, head of chemicals management

Location

Dhaka, Bangladesh

Founded

2005

Factory type

Sewing for woven and knitted goods

Number of employees

1,850

Supplying Tchibo since

2016

Participation in the ACMT programme

2021-2022



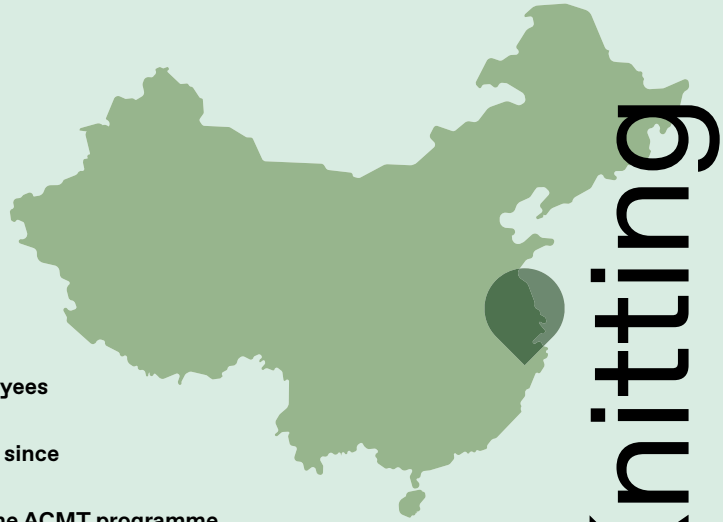
Pandora Sweaters Ltd.

Pandora Sweaters produces various types of jumpers from pre-made fabrics. The factory does not do its own dyeing, so any chemicals it uses are primarily in the washing of finished products. The amount of chemical substances is therefore generally small. During the first factory visit it was apparent that little knowledge existed at Pandora Jumpers regarding the management of chemicals. For example, there was no staff member who was specifically responsible for the issue, and the handling of the different substances was often disorganised, such as out-of-date chemicals being used because no expiry date was available. A positive aspect was the factory's well-functioning waste water treatment plant even prior to ACMT.

When comparing assessment sheets within the ACMT programme, only minor progress seems to have been made. However, the training has enabled the factory to improve its washing formula so that less detergent is now being used per litre of water. Chemical waste storage is now also being carried out more professionally than before.



“ACMT is the first programme on chemicals that we have participated in. It has been very helpful to us because previous organisation in this area was poor. We have now been able to train our staff to handle chemicals and understand the pictograms. We will keep training our workers in the future, and closely monitor their health”

Rajib Banik, assistant materials manager




Location
Shaoxing, China
Founded
2007
Factory type
Dyeing and knitting

Number of employees
580
Supplying Tchibo since
2017
Participation in the ACMT programme
2018–2019

The Shaoxing Guozhou factory focuses on dyeing and knitting fabrics rather than producing finished products for consumers. Around 1,500 people are employed in the dye works. The factory is certified according to various ISO standards as well as the **OEKO-Tex 100**  and **GOTS**  standards. Standards for managing chemicals were correspondingly high even prior to ACMT. Nevertheless, the first factory visit revealed, among other things, that only 35% of all chemicals used were listed in inventories. By the time the ACMT programme was completed, 70% of chemicals were listed. One problem area is that some of the agents used, e.g., for bleaching, are produced from raw chemicals by Shaoxing Guozhou itself. Improvements are still needed here in the recording and tracking of chemicals. Under ACMT, the factory has reduced its fresh water and energy consumption per unit of production.

“The ACMT trainers were very knowledgeable and supportive, which helped a lot. We have benefited from participating in the programme because other brands also have similar requirements, which we are now additionally able to meet. But it would be even more helpful for us to have similar programmes that are shorter and more frequent, because regulations and standards are constantly changing”

Miao Miao Wang, head of the chemicals department

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Shaoxing Guozhou Knitting

ACMT PROGRAMME

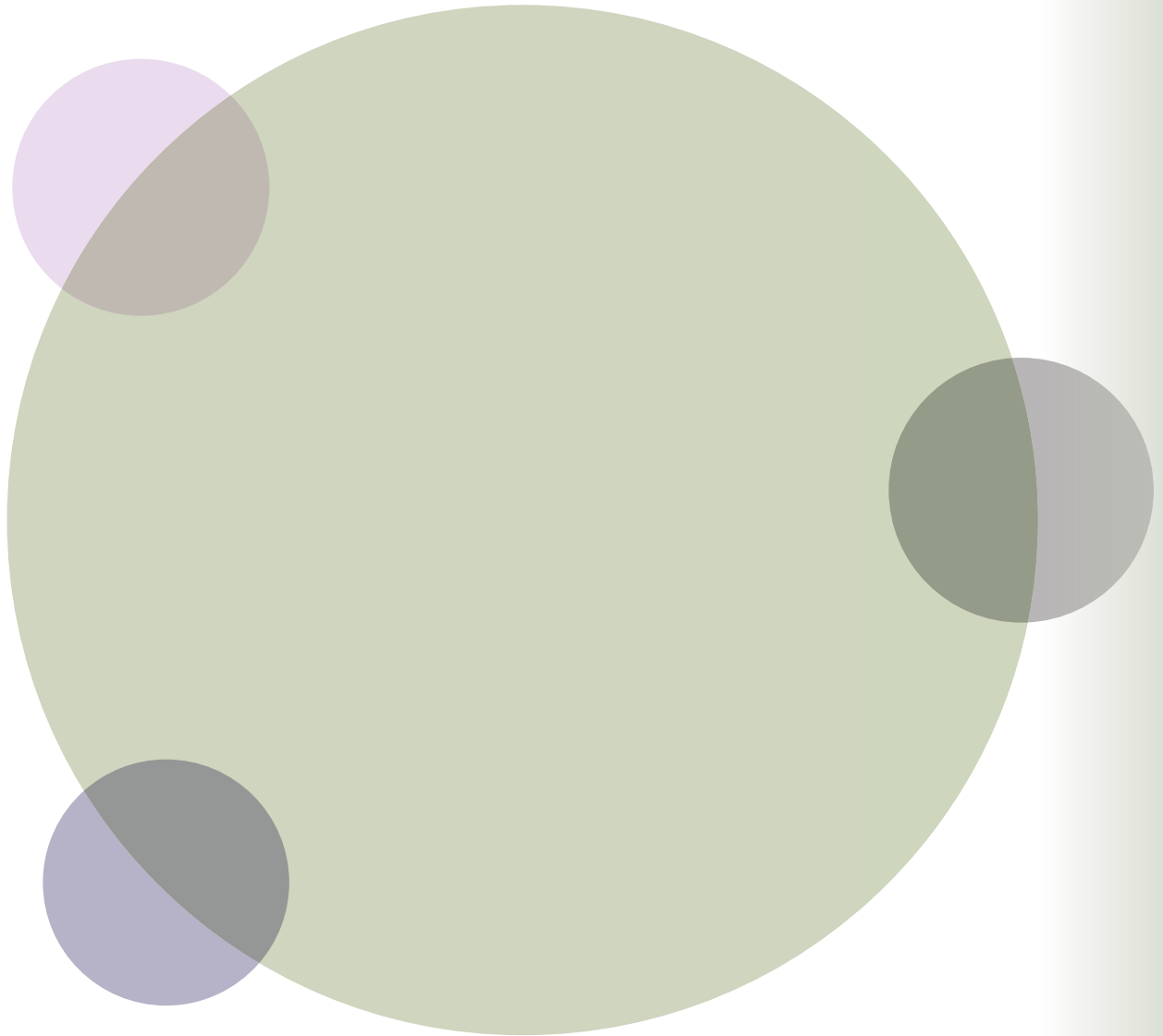




Water treatment plant in a factory
(Tchibo supplier) in China

The ACMT learning journey

ACMT PROGRAMME



In a roundtable interview, Daniel Koltermann (Tchibo), Christine Alfken (REWE Group) and Johannes Förster (GIZ) talk about how the strategic partnership for the ACMT programme came about, how they rate project progress and outcomes, and what lessons they have learned for future projects.

Greenpeace's Detox campaign in 2011 publicly highlighted chemical use in the garment industry that is harmful to people and the environment, and called on garment companies to improve transparency and responsibility for their supply chains. Why did it take such a campaign for the problem to be identified and addressed?

KOLTERMANN: It often happens that critical actors are needed to point out deficiencies such as these. A watchful civil society is therefore important for businesses – sometimes companies need feedback from the outside.

ALFKEN: Our stakeholder relations work had already revealed problems with chemicals management in supply chains even prior to the Greenpeace campaign. The Detox Commitment by brand manufacturers achieved by Greenpeace quickly gave the issue momentum.


FÖRSTER: Greenpeace went about it smartly back then. The public's focus had been more about product safety. Greenpeace bridged the gap to toxic chemicals in waste water. From my point of view, this was a new kind of campaign. Shirts are closer to consumers than waste water in a factory in China, so Greenpeace cleverly used concerns about potential hazardous chemicals in clothes to launch a campaign on supply chain responsibility.

Don't chemical safety and product management issues go hand in hand?

KOLTERMANN: Even before the Greenpeace campaign, our garments were safe to wear. The vast majority of chemicals used in production are washed out before the products go on sale. But of course it's best to keep harmful substances out of the manufacturing process altogether. Then they don't get anywhere they don't belong. Using fewer or no hazardous chemicals means less effort later on in testing products and effluents and keeping them free of pollutants. This is taking a more holistic perspective.

You then decided to take on the challenge together. Why in this particular constellation?

ALFKEN: It was obvious to us that if we wanted to improve how producers manage their chemicals we had to get active locally, providing advice and training people. At the time we were already in dis-

cussions with Tchibo on sustainability issues. And it was known that Tchibo had very good training experience in the social sector with the **WE Program** .

KOLTERMANN: At the same time, we had approached GIZ with an idea for a training programme on managing chemicals. They informed us that others in the industry were also thinking along the same lines. So it made sense to initiate a joint project. It was the perfect opportunity to pool our resources.

Why was GIZ interested in supporting the project?

FÖRSTER: We had already completed several chemical projects beforehand and had the training materials. We didn't go in as a service provider, but as a project partner and brought in the appropriate funding. We wanted to share, via train-the-trainer in the ACMT programme, existing knowledge that we had accumulated over the years. We also wanted to make sure that other actors, whether from the coaching, political or academic fields, were added to scale the project and generate added value beyond factories supplying Tchibo and REWE.

Ms Alfken, how would you describe the REWE Group's role?

ALFKEN: It was important for us to provide local training to the workers in the factories in our supply chains. Only then can such a project achieve long-term improvements. Our task was initially to select suppliers for the programme and explain to them why the measures were important. For most of them the topic was not yet familiar.

And Tchibo?

KOLTERMANN: We had the same goals as REWE and worked together to achieve them. Our focus was also on training in supply chains. And we all wanted to contribute to industry structures together.

Were there any role models for this kind of cooperation?

KOLTERMANN: Before coming to chemicals management I had already worked on Tchibo's WE Program for several years. The train-the-trainer approach was therefore something I had already learned and practised and was able to bring to the project.



Daniel Koltermann

works as sustainability manager in corporate responsibility at Tchibo GmbH. He was DETOX project manager for Tchibo, responsible for developing and implementing the ACMT programme. His personal highlight in the project was a trip to China, where he was able to take part in a training session with trainers: "Getting into contact with local people and seeing the skills they bring to the table – those were really fascinating times".



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Christine Alfken

is a project manager in sustainability merchandising at the REWE Group. She was DETOX project manager at REWE, responsible for implementing the ACMT programme. Her personal highlight during the project was the moment when the pilot phase evaluation was published: "It was the first time we could see in black and white that with ACMT we could really improve things. I then had the feeling, yes, we're on the right track".

Why did you opt for the train-the-trainer approach?

ALFKEN: It was something new in producing countries. Any kind of advisory network was therefore not yet in place GIZ's main goal was then to establish local training staff capacities, and it provided large volumes of funding for this purpose. Significantly more resources have flowed into the project than initially planned. This was mainly because we could not just stop at our immediate suppliers. We had to go deeper than initially planned and also provide close support to second-tier operations in the supply chain, i.e., the suppliers of the suppliers.

How was the search for potential trainers in the production countries?

ALFKEN: More difficult than expected. I thought trainers independently going to factories in an advisory role would happen more quickly than it did. It is simply a very complex task that you have to get to grips with, even when everything else is ideal.

KOLTERMANN: Expertise and experience of the garment industry needs to be combined with good trainer skills. It's not easy to find people like that.

FÖRSTER: We needed trainers with good standing. Imagine the situation: someone from outside comes into a well-run and well-established industrial operation and wants to change the way chemicals are being handled, entailing extra costs and re-learning of processes. And we are not talking about small operations here, but of huge factories with large, complex technical operations backed up by years and decades of experience. For a factory to change its core processes and implement proposals requires mutual trust, especially when trainers are not liable for any changes made.

How have the factories responded?

ALFKEN: At first they just listened intently to what we were saying. There then gradually emerged an openness, as well as an awareness of the need to address the issue if a factory wanted to produce in a sustainable way. This was generally not the case prior to the project. Factories first had to establish the know-how and the internal structures. Up to now they had been more used to making minor adjustments at minimal cost. It was therefore a major step to implement changes, i.e., being willing to replace

problematic chemicals with more environmentally friendly ones.

KOLTERMANN: The ACMT programme meant we were going deeper into the supply chain for the first time. We were suddenly dealing with suppliers and production facilities who were not our immediate contractual partners. It was difficult to win them over. Then there were the suppliers with whom we had long-standing contractual relationships and who also had dyeing processes on their premises. The conditions for us with these factories were of course very different, as was their willingness to cooperate when compared to dyeing factories that were located deeper in the supply chain and who had minimal turnover with us. I remember visits to factories, for example, in China, where Tchibo was completely unknown. We also had situations where no one in the whole company could speak English, so communication alone was initially very difficult.

Around 90 factories worldwide have undergone the programme. What do you think of the outcomes?

KOLTERMANN: We have achieved a lot in the factories. Evaluations show that, with few exceptions, participating businesses have significantly improved their performance in many critical areas. Factories now have a much better overview of their chemicals inventories, what is used where, where it is stored and how it is disposed of. Waste water treatment has improved and is better managed and documented via testing. Flammable chemicals are being stored properly, fewer accidents are happening, and there are fewer chemical spills. Personnel responsible for chemicals are more competent and knowledgeable about which chemicals are toxic, which should not be used and which can be replaced. Water consumption has also decreased.

FÖRSTER: Another success is our contribution to raising awareness across the garment industry on how to manage chemicals in a way that protects people and the environment. Many of the trainers we have trained are also active in factories beyond those within the project. Their expertise is in great demand.

KOLTERMANN: I want to add that we have succeeded in winning over two more committed companies to the programme – Aldi and Otto. Despite this we still haven't achieved the goal of attracting a criti-

cal mass of other companies to ensure the ACMT programme becomes a structure that can endure. Unfortunately, due to a lack of demand and interest from other brands, the anticipated scaling effects have not materialised. Bringing more factories into the project could not be sustained due to basic costs and management effort.

Why do you think more project partners could not be won over?

ALFKEN: For various reasons. Perhaps the programme should have been opened up earlier. Some have certainly been deterred by the high costs.

KOLTERMANN: Sometimes it's just been a question of timing. When we started, no alternative existed to this programme. Later, when we wanted to expand, other companies had established their own alternatives. The attempt to mobilise more partners through the Textile Partnership (p. 16) was unfortunately not as successful as we had hoped.

FÖRSTER: When we started, waste water and chemicals were the main issues. Climate and plastics have also since been added as major areas of concern. This has limited the resources that companies can invest.

What are the main lessons learned from the programme? What would you do differently today?

KOLTERMANN: In hindsight we probably should have thought about the final ACMT programme structure earlier and considered the kind of organiser that could keep the programme going over the long term from the outset. Someone who then also takes responsibility for further development. Conditions are changing, technology is progressing, training materials require updating, acquisitions are needed, stakeholder work is required, and the programme needs to be marketed.

ALFKEN: Today I would probably start with more project partners straight away. This might have slowed things down at the beginning, but then you immediately have more on board wanting the programme.

FÖRSTER: I see things differently. I think we put in a lot of networking effort from the beginning through the ZDHC (p.17) and local business associations, and additional effort to find an anchoring structure through the Textile Partnership (p. 16). If we had

waited any longer the project might not have started at all. The key findings I have taken away are more to do with the how. We have all seen the added value gained from closely engaging with the factories. But this has also been associated with major investment. We are currently evaluating a new approach that combines online training and a digital database with one-on-one interventions. Initial experience indicates that this will give us a wider range of participating factories. For this new approach we are using training materials from the ACMT programme, which are now available in digital format. The ACMT approach was good at getting an initial overview of what is happening in the factories. But it was too broad and too intense to be anything permanent. For many companies it was too costly. I am still amazed at how much REWE and Tchibo were willing to invest in the project. The garment industry will continue to benefit from this in the future, and we have created a good basis for achieving even more together in the future. ●



Johannes Förster

is project manager in private sector cooperation at the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). He implemented the project on the GIZ side as part of the develoPPP programme. The develoPPP programme is used by the German Federal Ministry for Economic Cooperation and Development (BMZ) to promote sustainable initiatives in developing and emerging countries. His project highlight was a factory visit that needed to take place digitally due to the corona pandemic: "Plenty of effort and technical input by the supplier, in collaboration with a local university, made the visit possible. It wasn't planned that way, but everyone involved still talks about it enthusiastically today".









What




the future

needs

The ACMT programme has ended, but our commitment continues: our plans for the future in chemicals management.

At the heart of our Detox efforts is a commitment to understand and track the use of hazardous chemicals in the garment supply chain to ensure they are managed in the most environmentally and health friendly way – ideally being replaced with less harmful alternatives. Our work here has already achieved much: in 2022, 94% of all textiles produced for Tchibo came from a Detox-qualified factory, i.e., a factory that had participated in at least one industry-based chemical training course within the past three years.

The ACMT programme was key to this success. Although we are not continuing with the programme, much of what we have worked on remains and helps to bring about lasting change in the garment industry. This applies to the ACMT trainers, who continue to be in great demand, as well as to the trained chemical managers in the factories who are passing on their acquired know-how to their colleagues. Last but not least we have gained a lot of valuable experience for future projects (read more about this and the reasons why the ACMT programme will not be continued on pp. 36–37).

Meanwhile, industry-wide partnerships, standards and training programmes have been established and we continue to work with them to ensure future progress in chemicals management, which is then protecting the environment and people in even more sustainable ways. This is important because, for all the successes, much remains to be done. Of the 348 wet-processing factories that Tchibo worked with in 2021, 68% carried out waste water analyses to provide transparency on their use of hazardous or banned chemicals. 53% have created inventories on the chemicals they are using. A quarter have had their chemical lists checked for ZDHC **MRSL**  compliance.

Read more on the following pages about how we are addressing the task of closing any remaining gaps and working towards the goal of meeting the highest industry-wide, chemicals management standards in producing countries.



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Strong start, strong future

The ACMT programme marks the closing of an important chapter in Tchibo's Detox work, with the commitment to this issue continuing in other ways. What has the company learned from the programme? An overview from Michelle Herfeldt, sustainability manager at Tchibo.



Michelle Herfeldt

In 2022 the last participating factories in Bangladesh, China, Turkey and Pakistan completed the ACMT programme. For many years ACMT has been a key pillar of our Detox Commitment. It has been an especially heartfelt project because we invested lots of time, money and passion in it. And although we have now reached a point where ACMT cannot be continued in any meaningful way, we are proud of what we have achieved.


We are proud that Tchibo alone saw 59 factories successfully participate in the programme. An average 60% of our textile products come from these factories. Chemicals management in the participating factories has improved in all critical areas, on average by 23%. This confirms that we have been, and remain, on the right path.

We are proud of the successful cooperation with REWE and GIZ, and pleased with the partners we were able to win over in the course of the project

– Aldi, Otto and Hako. It is also a pity that we did not succeed in inspiring more partners to join ACMT because this was ultimately why the programme was discontinued.


For the programme to be viable, as many factories as possible needed to benefit from it. This then meant more partners coming on board – Tchibo had already exhausted the number of supplier factories that could reasonably be included in the ACMT programme. Furthermore, continued programme success required fully updating the initial training materials.

For these reasons we decided to end the ACMT programme. But this in no way means the end of Tchibo's Detox Commitment. On launching ACMT, nothing like it existed within the industry. This situation has since changed. New initiatives similar to ACMT have been launched in recent years, some of which have become recognised standards in the industry. That these new programmes exist

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is also in some way a success of ACMT, leading the way as a pioneer.

Taking new paths

The Greenpeace **Detox Commitment**  ended in 2020, but our commitment continues. Awareness of the Detox issue was first raised in the factories through many years of work by different stakeholder groups. Nobody now questions that responsible chemicals management is important and needs addressing. Brand companies first came together to standardise requirements for factories, and then to spread the financial burden over a number of shoulders.

Tchibo also supports this approach. Since 2018 we have been a member of the Zero Discharge of Hazardous Chemicals initiative, abbreviated: ZDHC. Via this membership, we are continuing to develop our supplier programme in chemicals and waste water management. ZDHC provides us with various standards and guidelines as well as digital solutions, which we can use to conduct risk management and provide further training in factories. We are also in regular contact with the large network of industry-relevant ZDHC member businesses, where we discuss ongoing developments around chemicals management.

Finding all-round solutions

We have also launched a pilot phase as part of the **Clean by Design programme** . This is run by the Apparel Impact Institute and takes a similar approach to ACMT. In 13-month training sessions, factories are trained to use fewer chemicals and replace hazardous chemicals as part of Clean by Design. The financial and organisational effort for us is reduced because the programme is hosted by a service provider and used by various brand companies. We can also be sure that training materials are always up to date. We piloted Clean by Design in one

of our supplier factories in China. Results so far suggest that we will be expanding the programme to more factories.

We also want to address issues that are also closely related to chemicals management. For example, how water and energy are being used in factories. We are also forming strategic partnerships in these areas, because we firmly believe that we can achieve better results with industry-wide initiatives than by going it alone.

We are proud of all we have achieved so far in Detox, especially through the ACMT programme. But we still have a long way to go. A complete ban on chemicals in the garment industry is impossible and cannot be the goal. It still remains important to us, however, to continue to raise awareness along supply chains about safe chemicals management and to gradually eliminate hazardous and environmentally harmful chemicals. We therefore need greener, more environmentally friendly chemicals and good databases where factories can find out what alternatives are available to chemicals classified as hazardous. A key issue here is transparency. We want to promote the use of these more environmentally friendly chemicals in our supply chain. At the same time we never lose sight of the big picture, because more sustainable chemicals often also mean lower water consumption: Other sustainability issues such as the circular economy also play a

role in reducing resource consumption. Our Detox Commitment will therefore continue to be central to Tchibo's sustainability efforts.

“The DETOX Commitment will continue to be central to our sustainability efforts”





Colourful fabrics hanging to dry on the premises of a dyeing factory in Dhaka, Bangladesh (not a Tchibo supplier).

Lessons learned

Development and implementation of ACMT involved many people internationally. How do they view the programme in hindsight, and what lessons have they learned?

Michelle Herfeldt, Tchibo
Sustainability manager, responsible for Detox:

“We took a major step forward with ACMT. What we learned from the programme has paved the way for our continued commitment to Detox. The industry has evolved a lot since ACMT started, so we can continue our journey with new partners and apply our knowledge to new contexts”.

Christine Alfken, sustainability manager at REWE, and responsible for the programme at the beginning of ACMT:

“I was very surprised by how difficult it was to find suitable trainers locally and also how long it took for trainers to get to grips with their tasks. This clearly demonstrated how complex chemicals management is and that soft skills should not be underestimated”.

“We took a strong step forward with ACMT. What we learned from the programme has paved the way for our continued commitment to Detox”

Sohel Rana*, master trainer, selected and trained for ACMT in Bangladesh in 2018.

“There will always be room for improvement, but overall ACMT was a good programme. But it clearly demonstrated that big processes need time in this industry. No one programme can solve everything overnight. For factories it’s important that everyone pulls together”.

* Name changed

Tamara Wulf, project manager at service providers MADE BY and subsequently at STS:

“I learned a lot from ACMT, which is now also being applied in other programmes. For example, the importance of not only technical but also soft skills training for experts. Understanding change management processes is crucial to bringing about change at the factory level. I was particularly impressed by the partnership between REWE and Tchibo. Such a close form of collaborative action is very rare, especially in Germany”.

Sirajul Islam, chemicals manager at Shasha Denim, Bangladesh

“ACMT helped give us confidence. We improved some things, for example, how we manage chemical waste, and we introduced regular meetings at the highest management level to discuss what else can be improved. There is no limit to how far we can go. As soon as we have resolved one issue, another generally appears”.

Daniel Koltermann, Tchibo Sustainability manager and responsible for the programme at the beginning of ACMT:

“In hindsight, we probably should have thought more about the final programme structure from the beginning. To successfully continue a programme as intensive as ACMT over the long term requires a project organisation capable of taking responsibility for it. This also applies to the ongoing updating of materials and content. We achieved a lot with ACMT, but because we lacked that final structure, we couldn't scale up the programme”.

Linwei He, assistant manager at Shaoxing Guazhou, China

“We have benefited from participating in ACMT because many other brands that buy from us have similar requirements. Thanks to ACMT, our factory standards have improved. It's then easier for us to gain the required certification. That's good for business”.

Johannes Förster, project manager at GIZ and responsible for the programme at the beginning of ACMT:

“Even though ACMT has come to an end, we have created something that will endure. The trainers we have trained continue to be active in the field. The topic is undergoing further development in factories, as well as in brand companies. GIZ is now offering ACMT training materials digitally, and they are in great demand. We've therefore created something that other people can continue to work with, so from my point of view we've achieved our goal”.

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Key chemicals management terms in the garment industry

Clean by Design: An initiative for sustainable fashion by the US environmental organisation “Natural Resources Defense Council” (NRDC). The initiative aims to use the purchasing power of international brands to reduce environmental damage caused by suppliers in producing countries.

CMR: CMR substances are chemicals that are carcinogenic (C), mutagenic (M) or have reproductive toxicity (R). Textiles that exceed the limits set in the EU Chemicals Regulation 2018/1513 may not be marketed in Europe.

Dye liquors: Liquors are generally water-based liquids in which textiles are washed, bleached, dyed and impregnated. A dye liquor contains colours and additives that are necessary for dyeing textiles.

DETOX: Launched in 2011 by Greenpeace, the Detox My Fashion campaign called on the fashion and clothing industry to stop polluting the environment with chemicals that are toxic and improperly disposed of. Consequently, many international brands have committed to work towards ensuring that no hazardous chemicals are released into the environment during the production of their products.

GOTS: The “Global Organic Textile Standard” is a worldwide standard for processing textiles made from organically produced natural fibres. This makes it an important textile standard. It specifies environmental and social criteria along the entire textile production chain. The standard was developed by four garment trade associations in Germany, Japan, Great Britain and the USA.

Higg index: A means of measuring the sustainability of companies, brands and products in the garment industry. The index was developed by the Sustainable Apparel Coalition (SAC).

Mercerisation: finishing process for cotton named after its inventor Mercer. Mercerising is the process of subjecting cotton fibres to concentrated caustic soda under tensile stress. This gives the material higher stability, more gloss and improved dyeability.

MRSL: A “Manufacturing Restricted Substances List” lists chemicals that pose risks to humans and the environment. They are either banned altogether or only permitted to a limited extent in production. MRSLs have not been standardised. Different industries and sometimes individual companies use lists that may differ from each other.

OEKOTEX Standard 100: A system of criteria, methods and threshold values according to which the Oeko-Tex test institutes certify the health safety of textile products. It is a consortium currently comprising 18 testing and research institutes in Europe and Japan.

PBT: PBT substances are chemicals that are persistent (P), bioaccumulative (B) and toxic (T). This means that they degrade very poorly in the environment (= persistent), accumulate in organisms and thus in the food chain (= bioaccumulative) and are harmful (= toxic) to humans and organisms in the environment.

Sizing/Desizing: sizing is an impregnating substance that is applied to textile threads, for example, by spraying or immersion, prior to subsequent processing such as weaving. A sized yarn is more supple and resistant to mechanical stress. Fabrics treated with sizing usually undergo desizing (removal of sizing) after weaving, for example, by using acids.

STS: “Sustainable Textile Solutions” (STS) is a consultancy and certification service provider specialising in sustainable textiles. STS specialists also provide training. STS is part of the globally operating environmental service provider BluWin Ltd. headquartered in Huddersfield (Great Britain).

WE Program: Tchibo’s WE Program supports people in supply chain factories to recognise and stand up for their rights. It aims to improve the working conditions of these people for the long term. The WE Program is active in factories in Bangladesh, China, India, Cambodia, Myanmar, Pakistan, Turkey and Vietnam.

Sources

pp. 6–7: Good to Know

Greenpeace; Tchibo Detox Report; World Bank; sustainyourstyle.org; ecowatch.com; Textile dyeing industry – an environmental hazard (Natural Science 01/2012)

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