

Monitor Denim Deal

Results quantitative and qualitative monitoring 2021

September 2, 2022



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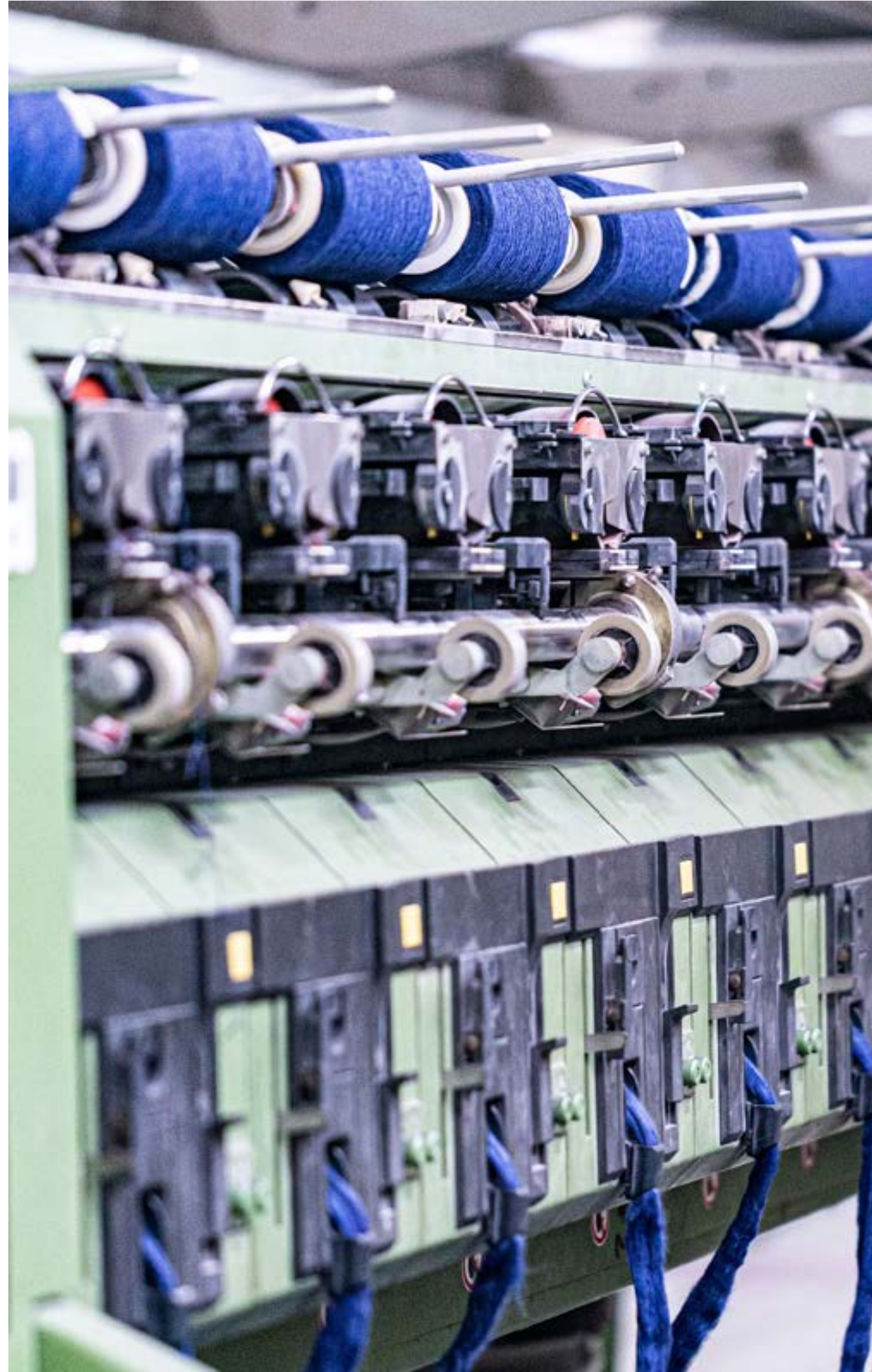


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Introduction






On October 29, 2020, 28 parties signed the Dutch C-233 Green Deal on Circular Denim ('Denim Deal'). Signatories in the value chain, from producers, brands, retailers to collectors, recyclers and public authorities, have jointly developed an approach to take major steps towards using recycled textile in all denim products marketed in the Netherlands. On January 1st, 2022 in total 39 signatories, including 8 brands and retailers, were committed to the Denim Deal.

The signatories of the Denim Deal aim to close the denim loop by promoting the use of high-grade post-consumer recycled cotton fibres ('PCR-cotton') in new jeans and other denim garments. They committed themselves to the joint ambition of working as quickly as possible towards a new industry standard of 5% PCR-cotton used in the production of all denim garments and will raise the bar in the future based on the learnings of the Denim Deal. They will monitor annually the activities they have undertaken to this end, the results achieved, and their effect and challenges towards achieving the goals of the Denim Deal.

This annual report gives a general summary of the results and challenges during 2021 based on the outcome of the **quantitative monitoring** of all 8 participating brands and retailers and the **qualitative monitoring** done by 90% response of all signatories of the Denim Deal. In this report they are referred to as 'participants' (of the monitoring).

Goals Denim Deal

All signatories of the Denim Deal undertake activities to achieve the following specific goals before the end of the Denim Deal in December 2023.

1	Brands and retailers will achieve a minimum of 5% PCR content in their own denim collections during this period by working together closely with other signatories.	
2	Brands and retailers will achieve their own, individual and higher goals for PCR content in denim garments, and will set out their ambitions and approach in individual roadmaps, based on the close collaboration with other signatories.	
3	Brands and retailers will commit to individual ambitions designed to achieve the specific, joint goal of using 20% PCR cotton fibres in 3 million pairs of jeans produced by these parties until the end of 2023.	

Definitions

The monitoring considers the following definitions:

Denim is a cotton twill fabric, traditionally made from 100% cotton, but recently alternative fibres are added such as hemp, linen and elastane. The product must contain at least 80% cotton. Denim is traditionally blue by using indigo dye to colour the yarn in one direction. In practice, denim can have different colours and does not necessarily have to be indigo blue.

Denim garments are outer clothing made of denim (e.g. pants, dresses, skirts, jackets, shorts, shirts), except accessories (caps, bags, etc.), which for the purposes of the Denim Deal does not include trimming.

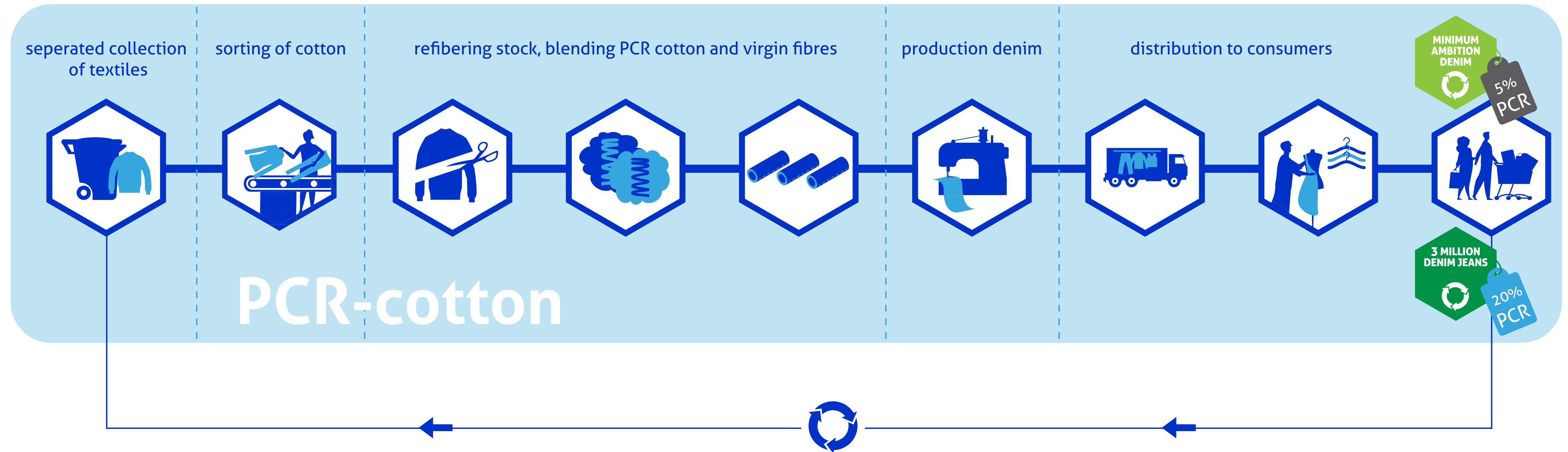
Jeans are hard-wearing trousers made of denim.

Post-consumer recycled cotton (PCR-cotton) is recycled cotton from textile products that have been used by the end user(s) for an indefinite period of time for the intended purpose and discarded and subsequently recycled, whereby the cotton fibres of at least 98% cotton are reused in new products.

The data is compiled by FFact. Annual monitoring reports are planned each year up to 2024. As a start a quantitative baseline report was made for the year 2020. The information in the report is anonymized and aggregated.

Road to goals denim garments and jeans

The figure below shows the supply chain of PCR cotton.



Approach monitoring

The quantitative data in this report apply to the input of all 8 participating brands and retailers and not to the total market. In order to collect quantitative data for 2021, the participating brands received a standard monitoring form which needs to be completed annually.

The aim of the qualitative monitoring is allowing the signatories of the Denim Deal to share experiences, to see which activities and efforts contribute to the Denim Deal, and which challenges they experience while working on achieving the goals.

The qualitative data is collected by questioning all signatories about the progress of efforts including the Metropolitan Region Amsterdam (MRA)/local authorities, brand owners and retailers, Ministry of Infrastructure and Water Management, textile waste collectors, sorters, cutters, cleaners, fiberizers (mechanical treatment or shredding), spinners, weavers, and all other participants like Modint and NEN. The response was approximately 90%.

All participants received the standard monitoring form to be completed annually. The form contains questions about their efforts and results

to achieve the goals of the Denim Deal in 2021, with a focus on opportunities and challenges. A separate form has been developed for each target group.

This report gives an overview of the answers given by the participants. Initiatives of specific organizations that provide additional insight into the overall progress are mentioned specifically.

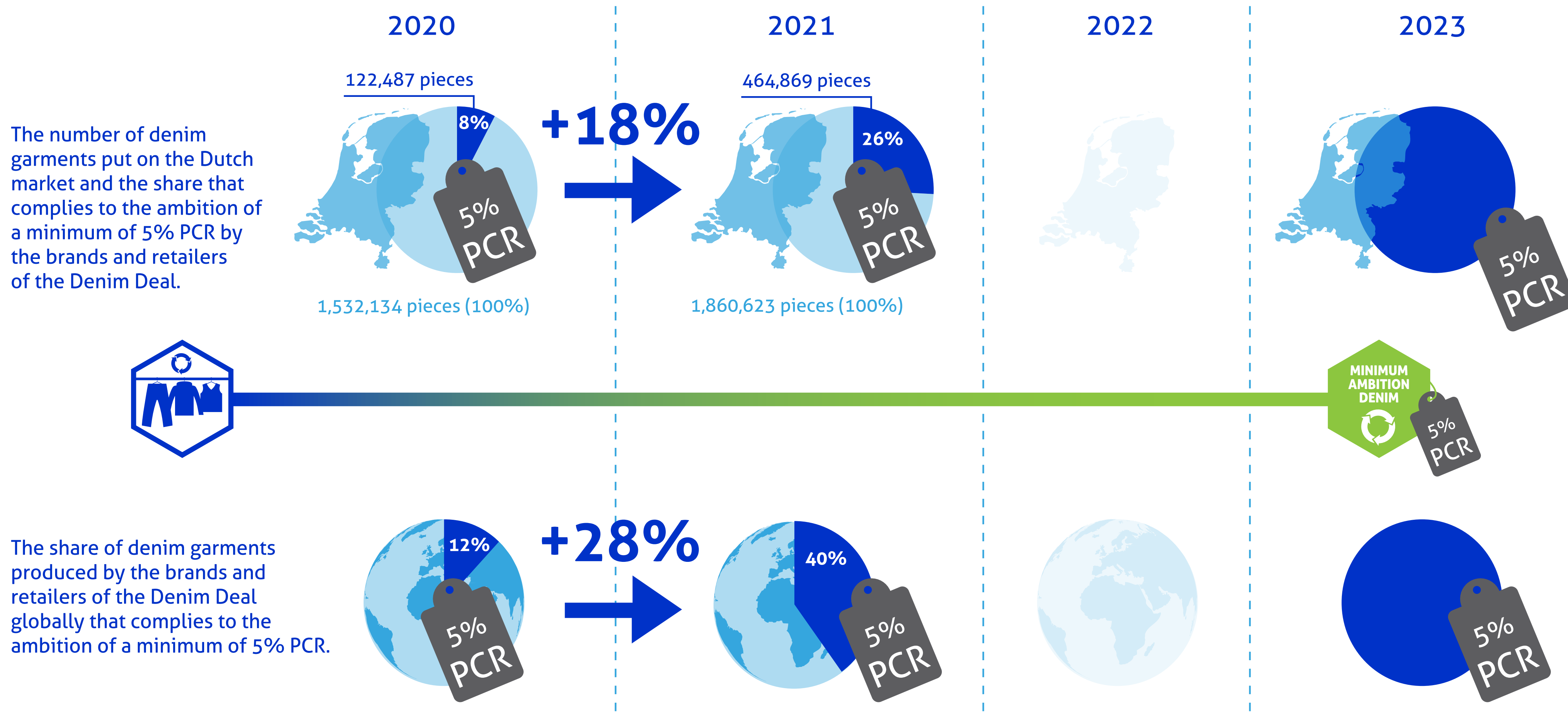




**Results quantitative
monitoring**

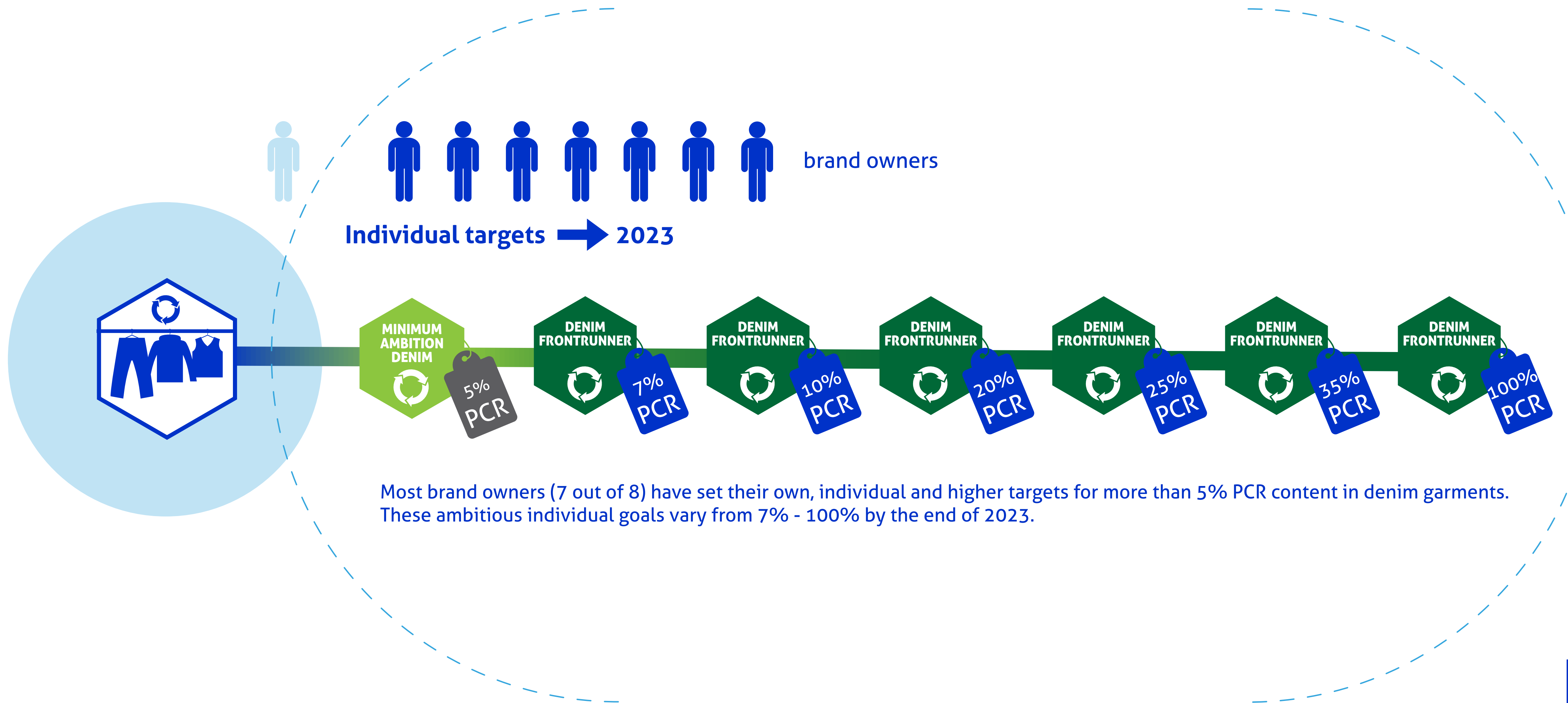
Results monitoring 2021 denim garments

The numbers below refer to the questions in the 2020 and 2021 monitoring forms. The figures refer to denim garments including jeans. The figures for 2022 and 2023 will be included in this figure in subsequent years.



Additional individual goals denim garments

Brands and retailers have reported their own, individual targets for PCR content in denim garments including jeans.

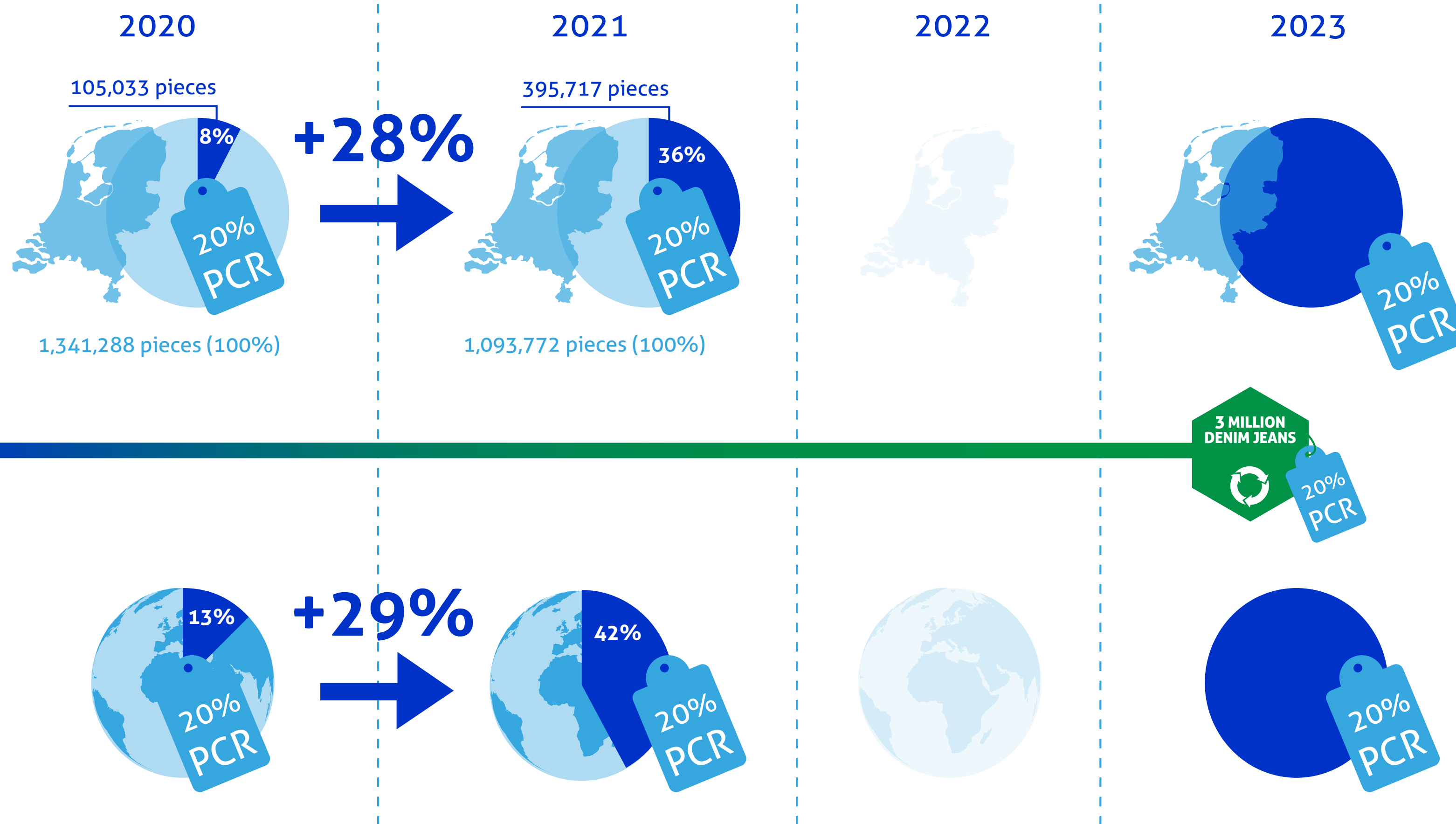


Most brand owners (7 out of 8) have set their own, individual and higher targets for more than 5% PCR content in denim garments. These ambitious individual goals vary from 7% - 100% by the end of 2023.

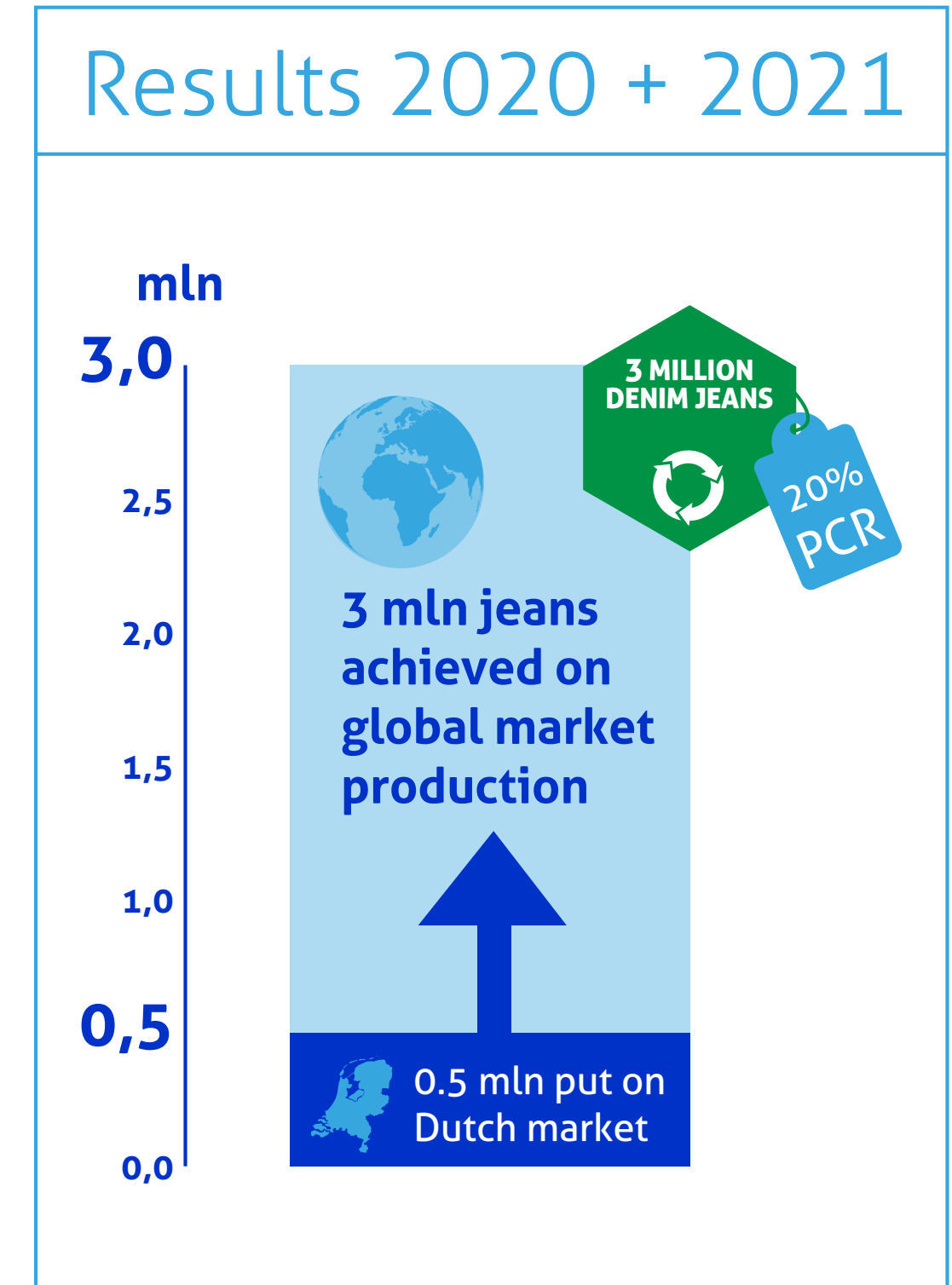
Results monitoring 2021 jeans

Following the results of the monitoring of 2021 the numbers below refer to the questions in the 2020 and 2021 monitoring forms. The figures for 2022 and 2023 will be included in this figure in subsequent years.

The participating brands and retailers have put in total 1.1 million jeans on the Dutch market in 2021.



The share of jeans produced globally by the participating brands and retailers of the Denim Deal that contain at least 20% PCR cotton.



More PCR-cotton in denim garments

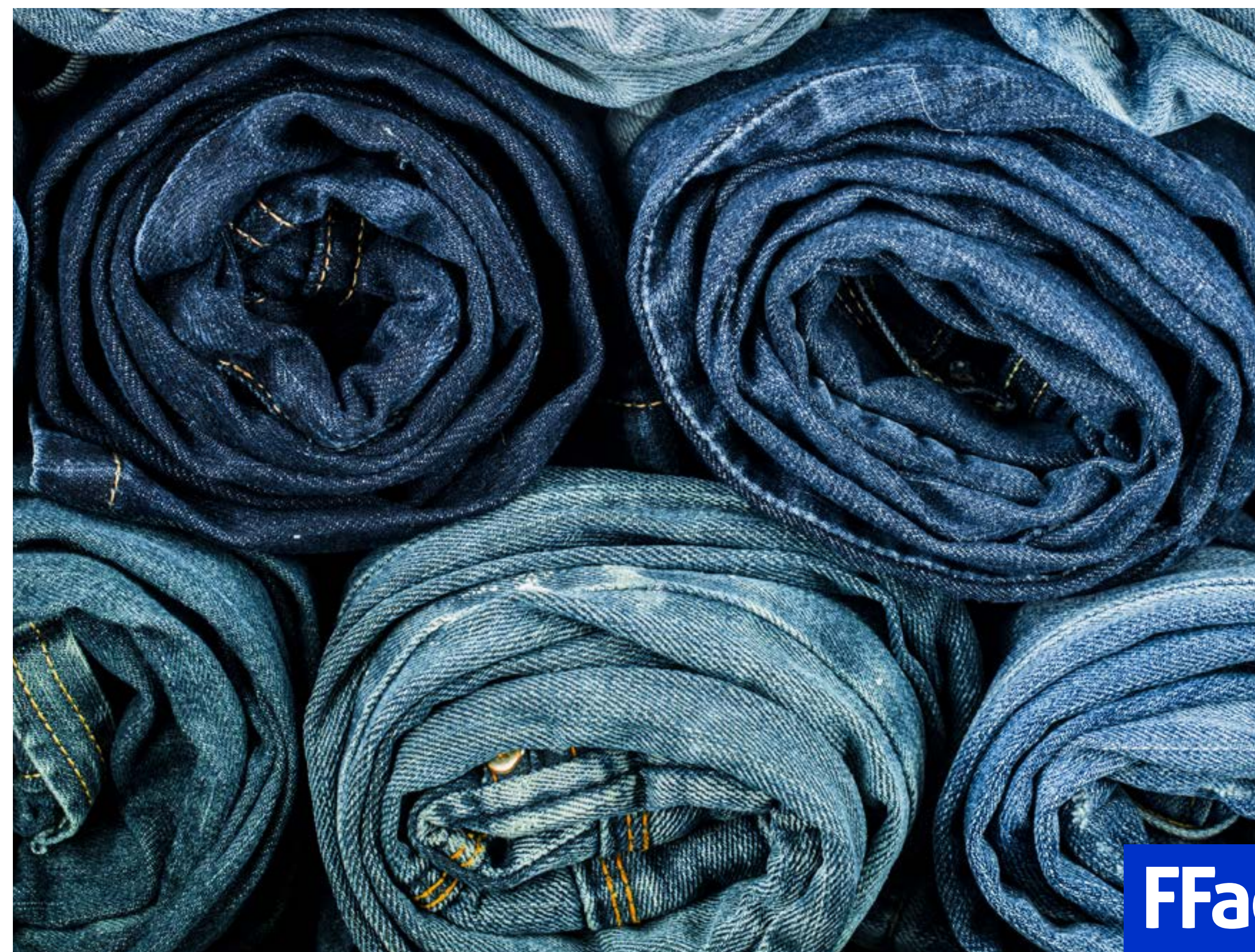
In 2022 eight brands and retailers participated in the 2021 quantitative measurement. Compared to the 2020 baseline report this is one extra brand. If new brands will join the Denim Deal in future they will also participate in the monitoring.

There is a **clear positive development** in the increase in application of PCR-cotton in denim garments and jeans. In general most participating brands and retailers are aiming for higher targets than the 5%-PCR-content in the coming years.

The results of the quantitative measurement show for 2021 that from the volume with at least 5% PCR-cotton put on the Dutch market by the 8 participants, has grown with 18%, from 8% in 2020 to 26% in 2021. And the volume of denim garments produced by the participants worldwide containing at least 5% PCR-cotton has increased with 28%, from 12% in 2020 to 40% in 2021.

Most participating brands and retailers **expect to achieve 5% PCR** in their own denim garments in 2023, by working closely with other signatories (one company expects to achieve this in 2022 already).

Most brands and retailers (7 of 8) have set their own, **more ambitious goals** for PCR content in denim garments than the aimed new industry standard of 5%. Their individual goals vary up from 7% up to 100% by the end of 2023.



Share of 20% PCR-cotton in jeans is growing



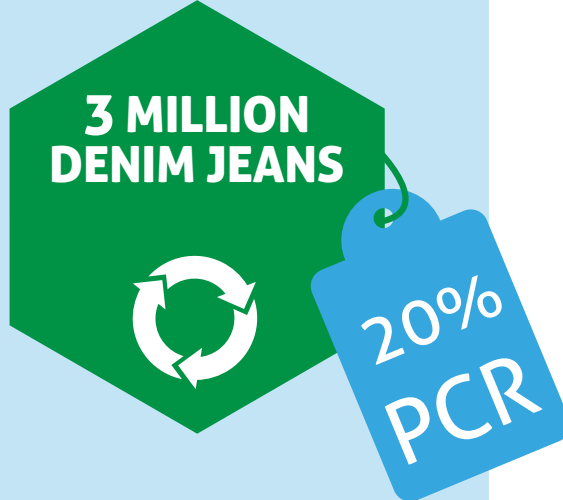
The participating brands and retailers have put in total 1.1 million jeans on the Dutch market in 2021. From the volume put on the Dutch market by participants 395,717 jeans (36%) contained at least 20% PCR-cotton. This is a relatively small part of the amount of jeans put on the Dutch market annually. However, the volume of **jeans with 20% PCR increased** from 8% in 2020 to 36% in 2021.

The results of the measurement show for 2021 that 42% of the volume of jeans produced worldwide by participants contains at least 20% PCR-cotton. This is a substantial growth compared to 2020. In 2020 13% of the volume produced by participants contained 20% PCR.

On the global market the number of 3 million 20% PCR jeans was already reached in 2021. However, it will be a challenge to reach 3 million 20% PCR jeans on the Dutch market only. To achieve such amount during 2021 - 2023 would imply that nearly all jeans of the participating brands should contain 20% PCR-cotton. With the current number of brands this target will not be reached. It will take more brands and retailers in the Netherlands to join the Denim Deal.



Summary per goal

1	<p>Brands and retailers will achieve a minimum of 5% PCR content in their own denim collections by working together closely with other signatories.</p> <p>In 2021 26% of all denim garments put on the Dutch market of the participating brands and retailers contained at least 5% PCR and 40% of denim garments produced globally contained 5% PCR. Most expect to achieve 5% PCR in denim garments in 2023.</p>	
2	<p>Brands and retailers will achieve their own, individual and higher goals for PCR content in denim garments, and will set out their ambitions and approach in individual roadmaps, based on the close collaboration with other signatories.</p> <p>Most brands and retailers even aim for a higher percentage of PCR in denim garments.</p>	
3	<p>Brands and retailers will commit to individual ambitions designed to achieve the specific, joint goal of using 20% PCR cotton fibres in 3 million pairs of jeans produced by these parties until the end of 2023.</p> <p>On the global market the target of 3 million 20% PCR jeans was already achieved in 2021. However, it will be a challenge to reach 3 million 20% PCR jeans on the Dutch market only. This target will take more brands and retailers in the Netherlands to join the Denim Deal.</p>	

A close-up photograph of denim fabric, showing the intricate texture of the blue and white threads. The fabric is slightly out of focus, with the central area being sharper. A white hexagonal shape with a blue border is overlaid on the center of the image, containing text.

Results qualitative monitoring

Developments and challenges,
a qualitative picture
behind the figures

Denim Deal connects participants

The qualitative monitoring shows that participants at various stages in the supply chain share knowledge and discuss dilemmas. From the perspective of collectors, cooperation with municipalities could be improved. Collectors started a **dialogue** with **municipalities** about communication needed to **citizens** about contamination and fast fashion. According to collectors, municipalities have more options than are currently being used to communicate with citizens in order to stimulate and improve separation of textiles.

And some collectors indicate that there are sufficient sales opportunities regarding the used textiles, but still below the real price. On the other hand others actively **seek dialogue** to create **more sales** opportunities with fiberizers.

The qualitative monitoring shows that **brands** actively **seek dialogue with designers** to apply circular design in products. How can we alter the design so that PCR- cotton can be more applied?

Fiberizers and spinners indicate that they actively seek **contact with buyers of PCR-cotton**, including weavers, manufacturers, brands and

retailers. This concerns how fabrics can be developed with recyclable content or how recyclable clothing can be designed.

According to manufacturers, it is a challenge to manage that circular design does not come at the expense of the desired quality. Issues are: heavy washing, fabric tear and decreased tensile strength. Sometimes the requirements from the brands are quite strict which leaves little room to convince them to start selling textiles with PCR-cotton. One of the issues also concerns how fabrics with PCR-cotton should be treated, for example by washing it correctly.

The discussions do not only take place between the signatories of the Denim Deal, but also with large **market parties outside the Denim Deal**. In some cases, these parties purchase already standard textiles with 5% or sometimes 15% PCR-cotton from the weavers in the Denim Deal.

A direct result of the Denim deal is the connection of institutes to discuss solutions for **export barriers**. For example, the consultation between the Dutch consulate-general in Istanbul, the Dutch embassy in Ankara and the trade association of Turkish textile exporters.

Industrial scale up is necessary

According to participants, there is a large **shortage of PCR-cotton** on the market. More feedstock of PCR-textiles is required and an industrial scale-up is needed to produce high quality PCR in sufficient volumes. In this context, price elasticity is mentioned as an issue. In order to realize a **high quality PCR-cotton**, participants outline that the following is **required**: a really good sorting process, automatic cutting and cleaning of textiles, efficient transport to the recycler and to the spinner and techniques to measure the fiber length, adequate blending and testing for strength. And, according to the participants, these steps determine at the same time the **integral cost price**.

Some participants indicate that the high cost of PCR is a barrier. The small scale of the production of PCR-cotton is probably the cause of the - sometimes mentioned - relatively high price. However, the **images differ about the price**, because other participants indicate that the price for PCR-cotton is not high compared to virgin cotton.

It is unambiguous that participants are more united in fact that the **costs** necessary to innovate and scale up the supply chain should be **shared**

equally among the chain partners. And at the same time they describe that upscaling by **more consumer demand**, will increase the supply of payable high-quality PCR and relative lower costs to be distributed among the chain.

In this context, participants mentioned that upscaling is a complex issue and requires thorough research throughout the supply chain. For example, **innovation is needed** in sorting processes that are often still done manually. And also with respect to the current small-scale recycling: research is needed for innovations in techniques and subsequently investments in innovative recycling technologies.

The question that participants ask is how upscaling can be achieved. Some outline that the **mapping of the reverse supply chain** must be done to identify today short and efficient routes from waste to the production of PCR-cotton. Many routes exist already and will evolve according to the technology evolution. In this context, according to them, it is important **to connect** actors across the value chain.

Need for more investment in high quality PCR-cotton

High quality PCR-cotton, according to the textile collectors, starts with the collection of high-quality textiles and a good sorting process. A **challenge** for collectors is the contamination of the collected textiles.

Automatic textile sorting is under development. Several techniques are being tested and participants indicate that they are improving the results. The automatic determination of the type of material in combination with the color is a **major challenge** according to some sorters. The development of an automatic 'cutting & cleaning' installation has already been tested in the market. The application is envisaged in the Metropolitan Region Amsterdam. It facilitates the defibering and spinning process towards a yarn with high quality.

Fiberizers, spinners, weavers and manufacturers indicate that they invest in the development of **knowledge and technical innovations** to optimize sorting, shredding and production of denim yarn with recycled content. R&D teams of different companies are updating knowledge in the field of sorting and recycling.

This knowledge is passed on to staff and partners. The participants also indicate that they invest in equipment to produce high-quality yarns with a higher percentage recycled textile and/or recycled plastic in a more efficient manner. The **public sharing of new knowledge** takes place. However, details are not always shared due to non disclosure-agreements.

According to fiberizers, spinners, weavers and manufacturers, producing **20% PCR-cotton is not really the problem**. Some weavers have woven 5% PCR into their fabrics and set a target of achieving 10% in all yarns. They work with brands (outside the Denim Deal) that purchase textiles with 15% PCR-cotton or even 20% PCR-cotton already. The challenge mentioned by some participants is that not all brands are willing to purchase textiles with PCR. They have to **meet the current requirements of their customers**. Textiles with higher recycled content cannot be manufactured like regular fabrics. Adjustments and innovation have to be applied in the production process of the clothing.

Research to define an effective quality standard is needed

The participants indicate that there is a need for a quality standard for denim with PCR-cotton that is effective and for transparency. **Current standards do not meet their expectations.** For example, participants indicate that textiles with PCR-cotton do not pass GOTS certification, the German standard for clothing.

According to the participants, an **effective standard ensures:**

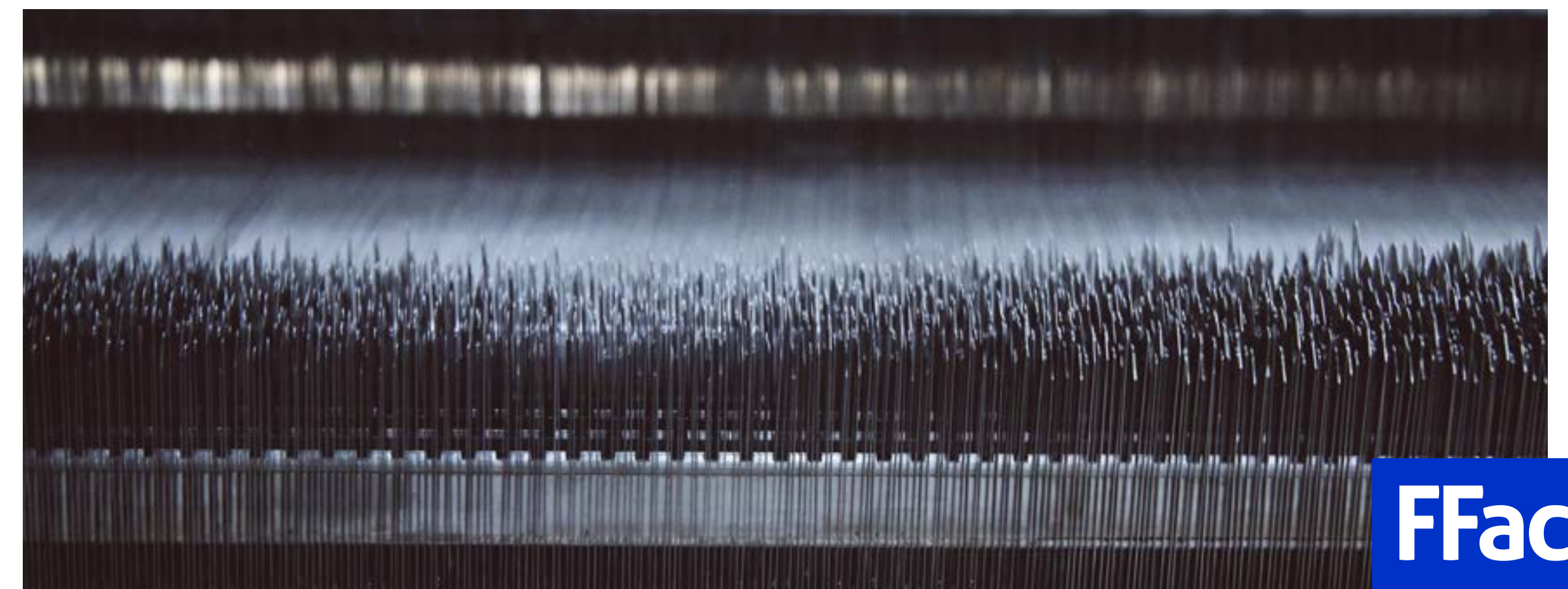
- that recycling is incorporated in the design so that clothes can be recycled more easily;
- a high quality feedstock from collection and sorting;
- the production of PCR-cotton with longer fibers;
- transparency about the composition and origin.

Participants describe that **further research** on an effective quality standard is needed to increase a high quality PCR-cotton.

Besides, in the Denim Deal, the Ministry of Infrastructure and Water Management agrees to act as a facilitator of agreements on the necessary standards and certification with regard to obtaining reliable evidence of the use of PCR cotton in new denim. Consultation is sought with the NEN for this.

The Ministry and NEN indicate that in 2020 the NEN has drafted a **new ‘Circular textile’ certification scheme** based on NTA (Dutch Technical Agreement) 8195. NEN has received funding in 2021 and 2022 to further develop this **into a European standard** (CEN/TC 248/WG 39). In this context, the Ministry and NEN participated in the Denim Deal work session on transparency in 2021.

A challenge that the NEN encounters in this regard is the complexity associated with the development of a fully circular product that is designed according to eco-design rules. In addition, requirements of the Chain of Custody (ISO 22095) will be adopted in the draft certification scheme.



Uncertainty about consumer willingness remains

In the qualitative monitoring, various signals were given about the willingness of consumers to buy denim with PCR-cotton. On the one hand, some participants indicate that there is insufficient knowledge whether consumers **are really interested in sustainable textiles** with PCR-cotton. On the other hand, participants indicate that retailers are setting sustainability targets and are pushing brands to be more sustainable. After Covid-19, some brands see an **increasing interest of customers** in sustainability, also with respect to clothing with PCR-cotton.

And at the same time, participants indicate that there is a **need** to act to **stimulate consumer demand** for circular denim and transparency about its production.

Based on the analysis of the outlines provided by the participants, it is clear that the **consumer** is an **important part of the dialogue**. Not only the transition to creating a consumer demand for denim with PCR-cotton, but also the low awareness among consumers that they can

contribute to the collection of high-quality textiles for the production of PCR-cotton is an important issue. Textile collectors in particular indicate that consumer knowledge about pollution and the purchase and disposal of fast fashion is limited.



Cooperation is created step by step

The Amsterdam municipality is among other things coordinating the Denim Deal. This role has been given to the project leader of Reflow.

Despite the fact that parties are learning to find each other, it has also become apparent that **taking up actions** and new chain cooperation does not happen automatically and that coordination is still necessary.

A number of participants indicate that they have made **new one-on-one contacts** within the Denim Deal. Existing collaborations from before the Deal will also be continued and some parties are taking an active role by proposing a pilot or putting topics on the agenda.

However, the majority of the parties take a rather **wait-and-see role**. They often come to the online and physical meetings organised by the coordinator, but this still leads to little actual action.

During the first year of the Denim Deal, it appears that reaching the 3 million pieces of denim on the Dutch market by 2023 does not seem feasible.

Joining the Denim Deal of other brands has therefore also become part of the coordination and is at the same time a task of Modint and House of Denim.



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