

VESTERGAARD is proud to announce the production of the ***industry-first*** bed net made from 100% recycled and upcycled polyester, demonstrating the feasibility of a more sustainable malaria prevention tool. Over 1 million tons of virgin polymer plastic in the form of bed nets are on track to be delivered in Sub-Saharan Africa over the next 10 years unless a more environmentally friendly alternative is found. We call upon the malaria community to work with manufacturing companies to find ways to introduce a circular economy and to help scale up environmentally friendly solutions like the recycling of old bed nets.

“The bed net industry and all its stakeholders have developed arguably one of the most successful tools to fight malaria ever invented. However, these bed nets also account for approximately 100,000 tonnes of polymer plastic that need to be discarded in an environmentally friendly manner or preferably recycled each year. Polyester-based bed nets are ideal for recycling, with almost zero material lost during the process. At Vestergaard, we are committed to finding solutions to reduce overall plastic waste. Whilst the manufacturing of recycled bed nets at any scale is a long way off, we call for a collaborative effort between technology players like Vestergaard, global funders and country national malaria program coordinators to find new and innovative solutions for this challenge”, says Michael Joos, CEO of Vestergaard.

# Mosquito Nets made from Mosquito Nets

Towards a circular economy  
in the LLIN industry

**PermaNet®**   
3.0 | by VESTERGAARD



## **Responsibility must go beyond the distribution of nets to save lives**

Bed nets remain the most effective tool to prevent malaria, but these lifesaving nets are composed predominantly of plastics. Every year, 200 million nets made of polymer plastics like polyester or polyethylene are distributed, enough to cover the surface of Manhattan 44 times<sup>[1]</sup>. The climate crisis and the UN Sustainable Development Goal (SDG) 12 (responsible consumption & production) urgently require a more comprehensive approach to protect fragile ecosystems, which will also ultimately protect vulnerable populations from the negative effects of climate change. Product design, responsible disposal and facilitating the recycling of bed nets lie within the responsibility of manufacturers.

In many malaria-endemic countries, adequate facilities to incinerate or dispose of old or used nets responsibly are limited. In the absence of such facilities, the WHO recommends that nets be buried in the land away from water sources and preferably in non-permeable soil. <sup>[2]</sup> Recipient countries and donors of bednets have taken measures to reduce the waste from individual packaging of bednets, such as opting for bulk packing for mass campaigns. But an eco-friendly way to dispose of old nets too torn to be used or recycled remains an issue. Even though bednets distributed in Africa constitute no more than 1-2% of total plastic consumption annually, this is waste that can and should be avoided.

## **Working towards a circular economy**

At Vestergaard, we feel a sense of responsibility to bring solutions to the environmental challenge created by our products. After 2 years of testing and research, we confirm that we have developed and validated the technology to enable the manufacturing of new bed nets out of old bed nets without compromising on quality. Changing the source of our raw materials will keep large volumes of PET waste out of landfills and oceans. In addition, manufacturing 1kg of PET can produce up to 3 kg of carbon dioxide, hence the use of recycled materials contributes to the reduction of carbon emissions and mitigation of climate change.

## Seizing the opportunity

The opportunity exists to close the loop and create a circular economy for bed nets. To fully seize it, however, will require partnerships and close collaborations with national environment authorities and national malaria programmes of recipient countries. This also would involve donor organisations financing bed nets and implementing partners in charge of bed net distributions to organise the supply chain systems and the appropriate framework to collect old nets. While manufacturers can do their share in driving innovation and technology to facilitate a more circular product life, the malaria community also has a shared responsibility.

---

[1] the Net Mapping project sponsored by AMP (The Alliance for Malaria Prevention) and funded by the United Nations Foundation (NothingButNets.net), [Net Mapping Project - The Alliance for Malaria Prevention](#)

[2] WHO recommendations on the sound management of old long-lasting insecticidal nets, March 2014, [WHO recommendations on the sound management of old long-lasting insecticidal nets - March 2014](#)