

## BARC CLOTH\_europe – success through saving resources

**Ecological, economical and socially sustainable - all apply to a company called BARK CLOTH\_europe, which in 2013 was one of 10 companies recognised as fabric innovators by the 'LAUNCH System Challenge: Fabric'. With its biomaterial made from the bark of the African Ficus tree, the company sells an innovative material that is produced using traditional methods.**



BARC CLOTH\_europe at the 'LAUNCH System Challenge: Fabric' 2013. © BARK CLOTH\_europe

Interiors and textiles made from tree bark? For many Europeans, that probably comes as a surprise. However in Africa, where the bark cloth comes from, it has been traditionally produced from the East African fig tree (*Ficus natalensis*) for a long time. The native word for the evergreen Ficus tree is mutuba. The fact that BARK CLOTH\_europe has been recognised as one of the 'LAUNCH System Challenge: Fabric' innovators shows that traditional bark cloth and the biomaterials produced from it can make an excellent contribution to the bioeconomy. BARK CLOTH\_europe's headquarters are in the south of Germany and in 2013, it was selected for its BARKTEX® biomaterial as one of ten innovators by LAUNCH, a programme set up by NASA, NIKE, the US Agency for International Development and the US State Department.

BARKTEX®, which can also be combined with polymers, has thus become one of the ten most innovative materials developed worldwide in 2013. According to the innovation platform

LAUNCH, which was established in 2010, the ten companies and innovations were selected for their potential to promote human prosperity, transfer entire industry sectors into sustainable systems, enable equitable economic growth around the world and contribute to the renewal of the Earth's resources.

## Sustainable value creation chain



Bark cloth left to dry in front of a fig and banana tree plantation. © BARK CLOTH\_europe

The award also honours the company's socially sustainable production structures. "BARK CLOTH\_europe invests and produces in countries and areas other companies are not interested in, i.e. regions with a lack of efficient infrastructures," says Oliver Heintz, who heads up the company together with his wife Mary Barongo. BARK CLOTH\_europe makes most of its products in villages and small towns in Uganda and maintains small production sites in remote regions of Honduras, Papua New Guinea and the Amazon basin in Brazil.

Bark cloth is produced in Uganda using traditional processes. The bark is stripped from trees and then treated manually. Mutuba trees are mainly grown on small-scale family farms which make use of the plant's other advantages. "Ficus natalensis strengthens the traditional agro-forestry land-use ecosystem and enables farmers to grow much larger amounts of food than if the tree was not there," says Oliver Heintz. In this ecosystem, the fig tree provides shade to other plants, and its leaves rapidly degrade and become a natural fertiliser. The tree's branched roots take up nutrients and water from deeper soil layers and transport them to the surface as well as protecting the soil from erosion. The farmers grow fig trees as well as plantains, coffee and vanilla plants. "The production of biomaterials and food therefore complement one another perfectly," says Heintz.

The bark cloth is refined in the company's own manufacturing facility which is no more than 100 km away from the small-scale farmers. "This enables the decentralised production and refinements of fibres," said Heintz. "We only hire women for the refinement of the fibres, because the money the women earn considerably empowers them in the local communities."

## Advantages over other materials







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The traditional production of bark cloth, and hence the production of the company's BARKTEX®, has an excellent carbon footprint, in fact it has a neutral CO<sub>2</sub> balance. Moreover, bark cloth is manufactured with low energy and water consumption. For example, bark cloth production requires much less water than cotton production. The trees grow extremely quickly and can easily be propagated with shoot cuttings. The first bark can be stripped from the mutaba trees after three years; the bark of the tree regenerates and can be harvested repeatedly over many years.

How does the material compare with materials that we traditionally use in our latitudes, such as leather, plastics and normal wood, for example? "We successfully produced a semi-finished natural fibre in a local workshop and transferred it into industry," says Oliver Heintz. The main markets for the product are interior decorations, furniture and lighting components, and the company produces wall paper, lampshades and decorative laminates for wall coverings. "BARK CLOTH sits in the medium to high price range and BARKTEX® is therefore predominantly used in hotels, restaurants and for shop fittings and fixtures," says Heintz. "BARKTEX® is very seldom used in the clothing sector, and if it is, it is mostly for small avant-garde fashion labels, because standard off-the-shelf clothes are mainly made of short-lived and cheap materials."

The company has recently joined an international and interdisciplinary knowledge consortium coordinated by BASF SE. "The consortium is specifically focused on research aimed at turning BARKTEX® into a robust, resource-saving and cheap alternative to leather. "We are also working with the Tübingen-based company CHT/BEZEMA which produces textile auxiliaries; we have the same goal as the BASF-led knowledge consortium, but are aiming to get there by using a completely different method," says the materials pioneer. He believes that they will be

able to sell smaller quantities of the leather substitute in about six months' time.

## Interdisciplinary thinking required



Furniture made from BARKTEX®. © BARK CLOTH\_europe

The material has some characteristics that are of particular interest for medical applications. According to local folklore, *Ficus natalensis* latex has an antiseptic effect. It is also known that up until the 1950s malaria was less common in the region than it is today. African scientists believe that this is due to people's habit of covering themselves with bark cloth when they slept. The bark contains tannins that are effective in fighting off malaria-transmitting mosquitoes. "However, we do not have the medical competence required to do any further research into this," says the company's managing director.

Heintz knows from personal experience that it is difficult to bring different sectors together. "BARKTEX® lies somewhere in between fleece and wood, and is not really a typical textile. We have met wood technologists as well as textile engineers who were unable to imagine what they could use the material for." Heintz also believes that many people lack the will to deal with traditional production processes. The company therefore has faced difficulties in establishing research collaborations in the fields of textile, wood and polymer research. However, the 'LAUNCH System Challenge: Fabric' distinction shows that the idea is worth pursuing. In addition to the advantages already mentioned, the sale of bark cloth is also a profitable business. Our approach makes economic sense. After all, our business is already in its 15th year," says Heintz.

### **Further information:**

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