

Teaching an Old Fiber New Tricks: DaimlerChrysler

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[DaimlerChrysler](#) is expanding its program to use an old-fashioned fiber in its cars, an effort that is saving money, transferring technology North-to-South, and decreasing environmental impacts. It is even opening new paths of economic development in the tropics.

The company is using sisal grown in South Africa in the rear shelves of its locally produced C-Class Mercedes, and plans to expand its usage to other parts of these cars and to other models.

The seven-year effort to use the fiber is based on the work of the German-based automakers Global Sustainability Network, which is dedicated to figuring out ways to use renewable raw materials and biofuels in automobile production.

DaimlerChrysler's Prof. Herbert Kohle said the technology transfer project in South Africa proves that profitability and environmental awareness in competitive markets are more compatible than skeptics believe.

The company reported that its progress has been hardwon: it was difficult to sign up agricultural partners; German car-makers and South African sisal farmers did not have a lot in common, and it took a long time to make the old sisal farms more commercial and efficient.

Sisal is an agave, the same plant family that provides tequila; is named for the Yucatan port of Sisal, and seems to have originated in Mexico. Today it is grown commercially mainly in Brazil, China, Tanzania, Kenya and South Africa.

In the days of sails, sisal fibers provided much of the world's rope and twine, and many of the vast sisal plantations of the tropics had their own private railroads to bring in the long, sword-shaped leaves for treatment in on-farm factories. Since artificial fibers took over from sisal and hemp, many of those farms have fallen into ruin.

DaimlerChrysler's efforts are part of a global re-examination of uses for natural fibers.

Sisal scores well in most sustainable development metrics. Components made of sisal fiber are easier to recycle and to dispose of than those made with the usual glass fibers. Interior components made from sisal tend to be strong, impact-resistant and splinter-proof. Sisal fibers are safer for workers to handle than glass fibers, which can cause skin rashes. It is cheaper and lighter than glass.

The automaker kicked off research into natural fibers in 1991, and by 1993 had achieved some success with flax, hemp, coconut, cotton and sisal.

DaimlerChrysler credits the German firm [Johann Borgers](#) for sharing the fiber technology with [Brits Textiles](#), one of the three South African organizations in the program. Borgers and Brits executives and engineers actively taught and learned from each other.

DaimlerChrysler contracted the [South African Council for Scientific and Industrial Research](#) (CSIR) to help with the privatization of sisal farms, assess supply chains and find other local applications for sisal. Only three of 23 available farms took up CSIR's commercialization proposal, because the Northern Province government declined to privatize more farms until after comprehensive social plans, land claims and different commercial models have been developed.

There is not a lot of farms. But the tropics are littered with disused and underused sisal plantations. Cotton is also an important crop in some of the poorest African countries, such as Burkina Faso, Mali and Niger. An increased use of cotton and new industrial uses for fibers such as sisal, hemp and coconut could help to generate new sources of income and new jobs throughout the agricultural parts of the developing world.

The C-Class rear shelf is only the beginning. According to Prof. Kohle: We are creating a win-win situation combining economics and technology, ecology and society, and we are setting up exemplary projects in various regions. Our know-how on natural fiber technology and the optimization of biofuels will give rise to new applications and sales markets in the automotive industry.