

PEDALLING A GREEN CAUSE

Ride handcrafted Made-in-India Bambikes to derive extra mileage for a greener environment. BY SANGITA THAKUR VARMA

How about taking a Bambike ride to office today? It promises physical exercise, fresh air and in addition reduces your carbon footprint on Mother Earth. Sounds interesting, right? The architect of India's Bambikes, Vijay Sharma, passionately desires that more people take to cycling for the health and ecology benefits that it packs in its pedals. It is this singular wish that is driving him to persist with building these eco-friendly Bambikes despite the fact that he has not yet found many buyers in the country for his creation. The bike though has created plenty of buzz in the India and abroad.

The first Bambike or bamboo bike in India was crafted by Bengaluru-based Sharma in 2009. But Sharma does not claim any patent for this innovation as he says, "The first bamboo bike was made in 1898 in England." It is a different matter altogether that the invention did not succeed at that point of time due to its faulty design. "But after about a hundred years it's a rediscovery I would say," adds Sharma

talking about his innovation.

The popularity of Sharma's Bambike pans across the globe. From Mauro Vanoli, a bike enthusiast from Italy who came down to Bengaluru to get a customised mountain terrain bike (MTB) made at Sharma's workshop, to the German granny who was on a mission to travel across the world on her bike in 10 years, and chose Bambike for her forward journey after meeting Sharma in Bengaluru in 2010—Sharma undoubtedly has a long list of admirers.

The faith of his patrons is not misplaced. In the first dynamic testing in 2010, under the Japanese Industrial Standard (JIS) testing at TI Cycles in Chennai, the Bambike underwent 200,000 vibrations and emerged unscathed. The test entails only 100,000 vibrations. It proved beyond doubt that the bamboo bike was as tough as a steel frame one.

For Sharma, "The Eureka moment was when the R&D department from TI Cycles, Chennai, called me with the result of the JIS test. It was a great experience to see people's reaction when they saw the Bambike for the first time. Everyone had one question:

"Will it break?" And I would reply: No it won't, it is as strong as steel. They would ride it and would not believe that bamboo can be such a strong material."

Sharma, an alumnus of the Centre for Environmental Planning and Technology, Ahmedabad, credits his creative skills to his carpenter father whose workshop was his childhood playground. Perhaps the reason he was always keen to have his own space—a workshop. When his wife Niyati bought a bicycle to commute to work in 2008-09, his interest in bicycle design was aroused and he started researching online. Meanwhile, after a short stint at a furniture design company, he set up his own workshop in collaboration with two friends—6mm Designs and Furniture. Interestingly though, it was not a bicycle but a tricycle or a trike that first rolled out of Sharma's workshop. The next invention was what he called a unique Tandem Trike. Both the varieties were an instant hit in Bengaluru, especially with kids, to whom Sharma would give free rides as a reward for doing their homework.

The first Bambike prototype weighed 15 kg, 2 kg less than conventional steel



The Creator and his Inspiration: Vijay Sharma with his wife Niyati who prompted his journey into the world of bamboo bikes.



Rearing to Go: Hardy Bambike makes great mountain terrain bike.

frame bikes. Built on the request of friend and business partner Vaibhav Kaley for one of the latter's friends, Sharma says, it had a slight design fault. The prototype that entailed hours of internet research and took just three days and ₹10,000, had, in Sharma's words, "a problem of fishtail effect".

With the first Bambike picture being uploaded on the internet by a friend, Sharma, however, got international attention. Craig Calfee, US-based bamboo bike maker offered collaboration while enquiries from Europe also poured in. But Sharma had a different path chalked out for himself. He wanted his bikes to be made indigenously and remain affordable for the common man in India.

The first prototype was soon refined to perfection. The first Bambike was made with raw bamboo using metal sleeves on junctions. "I overcame the bobbing problem in the second prototype where I used a hollow bamboo stick instead of a solid one. It reduced the physical weight of the bamboo (to 12 kg) as well as made the frame stiffer." The metal sleeves were replaced by hemp fibre and the prototype was made with thicker bamboo sections with a jig to hold all members and important junctions like bottom brackets, rear drop out, head tube and seat tube. All the parts were glued together. Sharma explains, "While making the first Bambike I had not thought of a jig." A jig is a metal frame used as a reference for mass production while joining different parts to make an object so that all pieces are identical, he explains.

While the average speed of these bikes is the "same as normal bikes depending on how fit a person is and how fast he can pedal," as Sharma says, the intrepid inventor put his innovation through tough tests to prove its strength.

Soon after the first prototype, Sharma became associated with Ride-a-Cycle Foundation that promotes cycling as an eco-friendly measure. Arun Katiyar of the Foundation, who proved a valuable guide to the innovator, encouraged Sharma to test his bike at the Tour of Nilgiris (TIF). So Sharma built a special MTB for the 8-day, 900 km rally in December 2009, which came out tops. It also garnered wide media attention.

Asked about his journey since the first prototype in May 2009 to now, the humble innovator says, "Well I am very much where I used to be—still working on my furniture and bikes, as and when I get orders. I have been exploring using wood to make a bike for children." He admits, "Though lots of recognition has come to me, I have not sold many bikes in India." To be precise, as Sharma elaborates, "There is not much demand for these bikes in India, but abroad

"I would be happy to have Bambikes made in good quantity so that people can afford them...I am an artisan myself... maybe I cannot make a big industry out of it. For that I may require someone else's help."

—Vijay Sharma
Creator, Bambike India

there is for sure. Out of the 12 bikes I have sold, only two have been sold here."

The starting price of the handcrafted bikes, each of which is a piece of pure aesthetics, is ₹25,000 (US\$ 417.43). The cost goes up as per customisation requirement. But Sharma remains unfazed by the slow uptake and in 2012 tied up with a Manipur NGO to train indigenous people in the craft of manufacturing Bambikes. The target is to produce 1,000 bikes by 2014.

"Making a single bike takes up to 15 days now as there is a lot of customisation involved and it is a labour intensive process," says Sharma. "From the first prototype till today there have been improvements in terms of incorporating high quality parts in the bike. The frame structure remains the same as does the process. What has changed is the geometry and accessories used in the bikes."

The Bambike's eco-friendly credentials are unarguable. As Sharma says, "It is very much a sustainable design since we are using seven types of bamboo which are naturally grown rather than steel or aluminum which has its own carbon footprint. In addition bamboo has tensile strength, consumes less energy compared to metals and also is better-suited for rough terrain given its better shock absorbing powers."

Despite all these advantages, the main reason for the lack of a market for Bambikes here, Sharma feels, is because "people are reluctant to buy at the current price. I guess it can be made cheaper if it is produced in numbers." The innovator who admits he "has no concrete plans for the future and I guess I will keep making bikes as and when I get orders and try new things," adds, "I would be happy to have them made in good quantity so that people can afford them. It requires only a couple of days for a person to learn how to make a frame. I feel I am an artisan myself and can teach others but maybe I cannot make a big industry out of it. For that I may require someone else's help."

We sure do hope someone out there is listening. For, this is one right cause. ■