



## State award – Tamil Nadu

### Innovative Handloom

Karappan Venkatraman  
Coimbatore, Tamil Nadu  
Scout: SEVA, Madurai

Born in a farmer's family, V. Karappan (71) lives near Tiruppur. Most people in his and the surrounding area work in weaving and textile-related businesses. Growing up among weavers and loom operators developed his interest in weaving. He also started improvising on the looms, developed a jacquard lifting machine with a gear system, and introduced a braking system for handloom machines.

Once, chikungunya disease was widespread in the region, affecting a large number of workers. They complained of joint pain, due to which they could not work on the looms and had to discontinue their jobs. Karappan decided to design a handloom where only one leg and one hand are needed for weaving. After developing it successfully, he modified it further into a loom that could be operated by a

single leg without requiring any support of hands.

The innovative handloom machine includes a static and dynamic body frame, an oscillating frame made of wood, pulleys, gears, and a band brake for stopping power transmission. The machine is operated using a single-foot pedal. The mechanical power is transmitted from the oscillating frame to the roller below, which moves the oscillating cross frames up and down to facilitate weaving. The application of the band braking system stops the handloom operation within seconds. Due to the torque stored in the flywheel, the effort to be applied by the weaver is drastically reduced. Silk, cotton sarees can be woven within 12 hours at 0.5m per hour. Also, bed sheets can be woven on this handloom.

