

## Bullet Santi - Multipurpose motorcycle operated farming equipment

<b>Innovator</b> <b>Mansukhbhai Jagani</b>	<b>Address</b> At-Mota Devaliya, Babara Amreli, 365410, Gujarat-India	<b>Contact Details</b> Cell: 9925447400
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**Problem Addressed:** For farming operations, tractor is not an affordable option for farmers having small land holdings. Increase in the cost of fodder for bullock, regular occurrence of drought and shortage of farm labor forced the farmers of Saurashtra area of Gujarat to look for an alternative to Bullock. Inspired by a local mode of transport, the three-wheel taxi chakdo (common transport in the Saurashtra region, innovator has developed an innovative multipurpose farming machine which can do all the operations which can be carried out by a pair of bullock.

**Product:** Using the self fabricated chassis, drive and power of an Enfield Bullet motorcycle in front the innovator has retrofitted an attachment with two wheels at the rear with a tool bar to fit various farm implements. The rear wheel of the motorcycle has been removed and an innovative assembly unit has been attached. It can also be designed and attached to locally available Chhakdo rickshaw or assembled vehicle having minimum 6.5 HP engine. This meets various needs such as ploughing, weeding and sowing seeds and spraying. It can improve productivity and reduce operating costs for farmers, who currently use bullock-driven plough and cannot afford the tractors or power tillers.

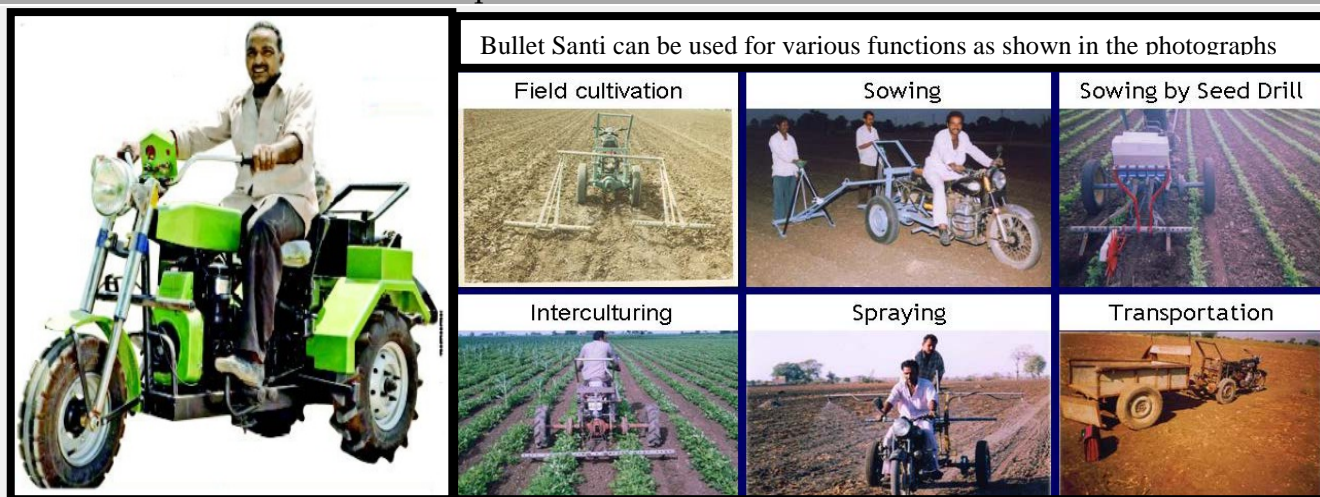


Photo: 1 - Main attachment and various tools to be supplied



<b>Technical Specifications</b>	<ul style="list-style-type: none"> <li>• Can plough about two acres in 1 litre of diesel</li> <li>• Can plough 8 to 12 acres in 8 hrs (1 day) depending upon the operation and type of soil.</li> <li>• Distance between rear wheels can be adjusted as per crop spacing</li> <li>• Provision for plough lifting mechanism &amp; reverse gears which facilitates easier field operation</li> <li>• Performs Multi farm operation: Farming, inter-culturing and sowing operation</li> </ul>
<b>Key Competitive Advantage:</b>	<ul style="list-style-type: none"> <li>• Smaller than the tillers and tractors, but stronger than draft animals</li> <li>• Fuel efficient, sturdy, easy to handle and operate</li> <li>• Easy to assemble and dismantle. (can be also used as a regular motorcycle)</li> <li>• Multi farm operation: Farming, inter-culturing and sowing operation</li> <li>• Because of light weight, it prevents soil compaction, can be used for orchards and plantations crops</li> </ul>
<b>Time to deliver:</b>	15 days after confirmed order
<b>Price :</b>	<p>Rs. 1,65,000 onwards (ex-factory cost) including main attachment and four different types of farming equipment's for Shallow ploughing, Harrowing, Sowing, inter-culture operations.</p> <p><b>Note:</b> Presently no company is manufacturing and selling diesel motorcycle in market and therefore customers have to arrange an old diesel motorcycle on their own and order only main attachments. The innovator will supply the main attachment with four different types of farming equipments (See Photo: 1). Innovator will provide a manual with the help of which one can easily assemble the equipments with the motorcycle on their own or with the help of any local garage mechanic.</p>
<b>Achievements:</b>	<p>Innovator has been awarded National Award from NIF's First National Competition for Grassroots Innovations and Traditional Knowledge in 2001. Innovator had visited South Africa as a part of a delegation led by SRISTI on the invitation of Commonwealth Science Council to share his innovation with his counterparts in Limpopo province. Innovator got a patent in India and USA. Given the fact, many other users and innovators copied this technology, he has appreciated the concept of 'Technology Commons' implying no restrictions for other innovators to copy and adapt. But commercial firms will need license from members of the 'Technology Commons'. He has also been selected by FORBES in their list of most powerful seven rural Indian entrepreneurs whose inventions are "Changing Lives" across the country.</p>
<b>IPR Status:</b>	Patent Granted in India (No: 205097) and USA (No: 6854404B2)
<b>BD website link:</b>	<a href="http://nif.org.in/innovation/bullet__driven_santi/87">http://nif.org.in/innovation/bullet__driven_santi/87</a>
<b>For Business</b>	Business Development,

**Enquiries,  
please contact:**

**National Innovation Foundation - India**

Satellite Complex, Jodhpur Tekra, Premchand Nagar

Vastrapur, Ahmedabad -380 015, Gujarat, India

Phone: +91-79-2673 2456, 26732095; Fax: +91-79-2673 1903

E mail: [bd@nifindia.org](mailto:bd@nifindia.org), Web: [www.nif.org.in](http://www.nif.org.in).