

Sanedo – a three wheeler mini tractor



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Innovation Brief : After years of experimenting with the Santi, Mr Upendra Rathod has fabricated a three wheeler mini tractor called Sanedo at the Rathod Agro Industries. The Sanedo uses new features such as hand hydraulic, reverse gears as well as sprayers for pesticides. This makes it a powerful, multipurpose agricultural equipment with high mileage that has the potential to make use of animals like oxen in farming an obsolete practice.

Detail : Mr Rathod started working on the Sanedo around the year 2000. After that they have tried to make this equipment using around 100 to 120 Bullet (Enfield) motorcycles. As they were using simple tyres to attach the Santi, the farmers complained that the tyres used to slip in the soil. After that they used tractor like tyres that solved the problem of slipping.

Another problem they faced was the when the Bullet Santi with tractor tyres were used for cotton crops, the stems of the plant got crushed under the tyres. The cotton crops were getting affected due to this problem. To solve this problem they fitted large sized fans in the Sanedo, thereby avoiding loss to the cotton crops.

At least two men were required to use the Bullet Santi. They,



therefore fitted it with hydraulic system at the handle so that only one person could easily use it. Another problem they faced was that they could not find any old bullet motorcycles from the market. Hence they decided to make a completely new chasis. They prepared a chasis in the workshop with 7.5 HP power.

There was reverse gear in the Bullet Santi which used to demand recurring repairs. Hence they decided to use an old gear of a van of the Maruti automobile company. They reconditioned it and fit it along with the chasis in the Sanedo engine. All the fabricators who were fabricating the Bullet Santi now started making its improved version – Sanedo.

However Mr Rathod and his team were the first people to make the Sanedo using the Maruti Van gears which was a huge success. They have actually made a BT Sanedo from the Bullet Santi which the farmers have started using instead of the ox in their fields. All in all, the Sanedo is made using the philosophy of 'best out of waste' that makes it affordable for all.

Thereafter they made a further change in the Sanedo by changing the hand hydraulic to oil hydraulic so that it put less stress on the person using it.

Later they also started using 10 HP engine instead of 7.5 HP that increased its power to a great extent. Mr Rathod also improved on the ignition and converted it to self-start Sanedo so that it became easier for the end user to start it.



In the next step they fit a pressure pump and sprayer with 6 sprays so as to facilitate the spraying of pesticides. This decreased the time required for spraying the pesticides by a great deal. A manual spraying method requires a whole day for 10 bigha of land. However, the same area can be covered in just a matter of 2 to 3 hours using the sprayers fitted in the Sanedo. Hence around 40% to 50% users started fitting sprayers in the Sanedo. Moreover, the Sanedo consumes just diesel worth Rs 20 to 30 per acre of land, probably making it the world's best mileage for any vehicles in this category. Also, this Sanedo is the only vehicle which can be used by the farmer according to his field. He can easily change it from two wheeler to four wheeler without much difficulty.

Social / Impact / Diffusion : The demand for Sanedo has also grown to a large extent thereby increasing the productivity. In Mr Rathod's village, i.e Chital village, where only 2 to 3 or us were fabricating the Sanedo, now there are around 30 persons involved in making the Sanedo. Today around 100-150 persons in the Saurashtra region are into fabricating the Sanedo. However, all the new changes that have been introduced in the Sanedo is only done by Rathod Agro Industrial Works set up at Chital village in Amreli district of Gujarat. Till today they have made around 1000 to 1200 Sanedos.

Their village Chital has a population of around 20,000 of which around 2000 to 2200 farmers are using the Sanedo compared to only 10 farmers who use the traditional oxen for their fields. In Chital village, there a huge market of the Sanedo, which costs anywhere between Rs 60000 to Rs 1, 40,000.

Problem / Scope of improvement: Mr Rathod however feels that they will have to register Sanedo through some government agency or get license for them, since they expect that soon the farmers will be unable to do efficient farming without Sanedo. They appeal to the government that they should declare Sanedo as an agricultural equipment. This will help the farmers apply for loan, subsidy or insurance for the Sanedo. This will also open doors for the Sanedo to be used throughout India as well as exported to other countries.