

Custom Hiring Centre

Shri Devendra Kumar Rathore a resident of Betul district about 2 ha land. To augment his net income, he became interested in custom hiring of agricultural machinery and received training from CIAE, Bhopal in August 2013. After successfully completing the training, he established his custom hiring business centre in December 2013 with an investment of Rs. 18 lakhs. In the beginning, he bought a 60 hp tractor along with one reversible MB plough (2 bottom), front dozer, rotavator (2.1 m), cultivator (9 tynes), seed-cum-fertilizer drill (13 rows), raised bed maker-cum-seeder (4 rows – 2 beds), multi-crop hadamba thresher (35 hp), sugarcane cutter planter (2 rows) and hydraulic trolley (4 wheel). With his entrepreneurial skill and zeal to adopt new technology, he procured the sugarcane cutter planter from Shahabad in Haryana for providing service to sugarcane farmers in his area and also promoting raised bed cultivation for kharif crops. He rents out these machines to many farmers of his village and also surrounding villages for cultivation of field crops like soybean, wheat, maize, chickpea sugarcane etc. He generates an income of around Rs 6.5 lakhs in a year with a net profit of about Rs. 3 lakhs. With technical guidance from CIAE scientists, he is planning to add two more machines reaper-cum-binder and sugarcane bud chipping machine to his inventory for growing sugarcane seedlings in portray to further diversify the business of his custom hiring centre.



Shri Satendra Singh of Shivpuri district owns 5.0 ha land. To augment his net income, he became interested in custom hiring business of agricultural machinery in his village and received training from CIAE, Bhopal in September 2014. After successfully completing the training, he established his custom hiring business centre in April 2015 with an investment of Rs. 22.18 lakhs. Initially he bought a 55 hp tractor of along with one reversible MB plough (2 bottom), front dozer blade, rotavator (1.8 m), duck foot cultivator (7 tynes), disc harrow (14 discs), seed cum fertilizer drill (9 rows), a thresher (35 hp), front mounted reaper, (1.5 m), straw reaper (56"), a power sprayer, grain cleaner, a trolley (2 wheel). He rented out these machines to around 100 farmers for about 1600 hrs of his village and also surrounding villages for cultivation of field crops like soybean, paddy, wheat, pulses as well as crops like coriander etc. He generates an income of around 10.0 lakhs in a year with a net profit of about Rs. 4.5 lakhs. He added one more machine namely bhusa shifting pump and planning to add few more machines in his inventory with the surplus profit made from custom hiring.

Protected Cultivation

Sri Ritesh Patidar, a BE (Mechanical Engineering) passout of village Sohargarh, Block Piploda in Ratlam district, owns 12 acres of land. Conventionally he was cultivating soybean in kharif and wheat and chickpea in rabi. In an awareness programme organized by State Horticulture Department, he was convinced about adopting horticultural crop cultivation for profitable farming. He then attended a training programme at PFDC, Bhopal on Protected cultivation technologies. After availing subsidy from State Horticulture Mission, he established a Naturally Ventilated Polyhouse of 2600 sq.m and started cultivating Cucumber and adopting drip irrigation system in vegetable cultivation of 2.50 acre area. By doing this he not only could save water and fertilizers but also got 3 times more yield in polyhouse as compared to open field. He invested a total of Rs 11,57,200 for installation of polyhouse and drip irrigation. He is providing employment to four agricultural labourers of his village. At present he is earning a total income of about Rs.11 lakhs from vegetable cultivation in polyhouse and using drip irrigation system.



Entrepreneurship on Agricultural Machinery Custom Hiring

Shri Rahul Dhoot a resident of village Berkhedha Hassan, of Sehore district owned only 1.25 ha land. To augment his net income, he became interested in custom hiring business of agricultural machinery and received training from CIAE, Bhopal in January 2014 after enrolling in Entrepreneurship Development Programme (EDP) of Directorate of Agricultural Engineering (DAE), Govt of MP which is funded by Department of Agriculture, Cooperation and Farmers' Welfare, Govt of India. After successfully completing the training, he established his custom hiring business centre 'Balaji Custom Hiring Centre' in April 2014, with an investment of Rs. 21.5 lakhs. Initially he



bought two tractors (50 & 55 hp) along with one reversible MB plough bottom), front dozer blade, rotavator (1.8 m) cultivator (9 tynes), seed drill (11 rows), multi-crop thresher (35 hp), straw reaper (56") and trolley (2 wheel) and rented it out to around 100 farmers from his village and also surrounding villages for cultivation of field crops like soybean, wheat, chickpea as well as vegetables like onion, garlic, chilli etc. He generated an additional income of around 8.0 lakhs in a year with a net profit of about Rs. 2.5 lakhs. Later he has added a combine harvester and bhusa shifting pump. He is now successfully running his center and plans to expand this business further.



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M/s Renu Tomar a resident of village Sayar, of Vidisha district became interested in custom hiring business of agricultural machinery in her village after completion of her post-graduation in chemistry. She enrolled in same program as Shri Rahul Dhoot and after successfully completing the training; she established her custom hiring business centre 'Renu Custom Hiring Centre' in April 2013, with an investment of Rs. 18.0 lakhs out of which Rs. 9 lakhs was given to her as subsidy from the Government. Initially she bought a tractor of 55 hp along with one reversible MB plough (2 bottoms), front dozer blade (6 feet), rotavator (1.2 m) cultivator (7tynes), seed drill (11 rows), multi-crop thresher (25 hp), straw reaper, spray pump (700 l) and trolley (2 wheels) and rented out these machines to many farmers for 1030 hours in 2013-14 and 1320 hours in 2014-15 hrs of her village and also surrounding villages for cultivation of field crops like soybean, wheat, gramas well as vegetable crops. The custom hiring centre generated an annual net profit of about Rs. 5 lakhs in 2013-14 and Rs. 7.87 lakhs in 2014-15. Gradually, a few more machines were added to her inventory like bhusa shifting pump, winnower, spiral grader etc. with the surplus profit made from custom hiring centre and two small tractors of 15 & 18 hp for horticultural works with 50% subsidy provided by Department of Horticulture, Government of Madhya Pradesh. She runs the custom hiring centre successfully and plans to further expand her business in this sector.



Precision Farming

Training on drip irrigation and plastic mulching technology and covered cultivation is regularly carried out at Precision Farming Development Centre, CIAE, Bhopal. Farmers like Vijendra Singh, Rajender Singh Rathore, Krishna Kawad, Narayan Singh and Radheshyam from block Sonkach, Dewas district who were cultivating conventional field crops, after undergoing training and getting financial assistance from the State Horticulture Mission have now adopted drip irrigation at the cost of Rs 0.8-2.5 lakh in an area of 1.2-6.0 ha for cultivation of onion, garlic, potato, tomato and chilli. They have earned a revenue of about Rs 5.0 lakh/ha annually during the last two years. They have also been preparing their own quality vegetable seedlings by adopting portray method; using ventury in the system and applying fertilizer judiciously to the plants, as well as using vermicomposting. They believe that after cultivation of vegetables with drip irrigation system, they not only save water but also generate higher income as compared to earlier conventional cultivation practices. A network of marketing produce has been developed in district head quarter, because of which the highly perishable vegetables are immediately sold in the market, preventing post-harvest losses.



Shri Radhye Shyam from Indore district had been cultivating conventional field crops. After acquiring skill through a training program at CIAE, Bhopal he diversified his cultivation activities by installing a polyhouse in 2000 sq.m and drip irrigation system in 3.5 ha area. Now he cultivates dutch roses in polyhouses; brinjal, garlic, papaya, citrus under drip irrigation, earning about Rs.15.00 lakhs and providing employment to six more agricultural labourers of his village.



Polyhouse Enhanced Farmer's Income

Shri Md. Asfaq, 33 Years old, 10th pass from Shahpur Madha village in Raisen district owns 2 acres of agriculture land and was able to make about Rs. 50,000/- per annum with traditional crop rotation of Soybean-Wheat and Gram. In the year 2012, he attended a training programme on protected cultivation technologies at Central Institute of Agricultural Engineering (CIAE), Bhopal. In the year 2013, he installed a naturally ventilated polyhouse sizing 2000 m². He



He cultivated gerbera plants of six different color varieties on raised beds in the polyhouse. Initially he faced difficulties in managing the crop during summer season due to high temperatures, but with the suggestions from the scientists of Precision Farming Development Centre (PFDC), CIAE, Bhopal he managed the production of gerbera very well and started getting around 1000 flowers per day. In an year, about 3.5 lakhs flowers were harvested and sold by him at an average whole sale price of Rs. 3 per flower. With this multi-enterprising approach, he has been able to achieve profit of four lakh plus. He maintains regular contact with the CIAE scientists and staff on plant protection measures as well as irrigation and fertigation issues. He is disseminating the technology to the other farmers and has become a role model for them.

Soy based food products enterprise

Mr. Eknath Dhamdhere, an entrepreneur trained at CIAE, Bhopal has been successfully running a soy-based food product enterprise, named **Sangram Soy Food Products** at Pune, Maharashtra. After undergoing training at SPU, CIAE, Bhopal, initially he started preparing soymilk, tofu, soy flour and soy biscuits at domestic level and selling it to the local consumers of his colony, fitness clubs/gymnasiums etc. Later he included products viz. *soy-shrikhand* and *soysattu* also. His wife Smt. Nanda Dhamdhere also started contributing for further expansion of enterprise and both prepare and market good quality soy products.

With intervention of CIAE, they prepared *soysattu* and through nearby Aanganwadis and self-help groups of the area, provided 75 kg /month (40-50g/child) to the severe malnourished pre-school children and regular consumers of urban Pune. They regularly supply 500-600 kg *soyladdu* per day to the Aanganwadis of nearby areas, producing 25-30 liters of soymilk per day and selling it in the local market. They are also preparing about 30-40 kg *soyshrikhand* per week and gaining handful profit by selling in the market. Apart from these products, they are preparing and selling about 200 kg soy biscuits per week. *Soynuts*, *soysev* and *soychakli* is also on their product list and they supply as demand comes. They are also planning to introduce soy butter milk in near future. They also participate and exhibit their soy products in exhibitions organized in different areas of Maharashtra for creating awareness about use of soy foods in daily diet, for nutrition and health benefits.



Entrepreneurship in custom hiring of agricultural machines

Shri Kamlesh Sahu from village Begumpura in Gauharganj Tahsil of Raisen District having four acres of land has started custom hiring centre for agricultural machines in his village in the year 2014, after undergoing training at CIAE, Bhopal. He started his custom hiring centre after buying a tractor, plough, rotavator, thresher and a straw reaper with financial assistance from bank and during first year itself did a business of Rs. 8.0 lakhs approximately. He has been able to earn profit of approximately Rs 3.0 lakhs and also provided employment to local unemployed youth.

SRI Power Weeder for Rice

System of Rice Intensification (SRI) has emerged as an alternative in paddy cultivation with core principles of using less seed, water and fertilizer. The weeding by cono-



weeder is the main practice that ensures the success of the SRI technique. The uses of manually operated weeders requires considerable labour and in puddled field falls under the category of a heavy work and are primary bottlenecks in adoption of SRI technique. To combat this problem a two row power-weeder was developed by AICRP on FIM (TNAU, Coimbatore centre) which works under all soil conditions. It is self-propelled, compact, easily maneuverable between the crop rows and light weight (17 kg) with 1.30 kW engine, float and four high speed rotary cutting blades (300 rpm) on either side, which weed two rows at a time with a weeding width of 150 mm. The average forward speed of operation is about 30 m/min as compared to 15 m/min with cono-weeder. The average fuel consumption is 0.40-0.65 l/h. The field capacity is 0.09 ha/h at 78% field efficiency and is about 4 times higher than cono-weeder. The approximate cost of the power-weeder is ₹ 40,000/-. The cost of operation in single pass is ₹ 1100/ha and saves ₹ 6530/ha in two passes compared to manual method.

Extensive field trials of power-weeder were conducted in sandy loam soil with planting by SRI method in check row (225 x 225 mm) pattern at 40 farmer's fields covering more than 65 ha area districts of Tamil Nadu. Farmers were highly satisfied by the performance of the weeder. The power-weeder was released by the State Variety Release Committee of Tamil Nadu. The prototypes were supplied to centres of TNAU and 13 co-operating centres of AICRP on FIM for feasibility testing. The memorandum of understanding was signed between TNAU and M/s. Premier Power Equipments Ltd., Coimbatore through Agri Business Directorate of TNAU for commercialization of SRI power-weeder. The firm is manufacturing SRI power weeder under the brand name of **Garuda** and has supplied more than 500 power-weeders to farmers and government institutions during the last three years.

CIAE Vegetable Transplanter for transplanting sugarcane potted seedlings

The CIAE Vegetable Transplanter was demonstrated on sugarcane seedlings raised from budd chips at a sugar factory in Sankhani, district Gwalior. After some modifications in fingers and furrow opener boots of the transplanter for planting of the potted seedlings, a demonstration was conducted. After demonstration, the CIAE vegetable transplanter was used on 0.35 ha for successful transplanting of 6,480 sugarcane potted seedlings at 1.2 x 0.45 sq m spacing with three labourers and one tractor operator in 5 hrs.