

Farming Services: Connecting Small Indian Farms with Technology

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Indian agricultural sector is characterized by presence of large no of small and marginal farmers. More than 80% of the farmers are small and marginal who owns less than 2 hectares of land. They have scarcity of financial resources and therefore have remained isolated from advanced farming technology. The lack of mechanization in the country has ultimately resulted in low farm productivity and farm income. Therefore, despite availability of sufficient arable land, India unambiguously will face challenges to meet spurred demand and to achieve its ambitious aim of doubling farmers' income.

Some of new technologies such as Precision Agriculture, and Agricultural Robots have potential to improve farm productivity and their adoption has gained momentum in the past few years. However, factors such as high initial investment costs, lack of awareness and low understanding pertaining to new technology are standing against the smart farming technologies to penetrate well in the country. Moreover, small and marginal farmers being sceptical about returns from investments have shown reluctance in taking interests in these new techniques.

Services confronting the challenges

The scenario has provided plethora of opportunities for services to set its roots in the country. The ecosystem has witnessed a major trend of emergence of various start-ups which has brought new technologies and ideas propelling further developments in the market. Farming as a Service is one such idea that is gaining a lot of traction in the industry. It is service delivery model which allows users to have access to farm management solutions, farm equipment on rent and virtual platform to have easy access to the market. From providing technologically advanced farming equipment to detailed information of field and supporting farmers in decision making process these service providers are supporting farmers in every steps of crop production. In the past year, the model has already gained a lot of investors' attention. Over \$105 million for FaaS has already been invested in India as revealed by Bain and Company in its report on FaaS. Oxen Farm Solution, AgroStar, EM3, and Crop. Into name a few are some of the active players in the market. Moreover, the participation of established players such as Deere and Company, Mahindra and Mahindra and TAFE Ltd have further exemplified the potential that this market holds.

Narrower in scope than FaaS, Farm Robots as a Service is another business model evolving in the country's ecosystem. It is a service model where farm robots and other machineries such as tractors and harvesters are available on rent. Available on sub-

scription and pay per use basis, the Farm Robots as a Service has made advanced technology easily available to farmers which were rather expensive. Moreover, by converting fixed cost of equipment purchase into variable cost, the service has provided an opportunity for farmers to experience the benefits of the technology at lower costs. Agri Business Centre for Development Ltd is one such firm in India providing drone on rent which commonly cost between Rs 2 lakh and Rs 10 Lakh per drone. Apart for private organizations, the government is also actively supporting the model. The launch of CHC Farm Machinery and Krishi Kisan App for Geo-Tagging by the Union Minister for Agriculture and Farmers Welfare in September 2019 is one such example of government initiatives helping to reduce capital expenditure on farmers.

Breaking the conventional machinery ownership model, these services have emerged to be complementing the smart farming practices. Removing the cost barrier between technology and end-users, services can effectively address the challenge of low productivity in the country. With active developments and support of government, the agriculture sector of the country is set to exploit its untapped potentials in the coming years.

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