

PAVING THE WAY FOR A DATA-LED AGRICULTURE ECOSYSTEM

Building an ecosystem of digital agriculture with individual farmers is challenging due to low smartphone penetration or low digital literacy. Productivity and income enhancement efforts directed towards individual farmers will always be a challenge. Hence, farmer collectives or farmer producers' organisations (FPOs) are well poised to address some of these challenges. However, Farmer Producer Organizations (FPOs) are met with many significant obstacles and find it difficult to create a sustainable business.

Digitization for Negotiating Market

In order to create a sustainable business model, FPOs need farmer information and associated data points which can help them build a realistic business plan, one which is built keeping the customer (farmers in this case) at the core. The capacity building needs at FPO level entails various sub-components like communication structure, data identification needed for creating a business plan, data-based decision making, negotiation skills, compliance and governance. All this can only be achieved through digitization which helps in collecting, managing and building on data assets. These data assets will help them negotiate better with the market actors.

Data is power and the ownership of data should belong to farmers. FPOs are best suited to collectively build this data asset for a large group of farmers. Soil data is needed to plan optimised input requirements, weather/climate data is needed for creating a mitigation plan,



consolidated data of produce availability (crop, variety, quantity and dates of harvest) is needed to create a simplified communication channel with the market linkage actors. Only when the whole value chain is digitised can we adopt blockchain like technology to build on traceability of farm produce.

Placing the Farmer at the Centre of the Equation

Digital Green's program for farmer collectives is aimed at providing the FPOs with all the necessary skills, digital tools (mobile app) to organise farmer data, use these data points to build a reasonable and accurate business plan and also help them digitise their business. The capacity building exercise coupled with the digital tools enable the BODs/management of the FPOs to build and manage their business, establish simple & consistent communication channels between member farmers, and effectively negotiate with market players. Digital Green's program for farmer collective enables them to both own and initiate the data collection process. An

FPO, powered with data assets, can act as the interface between smallholder farmers and ecosystem players (both private and public). With a secure data sharing consent system (enabled by Farmstack, a digital public good technology developed by Digital Green) in place, FPOs will be able to share only those relevant data points of farmers with the market players, which will help in the exchange of products and services. This in turn will also help Agtech players in optimising their cost of operations, thus helping them focus their efforts and resources on improving the delivery of products and services to end farmers through the FPOs. This will be a win-win for all stakeholders.

D2FO app

Digital Green is offering its Digital products and training to FPOs for free and all its digital products are being developed as digital public goods. Characterised by a framework which can be customised to the requirements of individual users, the **D2FO app** enables farming communities to access better remuneration for their



efforts. It works closely with farmers to understand requirements across knowledge management and upskilling, inputs, financing and even staffing. It streamlines communication between FPOs and farmers through its insight generation capabilities that form the basis of decision making. The inputs provided by farmers subsequently help FPOs and frontline workers coordinate input procurement, policy action or trade facilitation with the relevant private sector and public sector stakeholders in the ecosystem.

The success of 110 women pumpkin farmers from Odisha is a remarkable testament to the potential of agritech and data-driven decision making in increasing incomes and boosting growth within the local economy. Each of the women farmers was faced with losses in income as they manually routed the produce to the market. With support from the digital skilling, crop data aggregation, and market access functionalities of the **Digital Green Farmer collective app**, the all women's FPO was able to estimate the availability and quantity of produce. They were able to collectively negotiate and sell 4.8 metric tonnes of pumpkins at farm gate. This not only increased income levels by 18%, it also helped the community prevent logistical expenses as they were borne by the buyer.

Transforming FPOs into Engineers of Agricultural Microenterprises

As there is a pressing need for a centralised repository of agricultural intelligence from across the nation, FPOs can pave the way for its creation. Working closely with farming communities can sustain the creation of

diversified intelligence which will equip decision-makers with critical insights on cropping patterns, resource gaps and overall vulnerability to climate events. FPOs can also give farming communities access to findings in emerging research in the ecosystem in the interest of fostering sustainable farming practices. The farmer collective app endeavours to make farmers partners and co-owners of the agricultural ecosystem by helping them realise their agency and power as stakeholders. It not only aims to play an enabler role in helping the national plan of creating 10,000 FPOs, but also play a critical role in building sustainable FPOs. The road towards achieving a fully digital agriculture sector will be paved one insight at a time through the vision of the farming community and the resourcefulness of the FPO infrastructure.

