



MOVING TOWARDS INCLUSIVE GROWTH AND SUSTAINABILITY IN INDIAN AGRICULTURE

Setting Goals

The Sustainable Development Goals (SDGs) as outlined by the Food and Agriculture Organisation of the UN – from ending poverty and hunger to responding to climate change and sustaining our natural resources – lie at the heart of the 2030 Agenda. This presents a tremendous opportunity for India, given that almost 60% of our population is involved in agriculture and allied activities. The ability and willingness to transform the sector can have a far-reaching impact on a large chunk of our population.

Agriculture and allied activities contribute about 20.2% to our GDP (2020-21). With the government's stated objective of doubling farmer income and aligning it to SDGs of sustainable agriculture, Indian Agriculture presents a very compelling and huge opportunity to become globally competitive.

The last 18-24 months have seen a significant focus on it. It looks like the sector is finally becoming mainstream, and all the vested parties and stakeholders – government (both central and state), corporates, financial institutions, NGOs, think tanks are aligned to achieving common goals.



THE CHALLENGE

Of the total number of small and marginal holding farmers globally (about 500m), a large chunk – almost 30% – reside in India. As per International standards, a 15–20-hectare land holding farmer in Africa or Southeast Asia is called a small farmer. The same small/marginal holding farmer in India is someone having less than 2 hectares of land. They constitute over 90% of the total farmer population of India. To impact this population alone and focus on doubling their income and bringing transformational changes would augment well for India in poverty alleviation.

As Sameer Tandon, Regional Director, ASEANZ, UPL says, “when the government talks about doubling farmer income, you are very clearly going to impact everyone in the chain.”

At almost 120m, the small and marginal farmers present a very fragmented segment for the upstream part of agriculture. It leads to information asymmetry. This means that all stakeholders who engage with these farmers for their business don't have access to real-time information or even reliable information—including the farmers themselves. This then leads to sub-optimal business decisions for various stakeholders.

To put things in perspective, India has the highest arable land; we enjoy sunshine throughout the year and hence can have 2-3 seasons. Yet, the yield per hectare is the lowest in the world (we could compare ourselves to some underdeveloped countries) as our dependence on farm labour is huge.

“In terms of total arable land, India has about 1.5 times more arable land than China, and if we were to just look at the crop protection market, India stands at USD 3b versus China which is at USD 12b,” shared Sameer.

This is just one example of how sub-optimal we are in terms of our efforts to provide inputs. The fragmented land holding also poses a challenge in terms of our inability to access information or reliable data that can help the stakeholders to be proactive and provide optimal solutions at the input level—be it in the form of seeds, nutrients, crops to grow, soil quality, prediction of climatic conditions or even pesticides to spray to protect against attacks.

With doubling farmer income and moving towards sustainable agriculture as the pivot, various stakeholders have been deliberating on this challenging scenario. What seems to have come out is a consensus that digitalisation will help address and contribute to this

cause and address other pain points in the entire ecosystem, especially at the farmer level.

Another challenge is water.

Indian agriculture is a big guzzler of fresh water. It uses up to a staggering 76% of all the fresh water available. We are in the red zone as far as water goes. This needs dire attention as water tables are going down dramatically in parts of India, along with challenges that climate change pose. Mechanisation of farms (which historically was linked to having a tractor in the farm which was primarily used for transportation purposes), crop diversification, driving efficient rice production system (biggest consumer of water), economically viable crop seeding are some things that India needs to push at a fast rate.

As Mr. D Narain, President Bayer South Asia and Global Head of Smallholder Farming says, “If we don’t make a shift in some of the biggest areas of challenges, like water, you will not move the needle.”





THE PROGRESS

The sector is seeing tremendous interest from Private Equity and Venture capital funds globally. There has been an inflow of USD 1.9b since 2010, benefitting around 14m farmers. The sector has witnessed a 48% growth in the last five years. The technology introduction and use, though, has to impact the entire value chain end to end. Currently, the input and output management supply chain is attracting most funds to build efficiencies and drive automation connecting farmers to input and output markets. The efficiency in production per se is yet to build up. This needs more focus and attention if we want to improve our yield per hectare and create impact at the farmer level and their incomes. Water management, soil evaluation, pest management are areas where technology can make a massive difference in driving efficiency in the production phase.

It is heartening to see that progress is already underway as far as digitalisation goes. This must happen in two ways.

The first is a one-time exercise to digitise the land records and farmer information.

About 8%-10% of farmers' (10-12m) land records have already been digitised. States like Hyderabad and Telangana are leading the way in this initiative.

Second is the use of technology like satellite imagery and drones to map land parcels.

Satellite imagery can generate real-time data and information around what crops have been grown in what region and the farmers' productivity—to name a few. Several such cycles that will be mapped will create reliable data that can be actioned and used by all the stakeholders – big and small.

Embracing and introducing smart digital tools that give real-time advice on planting cycle, soil sensors, product quality (at the input level) must be combined with modernising the system. An example would be bringing in technology used outside, like using drones for spraying crop protection products. This will enable a significant shift from the current scenario where no such data or technology is available both for the farmer and the various stakeholders.



A COLLABORATIVE SOLUTION

There are technology players who are looking at this phase and coming up with a solution that will provide a platform for farmers to be able to have information across the entire value chain – right from input to bringing in price transparencies; to being able to assimilate demand and hence give inputs on what to grow per se; to the farmer being able to sell his produce at a higher realisation or price guarantees.

Much of this success, though, rests on farmer endorsements and adoption.

There is outstanding support and recognition from the local state government in this area as the objectives are aligned. The government has approved and launched the formation and promotion of 10,000 FPOs (Farmer Producer Organisation). Each of these FPOs will roughly touch between 500-1000 farmers. This will facilitate access to underserved farmers with better quality inputs, lower-cost financing, agronomy knowledge.

This collaborative ecosystem – between the government and the push of the digital infrastructure – will create a significant impact on the sector.

There is a definite shift in the corridors of power, and concrete steps are being taken to transform and support agriculture. There is an equal and important role that the industries and the broader stakeholders have to play in helping the Indian agriculture transition. This would require collaborative models which are end to end and an open architecture where all players – at any level of the entire value chain, small or big can plug in and become part of a cohesive delivery mechanism that is working towards a common goal of doubling farmer income and promoting sustainable agriculture.

As Mr. D Narain, President Bayer South Asia and Global Head of Smallholder Farming, said during our conversation, “It’s no longer just the views of the private enterprise which is going to make the model successful. That means you will need to bring in a societal mindset to say what does success look like for all stakeholders. Everybody doing business today needs to ask themselves, what is the societal value creation resulting from what I am doing. It is about redefining how you think of value creation, value sharing which is very different from how companies have operated till now.”

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