

## **Agtech: Is Indian agriculture ready for “Gadgetization”?**

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Technological interventions in agriculture globally has become one of the hottest and most debated topics recently witnessing new entrants and innovative technologies to take agribusiness to the next level. Understandably, much of the buzz is occurring in developed Western countries with industrial-scale agribusiness.

In India, progress after the ‘Green Revolution’ has not been appreciable and one of the main reasons could possibly be entrenched “politicization” of the policy making process. Agriculture still supports nearly two-thirds of the population directly or indirectly but contributes just a little over a sixth of the nation’s GDP. Average yields for most of the key crops like rice are at least half of the global average. Food losses, mainly pre-harvest, still amount to as high as 40% more than half of its cultivable area remains unirrigated with growth in coverage lagging badly, competition from non-agricultural uses is exacerbating the shrinkage of cultivable area. Smaller and fragmented land holdings and primitive labour-intensive agriculture coupled with low literacy and lack of access to critical information and knowledge are quite common. Financial inclusiveness particularly for the resource-poor farmers is still elusive. Policy & regulatory environment is rather skewed in favor of few “votebank” crops and is mostly archaic and outdated. Involvement of private players in the food chain is limited since the sector is highly politically-sensitive. Lack of differences in adopting policies by the individual States; lack of a conducive eco-system to promote and nurture entrepreneurship; a deeply entrenched and cumbersome bureaucracy and red-tapism and the list of problems grows lengthy.

In contrast, from a macroeconomist’s perspective, the country with more than 1.3 billion people by the turn of the next decade will probably be the youngest with a median age of under 30 years. More than two-thirds of the population will live in urban areas with their food consumption habits converging and matching with that of their counterparts from the developed world. Not to forget the rise in per capita average income from the current USD 1,274, which has grown at an enviable rate of 10.4% since 2007. The trend is likely to continue as the country is set to become the third largest economy that will have nearly tripled from its current value of US\$2.3 trillion. The implications of this enormous demographic and socio-economic transformation are absolutely mind-blowing. Particularly, for the food industry, it is going to be very interesting yet challenging to cater to the diverse and complex needs of the new generation. These are the people who are ruthlessly demanding more and better in everything they consume and importantly faster as they would be the most time-starved.

In the West, agriculture sector has undergone progressive growth including reforms, land consolidation, achieving economies of scale, adoption of hybrids with specific designer traits, enhanced market orientation,

efficient supply chains, conducive policies to enable creation of demand and open up market opportunities, investments in infrastructure and social or income security for the farmers, better insurance coverage and business-like treatment by the Governments. All these eventually led to a farmer being more in control of his productivity and profitability and be able to plough back a portion of the profit to invest to improve his business. In contrast, in India farmers face all possible risks from production, availability of water, quality inputs and technologies to finally marketing their produce as they still remain largely disconnected from the markets. Ironically, they are claimed to be “risk-averse” and unwilling to invest in technologies or machines to improve efficiency. Hence, from a techpreneur’s perspective, Indian agriculture is still in the “Paleolithic period”. However, despite these challenges, passionate entrepreneurs are innovating and creating solutions from mobile-based options to highly tech-driven precision agriculture.

This paper is an attempt to look at the current and future scenarios whether India is ready for an “AgTech” revolution, how can technology improve the ailing sector, few examples of technological interventions, opportunities, roadblocks and critical success factors for techpreneurs, macroeconomic trends and key industry drivers, and also policy implications. These conclusions may well be applied to other countries that share similar agrarian and socio-economic demographic profile.

Before exploring the unlimited potential of Agtech advancements, there are significant hurdles to overcome in India. A conducive policy environment is the need of the hour to encourage the start-up ecosystem and availability of creative engineering minds in the country with better ICT knowledge, skills and capabilities is not a limitation. However, it might still take a few decades to see an average Indian farmer with a gadget in his hand and managing operations in his tech-enabled farm. But signs of progress are encouraging and it all depends on the quality and pace of reforms that are due since long.

## Biography

Raghavan Sampathkumar is a seasoned Food & Agribusiness professional with 17 years of experience working across Asia Pacific in various subsectors such as agri-inputs, protein (animal & plant), international trade, biotechnology, and animal nutrition. As a food and agribusiness industry thought-leader with a 360-degree understanding of the agri-value food chain, he regularly writes on major agri-food trends, agtech, food security and sustainability for several international publications and regularly speaks at various agri-food industry events. He is currently responsible for Corporate Affairs and Communications at Indofil Industries Ltd, a reputed global agrochemical company, based in Mumbai, India.