Panel discussion outcome "Growing Indian AgriTech by 10X" on 5th Nov 2019, at #Bharat Summit @ #NPC2019.

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Prashant Mehra, Platforms Common Orgn.
Nipun Mehrotra, ex IBM Exec. (Moderator)

Prelude.

The Indian Agriculture sector is best summarised as a sector consuming ~ 46 % of India's available land, 90% of fresh water, employing 50-70% of the workforce yet contributing only 15% of India's GDP and 10% of exports. Several flawed policies also ensured unsustainable environmental practices - consumption of twice the water (per ton of wheat, rice) compared to US & China, inadvertently causing India to export 3-4 % of its available fresh water each year. (In contrast, China imported water through careful policy intervention).

The importance of value addition in Agriculture was further emphasised with the realisation that China with 160 M hectares of farmland (Vs 190 M hectares in India, i.e. 16% higher) yielded an aggregated Agricultural output of $1350 Billion (Vs $ 450 Billion for India, i.e. 300% lower).

Clearly, agriculture in India needed to get more efficient in its consumption of the factors of production, while moving up the value chain to enhance individual and national income.

Therefore, if there was one sector, that needed the holistic and thoughtful attention of policy makers, corporates, start-ups, investors and also a huge injection of tech innovation, it was Agriculture. Technology driven innovation are a key solution to several Agricultural issues, but currently the farmer has limited ability to pay for technology. As a matter of record, there were ~ 500 active AgriTech start-ups (i.e. those with a ready prototype or product, though there were over 2000 listed) with an approx. valuation of $ 300 Million.

Panel composition.

The carefully curated panel was balanced in its diversity and depth of experience and consisted of – **Omnivore Fund** a big investor in AgriTech start-ups; **Cropin**, amongst India's largest Agri start-ups; **Platform Commons Organisation** - building an Agriculture Platform; moderated by a Tech executive with deep interests in Agriculture.

Krishna Kumar – A Business World "40 Under 40" Achiever 2018 started Cropin in 2010 which is now one of India's biggest success stories in AgriTech. Cropin, a global organization manages 5.5 M acres of farmland (3 M in India) enriching 2.1 M farmers (1 M in India) across 46 countries. Targets to manage 500 M acres and scale 10X revenue per acre in the next 3-4 years.

Mark Kahn – Previously Executive Vice President at Godrej Agrovet, established Omnivore in 2012, which has to date invested in 20+ Agritech start-ups enhancing the profitability, sustainability, and resilience of Indian farmers.

Prashant Mehra – a rare combination of Farmer, Techie and Consultant (Mindtree UK & Europe), worked since 2011 on rural supply-chains, small farmer agriculture and waste management. He is the co-founder of Platform Commons Org which advocates and building an open integrated Agriculture platform, currently with 1.8 M users, 150 M transactions across 8 states. Bihar, AP & Kerala have moved to full scale roll out.

Nipun Mehrotra (moderator) - a Technology executive with 35 years of experience in India, Shanghai and Singapore, who till Apr '19 was Chief Digital Officer at IBM ISA. He is presently collaborating across Govt., innovators, industry and academia to apply the power of "Tech for Good" to solve several societal issues (e.g. in Agriculture, Health, etc).

Panel Observations.

The discussion brought out several newer themes, highlighting issues and suggesting solutions Here is a summary of the discussion with a focus on growing Indian AgriTech by 10X.

The panel felt that the current breed of Indian AgriTech, in general lacked depth of innovation, contributed partially by a rather superfluous understanding of Agricultural "on the ground" issues. Most of the ~500 AgriTech start-ups were led by "techie" founders with deep skills and experience in technology but inadequate experience or education on the issues confronting Agriculture.

This was also compounded by a relatively lower quality pool of talent emerging from the dozens of Agricultural universities, which were amongst the lowest choices for under graduates, hence the resultant talent pool was inadequate.

The outcome therefore was a surfeit of "copy & paste" of business models and experiences from other sectors e.g. retail or food delivery. Hence the over indulgence on building digital market places, price discovery, crops advisory, market and input aggregation etc – which were all good but, only up to a point. Deeper areas like agricultural biotech, synthetic biology to mention a few get minimal attention as do areas like mineral fortification which would have had cross sectoral impact of reducing malnutrition and systemic anaemia. Even within the realm of deep tech, newer techniques using synthetic aperture data and remote sensing, combined with AI don't have sufficient traction.

It was acknowledged that several Govt and public funded research organisations (eg ICAR) had done useful research in the past some of which could be licensed or used by start-ups to avoid them reinventing the wheel. While the research organisations are inclined to collaborate their "metrics of success" only focussed on the number of partnerships established, Vs any real economic value generated. Additionally it was felt that some of the research output had not been validated sufficiently through rigorous field trials. Several research departments also didn't remain abreast of the rapidly unfolding capabilities in deep tech and hence missed opportunities to leverage innovation and leap frog while problem solving.

Almost 50% of farmers were "financially excluded" – hence were unable to get even micro-credit needed for just-in-time requirements for fertilizer, pesticides, seeds etc. Hence even though several start-ups provided a lot of farm advisory and early warning for interventions needed, in the absence of credit there was limited ability to convert agricultural advisory into timely corrective action.

It was important to bear in mind that the farmer – certainly in India, but in general, around the world, didn't perceive too much value from technology driven solutions, largely due to the absence of established causality and the complex intermingling of factors around Agriculture, especially the role played by Govt policy. Regardless, it was pointed out that technology was crucial to solve several complex problems – both micro (with technology increasingly being able to provide useful advisory at the sub-acre local farm level) as well as macro (assisting policy formulation by aggregating data and insight at the state or national level across years).

The role of platforms was highlighted as a recommended approach to bring different communities together – leveraging their ability to integrate different data sources – public and private, thereby providing a holistic approach to as well as allowing all agricultural related organisations including Govt., start-ups, industry and academia to collaborate freely on data and function. The Agricultural platform can integrate data sources and applications such as - advisory on vegetation index, soil moisture, early pest warning, acreage sown by crop, yield patterns etc and hence improve insight at the micro as well as macro decision making.

While 8 states have so far experimented with the Agri stack, work done by Kerala, AP, Bihar was highlighted, since they have now moved beyond pilots to full scale commercial implementation. Their experience across 1.8 M farmers showed an average increase of income by 2-7 times, with the upper range achieved through additional value addition beyond base productivity.

Panel recommendations.

1) Enhance results or outcome focussed collaboration between organisations with deep agricultural knowledge (FPOs, Agricultural Universities, ICAR, ICRISAT etc) and the Tech ecosystem so that real problems can be researched, surfaced and targeted through innovation.

2) Indian Agriculture is one of the least digitized sectors and several policy level interventions (like sharing of IMD data, or digitizing ICRISAT maps) etc are needed.

3) Explore tech based alternates of farmer risk profiling (e.g. establishing a CIBIL score for farmers based on tech driven farm level data availability).

4) Lower cost of lending by exploring alternates (e.g. peer to peer) to overcome the reluctance of PSU banks and institutions to provide credit to small time farmers. Microfinance companies charge a much higher rate of interest

5) Promote using a comprehensive "Agriculture Platform" at the state and then national level, to improve integration of various types and sources of Agricultural data to allow composite decision making – across Govt, public research organisations and private sector including internationally. Leverage Niti Aayog towards this objective of encouraging building an integrated Agricultural ecosystem in India.

6) Establish clear and transparent rules on data ownership, data usage, and shared data monetisation in consultation with multi-stakeholder interest groups (State Governments, FPOs, Universities, Start-ups, Trade Associations".

7) Encourage more Agricultural university graduates to become entrepreneurs and maybe even collaborate with deep tech co-founders.