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Paradigm shift in agriculture



Thursday, 07 June 2018 | [KC Ravi](#)

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The need of the hour is to combine the strengths of the public and private sectors to bring tangible benefits to the farming community

The last four years have seen a number of announcements towards strengthening the foundations for accelerated agriculture growth and the Government's pledge of “doubling farmers’ income by 2022.” What is required now is to unleash the full potential of agriculture with a paradigm shift in public-private partnership and the spirit of cooperative federalism.

The growth tree of the agriculture ministry is indeed healthy and sprouts a new branch every now and then depicting yet another initiative to promote agriculture and farmers’ welfare. The announcements are striking the right notes in identifying basic issues of the farmers and announcing interventions like the soil health cards, insurance schemes, irrigation, credit, linking markets and mechanisation. The need of the hour is to combine the strengths of the public and private sector to bring tangible benefits to the farming community.

Uncertain climate will be the biggest threat to achieving progress in agriculture and is exerting tremendous pressure on farmers across the globe already. In between the cycle of floods and droughts, the farmers have had to contend with El Nino and issues of climate change. The more worrying aspect has been the tendency of farmers to switch crops in order to survive the season which disturbed the cropping pattern and balance. Uneven rainfall distribution is also affecting the cropping window of farmers.

Prime Minister Narendra Modi, speaking at the foundation day of Indian Council for Agricultural Research (ICAR) summarised the challenges that farmers face today in one phrase: “less land, less Time, More Productivity.” To combat the changing weather patterns, the farmers need to grow crops in less time. Good assortments in hybrids have reduced the harvesting cycle for a number of crops and has resulted in good yields and plant stands.

There are vegetable hybrids that can withstand climate changes and grow throughout the year in subtropical or temperate conditions. Vegetable hybrids like cauliflower, capsicum, hot pepper, tomato, sweet corn can withstand various stresses and extreme climate conditions, reducing the growing cycle by almost 10-15 days.

There are many innovative water-efficient technologies, drought-tolerant seeds, crop protection products, and optimised irrigation systems that can tackle the vagaries of weather. There are technologies that use moisture more efficiently to give higher yields on drought-stressed land. There are herbicides that reduce the need for ploughing, improving the soil's ability to absorb water, and protecting it against erosion and water run-off.

In fact the whole biotechnology debate also needs to be looked into in the context of climate change. The genetically modified (GM) technology, while introduced in crops, helps fight various stresses that affect growth. The herbicide tolerant technology addresses weeds that compete with the plant for sunlight, nutrients and water. The BT technology addresses pests that affect plant productivity. There are the others that address various climatic stresses like moisture, drought etc.

There is a tremendous opportunity for the private sector and the public sector to come together and leverage the advancements in research and development.

Scientists in ICAR and its institutes including Indian Agricultural Research Institute (IARI) can collaborate with the private sector to develop cutting-edge technologies in the field of water harvesting, resource conservation technologies, integrated water and nutrient management, micro-irrigation, integrated farming system models, including agro-forestry interventions, efficient cropping systems etc to enhance crop productivity in the country, including dry land areas.

There is also a need to look at the broad spectrum of technology adoption including biotechnology, not just from the point of food security but as a tool that is essential for the very survival of the farmers. Crop losses due to pests, weeds and diseases also need to be addressed by introducing the best kind of seeds and pesticides. Crop losses due to these reasons in India are assessed to be in the range of 10 per cent to 30 per cent annually.

Giving a strategic push to hybridisation in major crops like rice as well as vegetables with the right crop chemistry protocols would reduce the losses to a large extent. Here again, there are many opportunities for public and the private players to work together.

We are already faced with the situation where it is becoming difficult to motivate the existing farmers to continue farming and it is only going to become more difficult in future if we do not equip them with the requisite technologies to break away from the cycle of natural disasters. The public and the private sector need to to make available the entire tool-box from genetics to chemistry and other technologies for the farming community. The projected increase in world population over the next 40 years will put huge pressure on farmers to produce twice as much food from the same area of farmland and that also with less water. Now more than ever. yield-protecting and enhancing technologies



Saturday, 17 October 2020



The Government's plan to launch a nationwide irrigation network to ensure every field in every village gets water it needs for crops under the Prime Minister's Rural Irrigation Scheme along with the ambitious scheme for testing and raising the fertility of soil would address two of the most critical issues faced by farmers to increase productivity of major crops.

The proposed soil health card with crop-wise recommendations of nutrients/fertilizers required for farms, will make it possible for farmers to improve productivity by wisely using inputs. There are solutions that provide farmers productivity enhancements up to 30 per cent in important crops like rice, corn and vegetables just by following simple crop protection protocols and applying inputs at the right stages of the crop cycle.

It is more often not the quantity but the quality of inputs and more importantly the knowledge around usage that are key to not only protect crops from diseases but also improve productivity and the private sector can play a critical role in partnering with the Government in this effort.

What is required is to reduce the trust deficit between the Government and the private sector and also create avenues for more public-private partnerships through some strong policy directions. It is heartening to see the Government's intentions to bridge the gap between agriculture and innovation. The Prime Minister's emphasis to bring results of the laboratories to the farms is indeed going in the right direction.

The future of agriculture is dependent on the penetration of scale neutral technologies and solutions. The trend has already begun in some ways with those who remain in farming turning to newer methods of optimising the output on their farms including adopting newer technologies to save cost and time.

It would help if the Government comes up with good public-private partnership (PPP) models that would bring in more private players in the fray with absolutely the latest in farm mechanisation. The private players also have a fully integrated tool box from genetics with all the various parts of chemistry for tackling the various challenges in agriculture and to increase productivity. There is no silver bullet to the multifarious challenges that Indian agriculture faces. We need all kinds of technologies and solutions to overcome the challenges and increase the productivity and profitability of the farming community.

(The writer is President, Public Affairs Forum of India (PAFI). Views expressed are personal)

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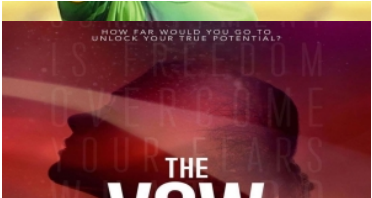
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