



AGROTECH AS MEDIUM OF SOCIAL INCLUSIVENESS: OPPORTUNITIES AND CHALLENGES

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Introduction:

The Indian economy is essentially rural, with around 55% of the population dependent for his or her livelihoods on agriculture and allied sectors.

On 15 August, 1945 Gross worth was superimposed. Indian farmers square measure at risk of impacts of global climate change, water insufficiency and land

degradation. Additionally, increasing fragmentation of holdings, extreme weather events, rising input prices and post-harvest losses create a vast challenge to sustaining agricultural growth. There has been sizable growth and alter within the analysis and extension system. However the key queries stay the same.

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The importance of agriculture cannot be exaggerated because it has a wider role in society at large. Agriculture is a very important sector of the Indian economy because it contributes to the overall gross domestic product and provides employment to over half of the population (GOI, 2011). Foodstuff production has increased from fifty-one million tones (MT) in 1950-51 to 250 MT throughout 2011-12; the best ever since national independence. The assembly of oilseeds (nine-major oilseed) has conjointly increased from five MT to twenty-eight MT throughout identical amount (GOI, 2011). This zoom has helped Indian agriculture mark its presence at the world level. Asian country stands among the highest 3 nations in terms of production of assorted agricultural commodities (GOI, 2011). Thus, agriculture has been seen as a supply of food, labor, and finance to produce a growing urban and industrial sector on that sustained growth in incomes can rely. Realizing this

transition depends on achieving increase in productivity that may check the food costs at the side of each industrial growth and impoverishment reduction. Following an awesome election success, Prime Minister Narendra Modi's new government contains a golden chance to bring forth historic reforms within the agricultural sector to enhance farmer livelihoods and national food security. The world affects the economic well-being of 0.5 the Indian population and therefore the access to cheap and wholesome food for all Indians. Basic reforms are able to do property and generally distributed agricultural growth that may boost India's gross domestic product, increase export earnings, facilitate conserve progressively scarce resources of land and water, and alter the additional orderly movement out of agriculture and into different productive sectors.

Modern agriculture is driven by continuous enhancements in digital tools and knowledge further as



collaborations among farmers and researchers across the general public and personal sectors. During the revolution within the Sixties, Asian country might bring home the bacon self-reliance in foodstuff production by exploitation trendy strategies of agriculture choose quality of seeds, correct irrigation, chemical fertilizers and pesticides. As time passed, additional technological advances appeared in agriculture. The tractor was introduced, followed by new tillage and harvest home instrumentation, irrigation and air seeding technology, all resulting in higher yields and improved quality of the food and fiber that was big. It is doable for farmers to use scientific knowledge and technology to enhance crop yields and keep themselves up-to-date with innovative strategies of farming.

Objectives:

- To study use of technology as catalyst for social inclusiveness in agricultural sector
- To assess the scope of using technology in agricultural sector.
- To identify challenges in implementation of agro tech tools
- To suggest measures for gainful implementation of agro tech tools in India

Scope and Opportunities of Agrotech:

1. Observance and dominant crop irrigation systems via smartphone:

Mobile technology is taking part in a crucial role in observance and dominant crop irrigation systems. With this contemporary technology, a farmer will manage his irrigation systems from a phone or pc rather than driving to every field. Wetness sensors within the ground are ready to communicate info regarding the amount of wetness gift at bound depths within the soil.

2. Ultrasounds for farm animal:

Ultrasound isn't just for checking on baby animals within the uterus. It can also be accustomed discover what quality of meat may well be found in an animal

before it goes to the market. The testing of deoxyribonucleic acid helps producers to spot animals with smart pedigrees and alternative fascinating qualities. This info also can be accustomed facilitate the farmer to enhance the standard of his herds.

3. Usage of mobile technology and cameras:

Some farmers and ranchers use apps like 'Foursquare' to stay tabs on staff. They conjointly place up cameras round the farm. Livestock stock managers are wiring up their barn feedlots and pastures with cameras that send pictures back to the central location like an workplace or data processor. They will keep a more in-depth eye on the animals after they are away or home for the night.

4. Crop Sensors:

Crop sensors facilitate apply fertilizers terribly } very effective manner, maximizing uptake. They sense however your crop is feeling and cut back the potential natural action and runoff into spring water. Rather than creating a prescription chemical map for a field before you exit to use it, crop sensors tell application instrumentality what quantity to use in real time. Optical sensors are ready to see what quantity chemical a plant might have, supported the number of sunshine mirrored back to the detector.

5. Tractors on Autopilot:

Thanks to GPS tractors, combines, sprayers and additional will accurately drive themselves through the sector. When the user has told the aboard ADP system however wide a path a given piece of apparatus can cowl he can drive a brief distance setting A & B points to create a line. Then the GPS system can have a track to follow and it extrapolates that line into parallel lines set apart by the dimension of the tool in use. These systems square measure capable of trailing sinusoidal lines moreover. The trailing system is tied to the tractor's steering, mechanically keeping it heading in the right direction liberating the operator from driving. This enables the



operator to stay a more in-depth eye on alternative things. storage is nice for tillage as a result of it removes humanerror from overlap, saving fuel and instrumentality hours. Trust American state once I tell you that when you beginning automobile trailing, you'll ne'er return manual steering.

6. Swath management and variable rate technology:

Building on GPS technology square measure swath management and variable Rate Technology VRT. This is often wherever steorage very begins to point out a come back on investment. Swath management is simply what it seems like. The farmer is dominant the scale of the swath a given piece of apparatus takes through the sector. This video may be a nice visual illustration of however swath management works. The savings return from exploitation fewer inputs like seed, fertilizer, herbicides, etc. Since the scale and shapes of fields square measure irregular you're guaranteed to overlap to some extent in each application. Due to GPS mapping the instrumentality within the field already is aware of wherever it's been. Swath management shuts off sections of the device because it enters the overlap space, saving the farmer from applying double the inputs on a similar piece of ground. VRT works in a very similar fashion. supported productionhistory Associate in Nourished soil tests a farmer will build a prescription GPS map for an input. By knowing what square measures of a field are most Associate in Nursing least productive the appliance rate of an input like plant food may be tailored to extend or decrease mechanically at the acceptable time. this soften a giant profit for farms. Rather than applying a group rate of plant food over the complete field (many times a high rate to assist those low manufacturing areas) Associate in Nursing operator will currently apply a rate handiest for a selected section of ground.

Challenges in implementing technology in agriculture:

1) Cost of Technology:

At present available technologies to be implemented have very high cost. Since majority of the farmers are from marginalized section, it is difficult for them to use such technologies.

2) Fragmented land holdings:

In India the land holding of farmer is fragmented in most of the states. It makes it difficult to use technology as it is more suitable and designed for large land holdings and capital intensive farming.

3) Reach of Technology :

Most of the tools using technology in agricultural sector require electricity and internet. In rural areas availability of continuous electricity and penetration of internet facility are main challenges.

4) Maintenance Cost:

The recurring maintenance cost may discourage farmers from using technology.

Research Methodology:

As many respondents had difficulty in understanding the language, researcher adopted interview method for collecting primary data. The questions were framed in such a manner that helps to identify need for use of technology, the level of awareness, willingness to use the technology and practical challenges in use of technology. Information was collected from 32 farmers in Palghar district using standard set of questions to maintain uniformity and homogeneity in responses.

Findings and Conclusion:

- 90% of the respondents feel that the capital cost and recurring cost of using technology is high and it is the most important concern in implementing technology in agricultural sector.
- 70% of the respondents expressed their opinion about use of technology having limited implication as the farming is dependent on monsoon.
- More than 50% respondents were skeptical about handling technological devices as it would be



additional work along with routine agricultural practices.

- More than 80% respondents shared that availability of power is irregular and high speed internet connectivity is also a challenge.

Suggestions and Recommendations:

- Union and State Government in collaboration should offer subsidies on technological devices to improve efficiency and productivity of agricultural sector resulting into improvement in financial position of farmers.
- For repairs and maintenance of the devices, locals should be trained for constant use of technological devices. It will also help in creating employment opportunities.
- Co – operative farming should be encouraged so as to bring ease in implementing technology in agriculture sector.
- Government should ensure availability of power and internet connectivity in remote areas so that marginalized farmers can take advantage of changing times.

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