Indian Agriculture and Farmers – Problems and Reforms

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Abstract: **Agriculture has historically been the backbone of India's economy, supporting the livelihood of the majority of its population. Once revered, the role of the farmer has diminished in social status due to modern economic pressures, societal neglect, and a lack of support. Many farmers now face discouragement, poverty, and even suicide due to crop failures and a shift in focus from eco-friendly to profit-driven, industrial farming methods. Despite these challenges, a few innovative farmers continue to adopt new techniques, showing resilience and selflessness by sharing their findings.**

Agriculture remains vital, contributing 16% to India's GDP and employing over half of the population. It provides the raw materials for several agro-based industries and plays a major role in exports. However, Indian agriculture faces numerous systemic challenges: subsistence farming, population pressure, low productivity, outdated techniques, rain dependency, lack of education and research outreach, and weak government policies. Problems such as low land fertility, high indebtedness, and the disinterest of youth further hinder agricultural progress.

To improve Indian agriculture, a balanced approach is needed—one that promotes eco-friendly, profitable practices, enhances education and research dissemination, ensures fair pricing and land reforms, and prioritizes infrastructural support. In recent years, the government has introduced a suite of initiatives including E-NAM, PMKSY, PKVY, PMFBY, PM-KISAN, and PM-Kisan Maan Dhan Yojana to address irrigation, insurance, sustainability, and farmer welfare. State-level programs like Telangana's Rythu Bandhu and nationwide farm mechanization efforts aim to enhance productivity and support smallholders.

Key words; **Agriculture, Indian economy, Farmers, Crop yield, Eco-friendly farming, Modern techniques, Population growth, Farmer suicides, Irrigation, Land fertility, Farm mechanization, Sustainable farming, Crop insurance, Farmer welfare, Agricultural challenges, Policy reforms.**

INTRODUCTION

In olden days, agricultural technique was eco-friendly but didn't yield high crop comparing now. Anyway, that is enough for those people as there was less population. Those farmers were seen as GOD but now it is in contrast. Only governments are respecting farmers and that too only for those belong to their state or country. Even, farmer's families do not give respect if they have low income or if their crop failed. Some parents resisting their children in choosing agriculture as their career field due to their disrespectful towards farmers but they do not understand that without farmer, it is impossible to survive in this world. It is horrible to see that even farmer do not prefer to see his son as farmer due to influence of this society. Now days, many farmers left their farming work and went to some nearby industries. Also, some committed suicide and the reason is that their crops are failed due to unavailable of water sources. There is another case also that some farmers who have few acres do some research on their own and finding new techniques so that they can achieve maximum crop yield. These farmers arrange private water sources and also earn more. These farmers are selfless as they also publish about their work with no charge. Anyway, some are eco-friendly and some not. If we focus deeply in it, day by day farmers are discouraging by this helpless society and we can understand that farmer's conditions are based on their experience and also on their determination. However, it shames to see those states of our country act as envy countries for lending their water sources for agriculture. In India, we are following many modern techniques to increase crop's yields. Either it is eco-friendly or not, we continue giving importance to improve the crop yield as to withstand the increasing population. Therefore, we lost the uniqueness of olden day's agriculture as these modern techniques reduce the strength of the crops and also reduce land's fertility. Anyway, these farming techniques are necessary as day-by-day farming lands are converting into apartments and factories. Actually, everything is happening in contrast as for increasing population, we must increase the agricultural land but instead we are decreasing it and that result in using modern techniques without

considering whether it is eco-friendly or not. And, these farming techniques give more profit only if we done more don't know to read. So, the awareness is lacking. Our government should appoint some persons to spread awareness about these profitable techniques to uneducated farmers. Some are non-eco-friendly but still we continue. We must understand that anything which is non-eco-friendly may be profitable for time being but not ever lasting. It may result in danger in future. Hence, it is better to follow profitable eco-friendly farming techniques than anything else for better future.

Importance of agriculture in Indian economy:

India is mainly an agricultural country. Agriculture is the most important occupation for most of the Indian families. In India, agriculture contributes about sixteen percent (16%) of total GDP and ten percent (10%) of total exports. Over 60 % of India's land area is arable making it the second largest country in terms of total arable land. Agricultural products of significant economic value include rice, wheat, potato, tomato, onion, mangoes, sugar-cane, beans, cotton, etc. Agriculture is the backbone of Indian economy. Though, with the growth of other sectors, the overall share of agriculture on GDP of the country has decreased. Still, Agriculture continues to play a dominant part in the overall economic scenario of India. Food is essential for life. We depend on agricultural outputs for our food requirements. India produces large quantity of food grains such as millets, cereals, pulses, etc. A major portion of the food-stuffs produced is consumed within the country. Our farmers work day and night to feed our population that counts over 1.21 billion. Besides agriculture with a commercial bias, subsistence agriculture with its emphasis on the production of food for the cultivator's family is widespread. Traditionally, Agriculture is followed as the simplest method of obtaining food for the family. Agriculture in India is more a 'way of life' then a 'mode of business. India exports excess food and agricultural products. A large proportion of India's export trade is based on the agricultural products, such as jute, tea, tobacco, coffee, spices, and sugar. It helps in increasing the foreign exchange. India is ranked seventh in terms of agricultural exports. In 2013, India exported agricultural products valuing around 39 billion dollars. Agriculture is the basic occupation for majority of main-workers in India. A large number of rural women are also engaged in agriculture. According to 2001 census, over 56.6% of the main workers in India are engaged in agricultural and allied activities. A number of industries are agro-based industries, such as jute, cotton, sugar, tobacco, etc. Raw materials for such industries are supplied from agricultural produce. Green revolution began in India with an objective to give greater emphasis on Agriculture. The era of Green revolution that began in 1960s witnessed significant increase in the production of food crops. The introduction of improved methods of agriculture and high yielding varieties (HYV) seeds, mainly wheat, had resulted into remarkable improvement in agricultural outputs.

Characteristics and Problems of Indian Agriculture:

As stated at the outset, Indian economy hinges on agriculture. The socioeconomic status of the people, the national polity and the gamut of life of the people is directly controlled by agriculture. The Indian agriculture, however, has its own characteristics.
Some of the important characteristics and problems of Indian agriculture have been described briefly in the following section:

1. Subsistent in Character: Despite eleven five-year plans, in greater parts of the country, Indian agriculture is subsistent in character. The cultivators and farmers grow crops mainly for the family consumption. It is only in the controlled irrigated parts of the country like Punjab, Haryana, western Uttar Pradesh, and Kaveri delta where agriculture has become an agri-business or is market oriented.

2. Heavy Pressure of Population: The Indian agriculture is characterised by heavy pressure of population. About 70 per cent of the total population of the country is directly or indirectly dependent on agriculture. At present, the per capita agricultural land is only about 0.10 hectare as against 0.30 hectare in 1951. The world average of per head availability of agricultural land is about 4.5 hectares. The fast growth of population industrialization and urbanization are putting enormous pressure on arable land.

3. Predominance of Food Grains: In both the Kharif (summer) and the rabi (winter) seasons, grain crops occupy the greater proportion of the cropped area. In fact, rice, maize, millets, bajra, ragi, and pulses are the dominant crops in the kharif season, and wheat, gram and barley occupy over three-fourth of the total cropped area in the rabi season.

4. Mixed Cropping: In the rain-fed areas of the country, mixed cropping is a common practice. The

farmers mix millets, maize and pulses in the kharifseason and wheat, gram and barley in the rabi season. In the areas of Jhuming (shifting cultivation), ten to sixteen crops are mixed and sown in the same field. The rationale behind mixing of crops is to get good agricultural return. In case the monsoon is good, the rice crop will give better production and in case of failure of monsoon, the less water requiring crops like maize, millets, bajra and pulses will give good harvest. Mixed cropping is a characteristic of subsistent agriculture.

5. High Percentage of the Reporting Area under Cultivation: In India, about 55 per cent of the total reporting area is under cultivation of crops and pastures. This is much higher when compared with about 4 per cent in Canada, 12 per cent in China, 15 per cent in Japan, and 16 per cent in USA.

6. Limited Intensive Agriculture: In India, only about one-third of the total cropped area is under double and multiple cropping. Increase in the double cropped area is difficult unless heavy investment is made in development of canal and tube-well irrigation.

7. Primitive Technology: Most of the farmers of the country, especially in the rainfed areas, use draught animals (bullocks, male buffaloes and camels) for ploughing and other agricultural operations. The health and efficiency of draught animals is low which often retards the timely operations of sowing, weeding, and harvesting.

8. Indian Agriculture is Labour Intensive: In India, agriculture is a labour based enterprise in which most of the agricultural operations, like ploughing, levelling, sowing, weeding, spraying, sprinkling, harvesting, and threshing are carried on mainly by human hands. The use of machinery is still confined only to the rich fainters of Punjab, Haryana, western Uttar Pradesh, plains of Uttarakhand, Bihar, Madhya Pradesh, Gujarat, and Maharashtra.

9. Rain-fed Agriculture: In the greater parts (over 56%) of the country, agriculture is largely dependent on rainfall, especially the summer monsoon. Unfortunately, the high which affects the agricultural return adversely. Only about 55 per cent of the total cropped area is under irrigation in which the farmers are more confident about their agricultural returns even at the failure of monsoon, as it happened in 2009.

10. Less Area under Leguminous and Fodder Crops: The nitrogen fixing crops like pulses are getting less area under their cultivation. Consequently, the natural fertility of the soil is depleting and the soils are losing their resilience characteristics. Moreover, less than 4 per cent of the cropped area is under fodder crops. This, together with lack of good pastures, has detrimental effect over the development of dairy farming and milk production. India has the largest number of cattle in the world, but it occupies an insignificant place in respect of cattle products in the world.

11. Tradition Bound: By and large, the Indian agriculture is tradition bound. Established several centuries ago, the structures of a self-contained rural economy were founded in caste-derived occupational land tenures, made complex by absentee and parasitic landlords. These institutional factors and tradition bound institutions are a major obstacle in the path of innovations and modernisation of agriculture.

12. Low Productivity: One of the main problems of Indian agriculture is its low productivity. In comparison to the other agricultural countries, the Indian agricultural yields are among the lowest in the world (Table 9.4 and Table 9.5). The main cause of low yield per hectare is the low fertility of soil and less care to replenish it through green manure, fertilisers, fallowing, and scientific rotation of crops. The consumption pattern of chemical fertilizers has been shown in Fig. 9.4. It may be seen from this figure that Punjab with 175 Kg/ha is the leading consumer of chemical fertilisers followed by Haryana 160 Kg/ha. Uttar Pradesh, Andhra Pradesh, Tamil-Nadu and West-Bengal. In general, the fertiliser consumption level is very low in the areas of dry farming.

13. Government Policy: After the First Five Year Plan, Indian agriculture got a step-motherly treatment. The farming community has been ignored, while there has been more emphasis on industrialisation and urbanisation. The growth rate of agriculture is only about 2.5 per cent, while the overall growth rate of the country is about 9 per cent (2010). The farmers are not getting remunerative prices, most of them are under debts and in several parts of the country, farmers are committing suicides. This dismal picture is the result of continuous careless agricultural land use planning. Misemphasis has however, been laid on the rural and agricultural development in the Eleven Five Year Plan to remove the rural, urban inequality. Creation of 580 lakh jobs

has also been proposed in this plan to overcome the problem of unemployment and to check the rural-urban migration. The real challenge for the government is in trying to boost food output at, home, and increase investment in rural and agricultural infrastructure for the same, while at the same time not letting its guard down on fiscal prudence or inflation management. The severe drought of 2009 over greater part of the country has increased the miseries of the farmers, which is a set-back in the revival of Indian economy.

14. Lack of Definite Agricultural Land Use Policy: In the absence of a definite land use policy, the farmers grow crops according to their convenience. This sometimes leads to excess of production and sometimes scarcity. Many a times the farmers have to burn their sugarcane crop and often get less remunerative price of vegetables (onion, and other vegetables).

15. Low Status of Agriculture in the Society: In greater parts of India, agriculture and lack of enthusiasm among most of the farmers. The younger generation of farmers prefer a petty government job to agriculture. Moreover, rich farmers invest their agricultural profits in non-agricultural sectors which are more remunerative. In fact, there is a mass exodus of people from rural to urban areas in search of lucrative jobs. There is a constant flow of human and material resources from villages to the cities. This has led to fast growth of urban centres which are infested with slums, ghettoes, and shanty colonies.

16. Land Tenancy: In many parts of the country, there are absentee landlords and the tillers are not having the rights on agricultural land. The big landlords who own big farm houses are rich urbanites. The tillers and share croppers who actually cultivate the land of absentee land lords are not much interested_ inthe development, proper management, utilisation of agricultural land, and modernisation of agriculture. This system leads to lack of interest on the part of the tiller and consequently, the per unit yield of most of the crops is low.

17. Poverty and Indebtedness of the Farmers: Although cultivators indebtedness is universal in subsistent farming, its impact is perhaps nowhere as crushing as in India. Unfortunately, over 85 per cent of all the cultivating families are under debt. It is because of heavy indebtedness that several thousand farmers in Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra, Orissa, Gujarat, Punjab, and Uttar Pradesh have committed suicide during the last ten years. The small and marginal farmers are still dependent on moneylenders who charge exorbitant interest on loans (25 to 40 per cent per annum). In the case of non-payment, the money-lenders grab their mortgage property making them pauper. Some special provisions have been made in the draft of the Eleventh Five Year Plan to overcome the problem of farmers indebtedness. A scheme of debt waiving for small and marginal farmers and debt relief for other farmers was announced by the government in the Union Budget of 2008-09.

18. Inadequacy of Extension Service: For the diffusion of agricultural innovations both in the irrigated and rain-fed areas, a team of skilled village level workers is required. There is much to be done in this area. Training of workers and their dedication can help the tradition bound farmers to modernise their agriculture.

19. Inadequate Agricultural Research and Education, Training, and Extension: Though enough progress has been made in the field of agricultural research, there is no coordination between the farm and research laboratories in the different agro-climatic regions of the country. Hence, gains of new agricultural researches are not reaching the common cultivators, especially the marginal and small farmers. Very little attention is being paid for educating and training farmers for the adoption of new agricultural innovations and techniques to increase their agricultural production.

20. Other Characteristics and Problems: There are numerous other problems also which are affecting the agricultural production and rural economy and society adversely. For example, unscientific methods of agriculture, inadequate irrigation facilities, less use of chemical fertilisers, insecticides, pesticides, less remunerative prices of agricultural products, poverty, hunger, and malnutrition of farmers and lack of infrastructural facilities like roads, water, irrigation, electricity, credit, banking, and crop-insurance.

Ways to improve Indian agriculture;

The Green Revolution (1960s and 1970s)

The post-independence era marked the beginning of significant agricultural reforms. The Green Revolution, initiated in the late 1960s, aimed at increasing agricultural productivity through the introduction of high-yield crop varieties, modern farming techniques, and irrigation facilities. It

succeeded in transforming India's food-deficient status into a self-sufficient nation. However, it also led to environmental concerns and regional disparities.

Land Reforms

The early years after independence saw the government's efforts to redistribute land through land ceiling laws, aimed at breaking down the feudal land ownership system. Though noble in intent, the implementation was patchy, and the impact was varied across different states.

Market Reforms (1990s)

The liberalization of the Indian economy in the 1990s led to significant changes in agricultural policies. Export barriers were removed, and farmers were encouraged to grow cash crops. While this opened up new opportunities, it also exposed small farmers to global price volatility.

Technological Advancements

Advancements in technology brought about new avenues in agriculture. The introduction of genetically modified crops, modern machinery, and digital platforms for information dissemination are examples of technological reforms that continue to shape Indian agriculture.

Most Recent Agricultural sector reforms in India;

E-NAM (Electronic National Agriculture Market)

E-NAM (Electronic National Agriculture Market) is a pan-India electronic trading platform for agricultural commodities. It was launched by the Government of India in 2016 and is operated by the National Agricultural Cooperative Marketing Federation of India (NAFED). E-NAM provides a single platform for farmers to sell their produce to buyers from all over the country. This helps farmers to get a better price for their produce and also helps to reduce the risk of price fluctuations. E-NAM also provides farmers with access to a wider range of buyers, which can help them to increase their sales.

Pradhan Mantri Krishi Sinchai Yojana (PMKSY)

The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) is a central sector scheme launched in 2015 with a vision to provide secure and timely irrigation to 100 million hectares of agricultural land by 2024. The scheme aims to achieve this through a combination of measures, including:

- Construction of new canals and dams
- Renovation and modernization of existing canals and dams
- Promotion of micro-irrigation
- Groundwater recharge
- Capacity building of farmers

Paramparagat Krishi Vikas Yojana (PKVY)

The Paramparagat Krishi Vikas Yojana (PKVY) is a central sector scheme launched in 2007 with a vision to promote traditional agriculture and enhance farmers' income. The scheme provides farmers with training, inputs, and assured purchase guarantee for traditional agriculture.

Under the PKVY, the government provides farmers with training on:

- Traditional agricultural methods and practices
- Use of inputs for traditional agriculture
- Information about institutions that provide training in traditional agriculture

The government also provides farmers with inputs for traditional agriculture, such as:

- Seeds
- Fertilizers
- Pesticides

Pradhan Mantri Fasal Bima Yojana (PMFBY)

Pradhan Mantri Fasal Bima Yojana (PMFBY) is a crop insurance scheme launched by the Government of India in 2016. The scheme provides insurance coverage to farmers against crop losses due to natural disasters, such as drought, flood, hailstorm, and pest infestation.

The scheme is mandatory for all farmers who cultivate notified crops in notified areas. The premium for the scheme is shared between the government and the farmers. The government bears 50% of the premium for small and marginal farmers and 25% of the premium for other farmers.

Here are some of the key features of the PMFBY:

- The scheme is mandatory for all farmers who cultivate notified crops in notified areas.
- The premium for the scheme is shared between the government and the farmers.
- Farmers are insured against crop losses up to 100% of the insured value.
- Farmers need to report crop losses to the insurance company within 30 days of the loss.

- The insurance company will then assess the loss and pay the farmer the insured amount.

The PMFBY is a significant step forward in the government's efforts to provide financial security to farmers. The scheme is expected to play a major role in reducing the risk of crop losses and improving the income of farmers.

PM-KISAN (Kisan Samman Nidhi) Yojana

The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme is a government of India scheme that provides financial assistance of □6,000 per year to eligible small and marginal farmers, in three equal instalments of □2,000 each. The scheme was launched on February 24, 2019, and is expected to benefit about 125 million farmers.

To be eligible for the scheme, a farmer must:

- Be an Indian citizen.
- Own cultivable land.
- The land holding should not exceed 2 hectares.
- The annual income of the farmer's family should not exceed □2 lakh.

The benefits of the PM-KISAN scheme are:

- It will help to increase the income of farmers.
- It will help farmers to grow and sell their crops.
- It will help farmers to become self-reliant.
- It will help to reduce poverty among farmers.

The PM-KISAN scheme is a significant welfare scheme that will help to improve the lives of farmers by providing them with financial assistance.

PM-KISAN Maan Dhan Yojana

The Pradhan Mantri Kisan Maan Dhan Yojana (PM-Kisan-MKY) is a pension scheme for farmers in India. It was launched by Prime Minister Narendra Modi on 15 August 2019. The scheme is aimed at providing a monthly pension of Rs.3,000 to farmers who are at least 18 years old and have less than 2 hectares of land. To be eligible for the scheme, farmers must have a Jan Dhan account and aadhaar card.

The scheme is funded by the central government and the state governments. The central government will contribute Rs.2,000 per month to the pension fund, while the state governments will contribute Rs.1,000 per month. The pension will be paid to farmers on a monthly basis.

Caution for MSPs: Cautioning that the instrument of minimum support price (MSP) should not cause distortions in market signals, the paper suggests that India should use a combination of two instruments, namely procurement and price deficiency payment, to pay MSP to farmers.

Kisan Credit Card (KCC): The Government has extended the facility of KCC to the farmers practicing animal husbandry and fisheries-related activities.

Rythu Bandhu Scheme (AISS): Telangana Government has proposed a new scheme for providing investment support to Agriculture and Horticulture crops by way of a grant @ Rs.5000/- per Acre per Farmer in each season (Kharif & Rabi) for purchase of inputs like Seeds, Fertilizers, Pesticides, towards Labour and other Investments in the field operations of farmers choice for the crop season.

Farm Mechanization Mechanization ;of agriculture will help in increasing the productivity and reduce the cost of cultivation and also enable the farmer to complete farming operations in time. Farm mechanization in the State is accentuated by the shortage in agriculture labour due to increased migration of rural workers to urban areas. Mechanization possibility is strongly influenced by the farm size, cost of farm labour, machines and energy. However, most of the farming is carried out on small holdings in the State, farming system continues to utilize manual power, animal power and tractor power.

Challenges of agricultural reforms in India

The challenges of agricultural reforms in India include:

- Political will: Agricultural reforms often require a strong political will to implement them. This is because they can be controversial and can displace farmers or harm the environment.
- Capacity of the agricultural sector: Agricultural reforms also require the capacity of the agricultural sector to adapt to change. This means that farmers need to be able to adopt new technologies and practices, and that the agricultural sector needs to be able to manage the risks associated with change.
- External factors: Agricultural reforms can also be affected by external factors such as weather conditions, crop diseases, and fluctuations in market prices.

CONCLUSION

The future of agricultural reforms in India is uncertain, but the reforms have the potential to make the agricultural sector more competitive and efficient. If the reforms are implemented successfully, they will benefit farmers, consumers, and the economy as a whole. Agricultural reforms in India have evolved significantly since independence, with each phase addressing the pressing needs of the time—from achieving food security to improving farmer welfare and sustainability. The Green Revolution laid the foundation for self-sufficiency, while subsequent reforms introduced market liberalization, technological advancements, and targeted welfare schemes. Recent initiatives like E-NAM, PMKSY, PMFBY, and PM-KISAN reflect a shift toward a more holistic and inclusive approach to agricultural development.

However, the sector continues to face critical challenges such as uneven policy implementation, limited access to technology, market volatility, and environmental degradation. Addressing these issues requires a balanced strategy that combines traditional knowledge with modern techniques, strengthens institutional support, and ensures the active participation of all stakeholders.

If implemented effectively, these reforms can transform Indian agriculture into a more competitive, resilient, and sustainable sector—capable of ensuring food security, increasing farmer incomes, and supporting rural development in the years to come.

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