# Role and Trend of Agricultural Finance Institutions in the Inclusive Growth of Farmers in Rural India

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## ABSTRACT

**Purpose:** *The study is to evaluate the development of agricultural credit in India, exploration of the agricultural development and also to examine the various policies implemented by the Government of India. The paper emphasizes on the development in agriculture finances, new methods, techniques and technologies with a focus on how they lead to improved agricultural growth and greater financial inclusion.*
**Design/Methodology/Approach:** *The study is grounded on secondary data compiled from different journals, web sites and related information from newspapers, annual reports of NABARD and RBI.*
**Findings:** *The study has discovered that, informal credit has decreased as a percentage of total debt, while institutional credit to agriculture has exaggerated over time as a result of institutional agencies volunteering into rural areas, nationalization of foremost commercial banks and the establishment of regional rural banks through Reserve Bank of India initiatives.*
**Originality/Value:** *This study is unusual in that it attempts to trace the agricultural financial institution in India, as well as the numerous agricultural policies that have been enacted as a result of agricultural finance.*
**Paper Type:** *Case Study*
**Keywords:** Agriculture, Financing Institutions, Development, Technology, PESTLE Analysis

## 1. INTRODUCTION :

The agriculture sector is an important contributor to the prosperity of a nation. It plays a pivotal role in Indian society's economic life. Agriculture is responsible for one-third of India's national wealth and also sector accounted for 60% of all exports, whether directly or indirectly [1]. It employs 67% of total employment. It is key to economic policy and strategy, as well as providing several services to the manufacturing and other service sectors [2]. Due to the financial requirements of the agricultural industry, relatively few farmers would have their own cash to engage in agriculture. As a result, there is a need to give credit to all farmers who require it. [3]. India's existing fiscal status in the farming sector. The agriculture sector in India is plagued by vulnerability as a consequence of various related challenges. India's booming population and excessive reliance on farming, the prevalence of slight and trivial farmland, low bargaining power due because of less yield, diverse agricultural crop diseases, evolving weather conditions, inadequate irrigation systems, and non - availability of power are amongst the elements which have been impacting the agricultural production [3][4]. Agriculture is impacted by the irregular pattern of market forces. Inadequate storage capabilities result in the loss of commodities, leading to financial loss. For a long period of time, India's agriculture has plagued with a dearth of sufficient warehouses [4][5]. Agricultural product is lost every year owing to lack of significant development of new warehouses and the enhancement of current ones. Institutional bodies like RBI, NABARD, Co-operative banks, etc., as well as dimensional operators such as money lenders, dealers, etc., and the government are all part of India's finance industry [6]. Farmers are granted fiscal credits by financial institutions and the governments to compensate for actions such as loan repayment, seeding and fertilizer expenditures, and so forth. Various state legislatures have their own finance plans, such

as free electricity supply programmes for farmers, such as in Karnataka, and tangible benefit transfers between states, among other things [7]. Money lenders and landlords are instances of non-financing sources. Traders, commission agents, and other agricultural professions abound as well. One big concern with this source information is the financial pitfall that farm owners get through after borrowing funds from them [8]. Money lenders, tenants, and others increase the interest rate to farm owners, and since they are motivated by profit, they ignore challenges such as irregular monsoon and other dimensions that reduce agricultural output [7][8]. As a consequence, in years when crop yields are meager, peasants are often reluctant to meet their obligations and fall into a never debit cycle. Debts are accumulated and passed down through generations as a result of this [9]. Farmers' economic fundamentals deteriorate as a direct consequence, and in the worst-case scenario, they are forced to commit themselves [9][10]. Foreign Direct Investments (FDI) also help to boost Indian agriculture. FOB's proportion in the farming sector has risen steadily throughout time. Between April 2000 and March 2020, the Indian food processing sector drew a total of US$ 9.98 billion in foreign direct investment (FDD) equity inflows, according to the Department for Promotion of Industry and Internal Trade (DPIIT) [10].

## 2. RELATED WORKS :

Agriculture is the integral part of the Indian economy, so it's no wonder that banking institutions are lending money to farmers all around the nation [11]. The financial institution is collaborating with the Indian government to promote the agriculture industry. It is recognized with a number of creative programmes that have greatly benefitted farmers across the country [12]. Below Table 1 contains the contribution by different scholars for Agriculture finance.

**Table 1:** Contribution by different scholars for Agriculture finance institutions

| Sl. No. | Area | Contribution | Authors |
|---|---|---|---|
| 1. | Financial Inclusion | This paper examines few of the fundamental ideas behind financial inclusion, such as financial institutions accessibility, internet banking, and financial management, as well as platforms including healthcare coverage, farming subsidies, agricultural lending, micro business financing, and cooperative societies. It then explores a variety of factual and structural investigations on key aspects of financial inclusivity in emerging regions. The survey then goes through numerous recent studies backed by the International Growth Centre for India that deal with these precise determinants of financial inclusiveness. | Mbutor & Uba (2013) [13] |
| 2. | Credit obtained by rural famers | The research study was conducted using a pre-designed survey method that was sent to Microfinance Institutions financing recipients. The key determining variables impacting the functioning of Credit Institutions in Kogi State were investigated through statistical analysis and a four-point Likert scale. To avert low output and subsequent conversion of the funding to those other usage, authorized payments must be disbursed to farm owners on a periodic manner. Using MBFs' flexibility to give credit in the dearth of securities might assist farmers gain access to funding. | Matthew, A. (2013) [14] |
| 3. | Government Policies | There is a divergence of opinion on distinctive hurdles to financial inclusion, as well as measures taken to address them. The time and financial | Aggarwal & Klapper (2013) [15] |

| | | | |
|---|---|---|---|
| | | expenditures of creating and managing financial transactions, including the expenses of fulfilling paperwork standards that might be virtually endless unless the needed evidence is not available, were amongst the hurdles that highlights. It analyzes methods to reduce the charges, which might include legislative amendments, increased use of digital innovation procedures, institutional advancements like the employment of banking advisors, or a combination of factors. | |
| 4. | Challenges and Opportunities | The importance of small-scale agriculture in India is examined in this study, as well as the problems it faces. It covers trends in Agriculture trends, agricultural diversification, and small-scale involvement Sector, small-scale effectiveness, connecting local manufacturers with marketplaces, which include the production chain, the contribution of local suppliers in improving livelihoods and creating new jobs, various policies and infrastructural development for small-scale producers, problems and potential offerings for small-scale agriculture, which include information requirements. It also offers other nations with insights learned from India's experience with small-scale farming. | Mahendra Dev, S. (2014) [16] |
| 5. | Agriculture Credit | The topic of agro-based finance in India was examined, and it was discovered that lending to the agricultural industry is still insufficient. It was discovered that banks are unwilling to deliver loans to small-scale farmers for a variety of reasons. The research highlights the issue of farming indebtedness, as well as provincial government efforts to alleviate debt and interest burdens by providing interest refunds and interest on prompt payback. The study found that while efforts were undertaken to persuade peasants to retain in the banking process and prevent resorting to money-lenders, the majority of the farmers encompassed by the banking system did not stimulate the growth of these initiatives. | Pooja, G. (2015) [17] |
| 6. | Role of banking in financial inclusion | The purpose of this study is to determine the connections among agricultural banking and overall agriculture production at the federal level. A simplified correlation model was constructed to help with the survey. The findings indicated that in Bangladesh, there is a substantial link between agricultural banking and agricultural production. It is indeed remarkable that the banking segment's loans are aiding Bangladesh achieve greater financial inclusion. The notion is relevant to emerging countries looking for methods to achieve more inclusive and sustainable growth. Thus, it emphasizes the relevance of governments' | Sarker., et al. (2015) [18] |

| | | | |
|---|---|---|---|
| | | responsibilities in facilitating expanded financial access by establishing a conducive environment. | |
| 7. | Problems of Agricultural Credit | Credit is an essential contribution for agricultural growth since it allows farm owners to finance new investments and acquire emerging technology, as well as manufacturing and sales operations. It demonstrates that growers have access to short-term loan for growing crops and medium or long-term funding for capital growth in agribusiness. It demonstrates that, with the monsoon's periodic breakdown and the usual vagaries of cultivating, rural indebtedness has always been a significant and enduring feature of Indian agricultural production. According to the results, a higher percentage of people falls to the lowest strata, which own the majority of farmland but are given relatively lesser credit. | Ijioma & Osondu (2015) [19] |
| 8. | Challenge for Banking Sector | The glitches confronted by farmers in receiving agricultural finance. According to the findings, policymakers could streamline the agriculture loan application process, lower borrowing rates for farming community, and address the issue of core banking unwillingness to cooperate. It implies that by raising information of the bank's recovery procedure, rural producers' anxiety of the process should be lessened and farm owners have inadequate understanding of agricultural financing. | Dupas, P., et al (2016) [20] |
| 9. | Agriculture development | The impoverished in emerging countries confront obstacles that impede their possibilities and deteriorate their living situations. To be comprehensive, progress must assist all aspects of the economic system while eliminating the obstacles encountered by the needy and weaker sections of the society, as well as guaranteeing equal opportunity for all economical players. This study investigates the role of financial inclusion and social sectors funding in the regional livelihoods in supporting agricultural productivity and inclusionary development in India, and extrapolates using a simulated modelling approach. It also provides policy recommendations in this sector. | Choudhury, S. (2018) [21] |
| 10. | Financial Institutions' services | This paper explores the services provided by the organized financial institution to the farmers and describes the limited services available to them in Tamil Nadu. Farmers are financed in a variety of ways by a variety of sectors and they are given financial assistance by banking institutions to avoid quitting agriculture. The research highlights the financial institutions' services to farmers in Tamil Nadu, as well as the state's many initiatives for farmers. | Arun & Padmanabhan (2019) [22] |

## 3. RESEARCH GAP :

It is identified an apparent evidence gap in research concerning the analysis towards farmers inclusive growth with agriculture financial institution. Previous study has addressed different aspects of agriculture financial institutions, farmer's glitches towards credit systems, and agricultural developments.

## 4. RESEARCH AGENDA :

The focus of the program is to investigate the growth of agricultural credit in India, as well as sustainable agriculture and the policy measures undertaken by the Indian government. The analysis focuses on the design of farming finance, as well as alternative insights, and technology, with an emphasis on how they contribute to greater agricultural productivity and inclusive growth.

## 5. OBJECTIVES OF THE STUDY :

The following are the objectives of the study:

1. To study the role of financial institution in agriculture.
2. To examine the development and inclusive growth of farmers.
3. To analyze the various policies implemented by the Government of India.
4. To study the PESTLE analysis on agriculture sector.
5. To investigate the methods and technologies adopted by agricultural sector.

## 6. RESEARCH METHODOLOGY :

This paper is a study on secondary data gathered from several agricultural finance sources, such as research papers, journal articles, and journal papers by searching for relevant key terms in Google Scholar, pertinent websites and furthermore information's from the reports of Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD).

## 7. ROLE OF FINANCIAL INSTITUTION IN AGRICULTURE :

Following are the roles of financial institution in agriculture:

**Financial Institutions for Agriculture**

Institutional credit was designed to serve a key aspect in India's agricultural growth. The dispensing of loans to agriculture is handled by a wide number of institutional bodies [23]. Money lenders' continued presence in the regional lending market, on the other hand, is a key source of worry. In this perspective, the current report looks at the effectiveness of rural financial lines and evaluated the factors that lead to greater usage of bank financing among farm households in India [24].

**Government:**

Short-term and long-term loans are available from government-owned institutions. These funding are commonly referred to as Taccavi loans, and they are typically extended during catastrophic events. The interest rate is modest, and it is not a significant component of rural financing [25].

**Commercial Banks:**

Commercial banks were primarily confined to metropolitan regions, servicing primarily trade, commerce, and industry. The hazardous character of farming, owing to the significant reliance on the downpours, unstructured nature, and frugal strategy, was emphasized by commercial banks lack of engagement in rural financing [25][26]. They were compelled to intervene in agricultural lending by nationalization of banks in 1969, and they are now the dominant contributor of corporate agricultural credit [26].

**Microfinancing:**

Self-help groups (SHGs) have been more popular in recent years as a source of microfinance. SHGs are groups of rural impoverished people who volunteer to create a union in order to alleviate their own poverty. They concede to set aside money on a monthly basis and invest it in a collective fund called the Group reservoir [27]. Group members commit to include this communal resource and any other extra funds received as a unit in via a prevalent administration to good use. An SHG can create a Savings Bank account with the local Commercial or Regional Rural Bank or a Cooperative Bank as shortly as it is founded and a few assembly summits have taken place. This is necessary in order to safeguard the SHG's savings and other profits, as well as to enhance accountability of its transaction data [28].

**Cooperative Credit Societies:**

The first Cooperative Credit Societies Act was approved by the government in 1904, forming part of the cooperative revolution in India. Following the recommendations of the All-India Rural Credit Survey Committee (1951), the Government of India soon after independence believed that cooperatives are the only other way to encourage agricultural credit and rural enlargement [29]. As a result, cooperatives have garnered greater assistance in the loanable funds from the Reserve Bank of India as part of its lending strategy, as well as large-scale development and shoring up aid from the Central and State Governments. Cooperatives were used to channel several initiatives including incentives and privileges for the poor [30].

**Regional Rural Bank:**

It plays a unique role in the multi-agency technique to providing financial assistance to agriculture. They are commercial banks that are state-sponsored, geographically based, and focused on rural areas. With the local intricacies in consideration, an attempt has been prepared to incorporate commercial banking in the broader strategy drives toward communal banking [31]. The necessity for a stable government system for facilitating rural credit led to the formation of the RRBs. They were expected to grow into sophisticated rural financial institutions that provided loans to small and marginal farmers, farm laborers, craftsmen, and small business owners in order to promote the rural economy. In India, regional rural banks have surpassed each part of the country and lent a nudge in the right direction in the country's development. The relevance of rural funding in a country's economic growth cannot be overstated [32].

**NABARD:**

In India, agricultural financial institutions were established with the intention of funding indigent farmers and equipping them with the tools they need to improve their farming efficiency. NABARD was established as a result in 1982. As a corollary, it was formed as an apex bank to assist and develop India's agriculture sector [33]. NABARD's current headquarters are in Mumbai, Maharashtra, and the bank's chairman is Dr. G.R. Chintala. The National Bank for Agriculture and Rural Development (NBARD) is regarded as a growth bank. The committee for assessment procedures for institutional financing for regional development and agriculture came up with the idea for the bank, which they endorsed. Dr. B. Sivaraman presided over the proceedings [34]. Furthermore, the fundamental goal of founding and constructing the NABARD was to improve India's rural sector by expanding credit flow, hence elevating the agricultural and rural non farming sectors. The Reserve Bank of India owns 0.4 percent of NABARD, while the Indian government owns 96.4 percent. In addition, NABARD is working to build a policy on financial inclusion [33][34]. It is also a member of the financial inclusion alliance. NABARD has taken over three banks in India's agriculture sector. Rural Planning and Credit Cell (RPCC), Agricultural Credit Department (ACD), and Agricultural Refinance and Development Corporation (ARDC) are all acronyms for the same thing. Previously, these institutions were responsible for the growth of India's farming sector [34].

**Functions of NABARD:**

NABARD was founded as a development agency to carry out the following characteristics:

1. To operate as a pinnacle financing agency for institutions that provide production and investment loans in order to promote diverse rural development activities;
2. To undertake steps to strengthen institutions in order to improve the rural credit system's dynamic capabilities, such as supervising, drafting rehabilitation plans, reforming financial institution, and personnel training;
3. To integrate the remote cash flows of all institutions involved in the implementation work on the ground, as well as to maintain cordial relations with the Indian government, state legislatures, the Reserve Bank, and other national level agencies related to policy implementation;
4. To monitor and evaluate projects securitized by it [35][36].
5. The National Bank for Agriculture and Rural Development (NABARD) offers first attention to initiatives that are part of the Integrated Rural Development Programme (IRDP).
6. It offers for IRDP accounts to be refinanced in order to allocate the greatest amount of funds to the Integrated Rural Development Program's alleviating poverty projects.
7. NABARD also provides recommendations for the advancement of community events through its initiatives, as well as 100% refinancing assistance.

8. It involves establishing links between Self-Help Groups in rural regions that are created by non-profit organizations for the poor and needy.
9. It refinances all ventures under the National Watershed Development Programme and the National Mission of Wasteland Development to the full degree possible.
10. It also comprises a series of District Focused Monitoring Studies, whereby an analysis is undertaken for a cross - sectional area of initiatives authorized in a district to banking institutions to determine their progress and manage the restrictions in their execution, as well as take necessary measures to fix those [36].
11. It also promotes volunteer initiatives like Vikas Vahini, which help disadvantaged farmers get financing and participate in implementation phases.
12. It also examines and oversees cooperative banks and rural development banks on a regular basis to ensure the growth of rural finance and the welfare of farmers.
13. NABARAD also advises the RBI on RRB and cooperative bank licensing.
14. NABARD assists in the training and development of workers from a variety of different financial institutions that deal with credit allocation.
15. It also manages agriculture and rural development projects around the country.
16. It is involved in cooperative bank and RRB rules, as well as managing their workforce planning through IBPS CWEs held across the nation [36][37].

**Role of NABARD:**

Following are the roles of NABARD:

1. It is an elite entity with the authority to cope with all policies, management, and operations in the provision of finance for agricultural and other rural economic activity.
2. It functions as a restructuring agency for banks that offer investment and production finance in support of various rural development projects [38].
3. It is enhancing India's institutional credit system's absorptive ability, including surveillance, restoration programme creation, credit institution reformation, and personnel training.
4. It integrates the remote financing operations of all types of institutions involved in the implementation activities at the grassroots levels, while sustaining interaction with the Government of India, State Legislatures, the Reserve Bank of India, and other national level policy-making agencies [38][39].

## 8. THE DEVELOPMENT AND INCLUSIVE GROWTH OF FARMERS :

It is expected to lower a country's quick growing poverty rates and improve people's participation in the country's developmental process as an economic policy strategy. By nature, inclusive growth entails a fair distribution of resources that promotes all members of society. However, such resource allocation must be based on the anticipated short and long-term advantages of that community, such as availability of consumer products, people's access to jobs, living conditions, and so on [40]. It also serves as a vital linkage between macro and microeconomic factors that cause of financial growth. Financial inclusion entails rendering financial services accessible to all people at a reasonable price. Underprivileged populations and low-income groups ought to have access to these programmes. As a result, the primary goal is to provide basic financial services to the country's unbanked citizens [41]. This procedure aims to boost the country's economic growth. In addition, the fundamental goal is to close the disparity between both the affluent and the impoverished. It is also accomplished by obtaining surplus funds and distributing them to the needy [42]. The Reserve Bank of India is a key player in financial inclusion. Financial inclusion in India may be accomplished through several approaches. In India, regulatory agencies, government authorities, and banking executives have taken certain steps. They are as follows; [42][43].

**Account with No Extra Charges:**

This is a simple banking account with a zero or exceptionally low minimum balance. The no-frills account has recently undergone some adjustments. Such accounts were indeed transformed to elementary savings bank deposit accounts [44].

**Basic Savings Bank Deposit Account:**

This account does not have the option of having a minimum balance. The accounts were likewise changed to Banking Savings Bank Deposit Account accounts, as formerly stated. The banks offer a variety of services with this account [45]. Depositing and withdrawing cash at a financial institution are

also encompassed in these facilities. This may also be done at the bank's ATMs. Additionally, currency is established and accredited through online transaction or cheque. There's also the option of using an ATM card or an ATM cum debit card [45][46].

**Lead Banking Scheme**

This tactic foresees a single bank taking the lead and it smears to both private and state banks. The lead banks aid as a basis of consultation in this state. It is used to manage with financial institutions that work with districts [47]. As a result, this is being prepared in mandate to boost the fluidity of small-scale enterprises, agriculture, and other sectors of the economy. As a result, the critical portion in semi-urban and rural regions is included [47][48].

**Pradhan Mantri Jan Dhan Yojana**

Mera Khata - Bhagya Vidhata is the scheme's key slogan [49]. This signifies that my bank account is the deity of my universe. Also included in the plan are overdraft possibilities of up to 50,000 for accounts connected to an Aadhaar card and therefore available to holders of Rupay debit cards [49][50].

**Business Correspondent System**

These are the banking personnel who would go to the locations where they are authorized. They must do banking chores [51]. These personnel will help residents in opening bank accounts and booming out tedious transactions. The bank pays them a commission for each account created or transactions done, and so forth [52].

Thus, the financial inclusion has the ability to boost a bank's business by drawing in more clients. It also aids in the improvement of the significant proportion of people's living standards. It helps to close the divide amongst rural and urban dwellers. It also helps banks grow their company and increase the number of lucrative consumers [53].

## 9. POLICIES IMPLEMENTED BY THE GOVERNMENT OF INDIA :

The policies implemented by the government of India are as follows;

**E-NAM:**

The National Agriculture Market (e-NAM) is a pan-India online payment interface that provides the current APMC allocable to establish a single national agricultural commodities market [54]. Beneath the Ministry of Agriculture and Farmers' Welfare, Government of India, the Small Farmers Agribusiness Consortium (SFAC) is the principal agency for e-NAM implementation [55]. The focus is to achieve e-agriculture consistency by simplifying protocols among interconnected marketplaces, eliminating ambiguity between market participants, and encouraging true price detection depending on current demand and supply [56].

**National Mission for Sustainable Agriculture (NMSA):**

The National Mission for Sustainable Agriculture (NMSA) was created with the goal of increasing agricultural production, particularly in rain - fed regions, by concentrating on intensive agriculture, water efficiency, organic fertilizers management, and sustainable agricultural synergies [57][58]. Through the acceptance of a feasible path of growth, NMSA will address important areas of Water productivity, Nutritional Management, and Sustainable livelihoods, among others, by moving steadily to energy efficient technologies, high efficiency devices, preservation of natural resources, and embedded farming, among others [58][59].

**Pradhan Mantri Krishi Sinchai Yojana (PMKSY):**

The Indian government is devoted to creating water protection and maintenance a prime concern. To this aim, the Yojana was developed with the intent of expanding irrigation penetration and increasing water usage productivity in a targeted way by providing an end-to-end service for sources production, transmission, administration, field approval process, and outreach efforts [60].

**Paramparagat Krishi Vikas Yojana (PKVY):**

The NDA administration established the Paramparagat Krishi Vikas Yojana (PKVY) as a campaign to encourage sustainable agriculture in India. Farmers will be intended to establish categories and switch to green agricultural practises across huge regions of the country under the initiative. In contrast, the government has promised to subsidise accreditation fees and encourage organic farming by incorporating various resources [61][62].

**Pradhan Mantri Fasal Bima Yojana (PMFBY):**

This is a government subsidized crop insurance programme that brings together a wide range of stakeholders on one channel. The goal of this scheme is to offer farmers with insurance coverage and

financial assistance in the occasion that any of the reported crops fails due to natural catastrophes, parasites, or illnesses [63]. The farmers' income must be guaranteed in order to be compatible farming and incentivize peasants to use new and advanced agricultural methods while also ensuring a steady supply of finance to the agriculture industry [64].

**Gramin Bhandaran Yojna:**

The purpose of the scheme is to build systematic processing capability in remote regions with affiliated services to fulfill farmers' needs for stashing agriculture products, pasteurized food products, and agricultural implements, promote grading, interoperability, and quality assurance of agricultural production to strengthen commercialization, and inhibit grief sales instantly after cultivation by enabling deed funds and marketing credit [65].

## 10. PESTLE ANALYSIS ON AGRICULTURE SECTOR :

PESTLE Analysis is a tactical paradigm that breaks down possibilities and hazards into Political, Economic, Social, Technological, Environmental, and Legal elements in order to assess a company's external environment. The Analysis is a useful tool for determining the benefits and drawbacks of a financial strategy. The PESTLE model is an augmentation of the PEST strategic approach, with extra consideration of environmental and legal concerns that might influence a firm [66]. Below figure 2 exhibits the PESTLE Analysis in the field of Agricultural Finance Institutions.

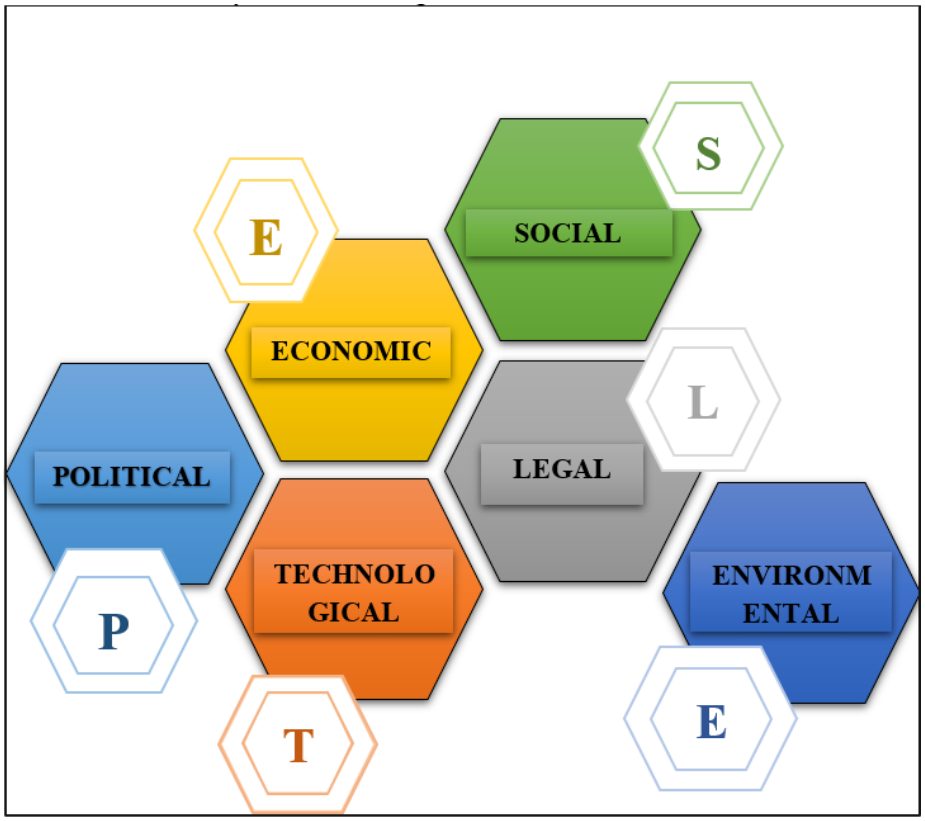


**Fig. 1:** PESTLE Analysis

Source: Compiled by Researcher

**Political Factors:**

Government laissez faire economics, corporate law, labour law, legal principles, regulations in the do main of international trading control, competition policy, consumer protection law, environmental saf ety law, and so on are all examples of political considerations [67].

**Economic Factors:**

The elements embrace an examination of the overall status of the country's economy i.e., inflation, GDP growth rate, rate of interest, currency value, illiteracy, and so on, as well as the proportion of small, medium, and large firms, private and public properties, competition intensity and kind, and so on [67].

**Social Factors:**

The assessment of demographic shifts like age, gender, steady growth, fertility rate, causes of death, population mobility, educational background and peer classes amongst the other inhabitants, cultural values and principles of traditions, norms, ideologies, spirituality, heritage, and people's needs and wants are all covered by social factors [67].

**Technological Factors:**

The examination of technological factors includes research and innovation, technical assistance, the equitable access to trademarks, researchers' attitudes regarding authorship, and the opportunities and quality to research institution services [67].

**Legal Factors:**

The national, and provincial law essentially forms a legal structure that emerges into a business world and functions in the agricultural primary sector [67].

**Environmental Factors:**

Environmental elements are environmental factors that are connected to the process automation and practices that are used in agriculture to conserve the viability of the sustainable resource [67].

| ***PESTLE ANALYSIS FACTORS*** | |
|---|---|
| **POLITICAL** | **ECONOMICAL** |
| • The continuous changes in the Government policies towards agriculture.<br>• The Political stability will include the indicators which are pertinent in determining a stability in agriculture with the rule of law, political stability index and durable index.<br>• Corruption is an immoral conduct committed for the purpose of obtaining financial or non-financial gain. It manifests itself as racism, biasness, bribe, compulsion, influence, and so forth.<br>• The basic deviations contained in the trade policy reform are articulated in the logic and structure of India's agricultural trade policy regime over the decades.<br>• Using tax averaging, the tax system helps farmers to level out revenue fluctuations over time.<br>• Raised input costs, such as fertilizers and labour, have inflated the price of production and lowering the agricultural returns. | • Agriculture-based economic growth has a relatively substantial influence on hunger and poverty reduction. Boosting non-farm rural earnings through increasing agricultural employment and incomes promotes demand for non-agricultural products and services.<br>• Exchange rate fluctuations have a long-term impact on the agriculture sector's investment and productivity.<br>• Interest rates are an important factor in determining the productivity of agricultural possessions. Higher interest rates will reduce predicted revenues by increasing the cost of borrowing and manufacturing.<br>• Farmers' cash flow concerns are exacerbated by inflation, which necessitates a high degree of financial management and prudent fiscal solutions.<br>• Unemployment in agriculture is driven by a range of factors including high rates of population growth, deprivation, ecological limits, and agricultural advancements. |
| SOCIAL | **TECHNOLOGICAL** |
| • People's attitudes regarding agricultural careers have been significantly impacted by their socioeconomic position.<br>• Agricultural safety and wellbeing is a subset of health and safety measures in the agriculture industry. | • Incentives for technological advancement in the agriculture industry to promote growth and innovation<br>• Farm automation help in making agriculture more lucrative thereby decreasing its environmental impact. |

| | |
|---|---|
| • The cultural factors which influence the agriculture among them are religion, social organization, and dietary preferences.<br>• Agricultural skills and knowledges in agriculture, such as production, development, and controlling, increases with age factor. | • Research and Development creates new technology and is a key factor in agricultural productiveness, as well as prices and hardship.<br>• Agriculture has become more financially viable, productive, convenient, and ecofriendly as a result of technological advancements. |
| LEGAL | **ENVIRONMENTAL** |
| • Source of food, accessibility, and durability can all be impacted by climate change.<br>• Agriculture's environmental performance will be effectively improved with the help of policies.<br>• NGOs help to enhance agriculture across the world by contributing their funds and manpower to government programmes. | • Law prohibiting discrimination against blacks, native, Hispanics, woman, Indians, farmers, and ranchers.<br>• Antitrust laws were intended to prevent a few entities from reaping in profits at the expense of farmers and consumers.<br>• Target pricing and shortfall payments were implemented as a method to boost agricultural income under the Consumer Protection Act on Agriculture. |

**Fig. 2:** PESTLE Analysis of Agricultural Finance Institutions.

Source: Compiled by Researcher

## 11. METHODS AND TECHNOLOGIES ADOPTED BY AGRICULTURAL SECTOR :

In contemporary agriculture, technological advance is further decisive than ever. The division is indeed provoked with substantial disputes, comprising budding supply prices, workforce deficiencies, and fluid customer requirements for ecological sustainability [68]. Agriculture firms are progressively spotting the prerequisite for retorts to these difficulties. Indoor conventional farming, livestock technology, contemporary greenhouse methods, robotics and automation, meticulousness farming and artificial intelligence, and block chain have all seen significant technological advancements in the industry [68][69].

**Indoor Vertical Farming:**

By dipping the coldness covered in the supply chain, indoor vertical farming can boost crop yields, reduce land restraints, and even minimizing ecological effect of farming. It is the method of generating food in a confined and secure environment by stacking it one on top of the other [70]. When equated to outmoded farming methods, employing steeply placed emergent aisles considerably limit the cost of area essential to cultivate plants. Because of its inclination to survive in small spaces, this panache of growth is commonly allied with cities and regional farming. Vertical farms are distinct in that certain configurations do not entail soil for plant growth. The majority are either hydroponic or aeroponic. Synthetic grow lights have been employed in place of natural sunshine [70][71].

**Farm automation:**

It is typically recognized as smart farming, which is a kind of tools that rallies farm adeptness by mechanizing the harvest or livestock farming cycle. Drones, automated watering, tractors, seeding robots, and robotic harvesters are all being industrialized by a mounting number of firms. Regardless of the fact that these know-hows are still moderately novel, a cumulative number of conformist agriculture organizations are integrating farm automation into their actions [72].

**Livestock Farming Technology:**

Although it is undoubtedly the most important, the traditional cattle business is frequently disregarded and underserved. Livestock supplies essential renewable natural resources that people depend on a daily basis. Technology, on the other hand, is transforming the field of cattle management, as seen by recent developments [73]. The new advancements have dramatically upgraded the sector, making livestock

checking and handling much smoother and data driven. Nutritional technologies, genetics, digital technology, and other methods of technology may be used to accomplish the goal [73][74].

**Modern Greenhouses:**

The greenhouse sector has evolved from small-scale fieldwork and decorative resources to significantly larger operations that come into direct contact with land-based traditional production of food. The sector is currently booming like never before, largely owing to great recent breakthroughs in rapid evolution. Greenhouses that are substantial, wealth, and densely populated are becoming more common nowadays [75].

**Precision Agriculture:**

These firms are creating technology that enables growers to elevate productivity by managing every aspect of crop production, including humidity levels, insect stress, soil quality, and weather patterns [76]. It allows agrarians to boost efficacy and lowering outlays by offering more precise strategies for embedding and fabricating commodities. Faster, more adaptable companies that rigorously enhance agricultural production are appealing to the budding younger breed of farmers [77][78].

**Block chain:**

The potential of block chain to monitor possession credentials and resist meddling can be employed to address pressing concerns in the present food supply chain, such as food safety issues, culinary returns, distribution network complexity, and product tracking. The decentralized nature of block chain assures that items and processes are validated, resulting in a transparent market for high-end goods [79].

**Artificial Intelligence:**

The dawn of digital farming and smart systems has steered in a slew of latest data likelihoods. Smart sensors, drones, and unmanned midair vehicles can collect data on a whole field 24 hours a day. These may keep track of plant nutrition, soil composition, heating rate, dampness, and other factors. The volume of information these devices may create is mind-boggling, and the context of the figures is lost in the deluge of information [80]. The objective is to provide farmers a better grasp of the issues on the grounds by using current technology that really can educate them so much about their situation than they can see with their bare eyes. Not only more precisely, but also quicker than inspecting it wandering or pouring diagonally the fields [81].

## 12. FINDINGS :

The following key findings were made from the study:

1. Institutional financing sources are insufficient to satisfy the needs of farm loans.
2. Farmers must rely on non-formal financial institutions such as mahajans and money - lenders to satisfy their financial demands due to a lack of credit supplied by conventional banking institutions.
3. A paucity of comprehension of the credit arrangement.
4. The government has offered significant incentives to peasants on agriculture products in order to encourage the integration of new technologies in agriculture and boost agricultural production and productivity at a subsidized rate.
5. Farmers have access to finance, money lenders' prominence has waned, and farmers' enslavement at the grubby paws of money - lenders has dropped significantly.
6. The application of technology has resulted in the need to make efficient utilization of ordinary resources and practices in directive to surge agricultural invention while dropping expenses.
7. Due to a shortage of financial institution outlets, farmers and agribusinesses have restricted access to savings, insurance, and credit services.

## 13. RECOMMENDATIONS :

The following are the recommendations for improvements:

1. Farmers should be empowered and provided the required exposure campaigns so that they are aware of the new finance assistances offered by the organized and unorganized sectors.
2. The rural families' participation of institutional credit has attributed to the growth of policy actions.
3. The necessity of greater financing can broaden farmers' investment opportunities and equip them with more effective risk management tools.

4. Governments need to embrace a different and enhanced policy goals for agricultural production and interaction for regional development, with a nationwide emphasis on sustainable security and rural income production.
5. The support is intended to promote the creation and dissemination of inventions that address the special needs of women, youth, and vulnerable groups in terms of finance.

## 14. CONCLUSION :

In India, agricultural lending has been critical in sustaining farm productivity. However, the breadth and volume of agricultural finance has grown over time, a number of flaws have emerged, threatening the growth and efficiency of these organizations. Financial institutions play a crucial role in generating revenues and redirecting them into productive investment. As an outcome, financial institutions play a weighty position in the growth of any industry, including agriculture. Rather, the agricultural industry's development is more reliant on the banking industry since the ranchers are small and peripheral who are reluctant to save and invest owing to their low income levels. The influence of credit in agriculture should not be perceived solely as a means of reinforcing food-producing activities; rather, it should be oriented on ought to increase the entire income and social well-being of the producers, since agriculture is the fundamental basis of national authority. The evaluation of the correlation amid agricultural and non-agricultural development in India reveals that indeed farm and non-farm sectors in remote regions augment one another and mitigate hazards. To eliminate regional disparities, hardship, and misery, rural credit policies and initiatives must focus on agricultural and rural non-farm sector growth. The analysis found that the institutional credit to farming has been rising. In latest years, the nature of loan sources has shifted, with commercial banks emerging as the primary provider of institutional lending to agricultural.

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