

FINTECH SOLUTION FOR SMALL FARMERS IN INDIA A REVIEW OF CREDIT ACCESS AND INSURANCE

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ABSTRACT

Fintech, or financial technology, has been a game-changer in the banking and insurance industries throughout the last decade. Mobile banking, e-KYC enabled by Aadhaar, AI-based credit scoring, and real-time data analytics are just a few examples of the advances that fintech has used to bring inclusive and effective solutions for lending in rural areas. To improve financial inclusion in neglected areas and simplify the distribution of agricultural loans, financial institutions are embracing fintech platforms at an increasing rate, with the State Bank of India (SBI) leading the pack. When it comes to alleviating poverty and enhancing the standard of living in rural areas, technological developments in agriculture are crucial. When new technology is integrated into farming, it completely alters how farmers see, anticipate, and prefer to do things. To achieve this goal, it is essential to increase farmers' financial knowledge and participation. Inclusive growth of agricultural value chains is promoted by enhancing their financial literacy and access to services. Opportunities for improvement and hazards may be better identified with the use of risk aversion methods, value stream mapping, and strategies for identifying and mitigating risks. As a result of technological advancements, farmers are now able to access internet marketplaces and financial institutions. Subsidies and crop insurance are two examples of government programs that help build resilient value chains. Investments in the social and environmental aspects of the agricultural value chain help to ensure the sector's continued success in the long run. Contract farming provides farmers with stable markets by reducing their exposure to production, pricing, and marketing risks.

Keywords: *fintech, solution, small farmers, credit access, insurance*

INTRODUCTION

To keep India's rural economy afloat and growing, agricultural financing is essential. However, small and marginal farmers, who sometimes do not have the necessary paperwork or a credit history, continue to face a significant obstacle when trying to get reasonable and timely loans. The increasing demand for loans in the agricultural sector is outstripping the capacity of traditional lending processes, which are labor-intensive, time-consuming, and constrained by the physical locations of bank branches. Fintech, or financial technology, has been a game-changer in the banking and insurance industries throughout the last decade. Mobile banking, e-KYC enabled by Aadhaar, AI-based credit scoring, and real-time data analytics are just a few examples of the advances that fintech has used to bring inclusive and effective solutions for lending in rural areas. To improve financial inclusion in neglected areas and simplify the distribution of agricultural loans, financial institutions are embracing fintech platforms at an increasing rate, with the State Bank of India (SBI) leading the pack. When it comes to alleviating poverty and enhancing the standard of living in rural areas, technological developments in agriculture are crucial. When new technology is integrated into farming, it completely alters how farmers see, anticipate, and prefer to do things. For almost 874 million people working in agriculture throughout the world, issues like poverty, hunger, and malnutrition are still very much present. There are significant obstacles to success in the agriculture industry due to the poor infrastructure, which includes transportation systems, electrical access, telecommunications, marketing facilities, and minimal finance assistance.[1]

Role of FinTech Startups in Rural Financial Inclusion

1. Digital Payments

Startups like BharatPe, Paytm, and PhonePe have made it possible for people in rural areas to use digital payments. Without investing in costly infrastructure, small businesses and farmers may now take payments using QR code-based solutions. Further boosting acceptance, UPI's interoperability has made transactions straightforward and low-cost.

2. Micro-Lending and Credit Access

Alternative credit scoring methods based on transaction history, cellphone usage, and digital footprints are being used by startups such as KreditBee, Lendingkart, and Kinara Capital to offer small-ticket loans to rural entrepreneurs and farmers. The use of informal moneylenders is decreased, and productive credit is increased, as a result.

3. Insurance and Risk Management

New companies in the insurance technology sector are developing micro-insurance policies specifically for those living in rural areas. For instance, GramCover offers affordable insurance to farmers in the event of crop failure or health crises. Online systems streamline the claims procedure, cutting down on inefficiencies and fraud.

4. Agritech-FinTech Integration

Financial services are being integrated with agricultural value chains by startups such as DeHaat and Samunnati. These startups provide farmers with access to loans, market connections, and input finance. Productivity and economic security are both improved by this all-encompassing method.[2-5]

Applications of Fintech in Agriculture

Sustainable growth and financial inclusion in agriculture are being propelled by fintech. Limited collateral and credit histories make it difficult for smallholder farmers to acquire standard banking services. To solve this problem, financial technology has developed solutions like mobile payment systems and online lending platforms, which make it easier for farmers to get the money they need. Thanks to this access, growers are able to buy better inputs, use more advanced farming techniques, and harvest more fruit. Blockchain technology and other financial breakthroughs provide visibility into agricultural value chains, which in turn guarantees equitable pricing and lessens the impact of middlemen. Greater economic integration, better financial inclusion, and longer lifespans are all possible outcomes of the agricultural industry capitalizing on FinTech's promise.[6]

OBJECTIVES OF THE STUDY

1. To study on Role of FinTech Startups in Rural Financial Inclusion
2. To study on Applications of Fintech in Agriculture

RESEARCH METHOD

Study Design

The current literature on AVCF was reviewed using a systematic review approach in this study, adhering to the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) statement's principles. The major objective of this analysis was to examine regional initiatives for improving access to finance and optimizing investments.[7]

Data Sources and Search Strategy

The literature on financial accessibility and investment levels was reviewed using a systematic search technique in this research study. The databases and sources utilized were Scopus and Google Scholar. This was accomplished by doing a comprehensive search that included publications published between 2007 and 2023, a 16-year span given the dearth of literature on the issue.

Study Selection Process

Keywords like "value chain finance," "agricultural supply chain finance," "agricultural credit," "financial inclusion in agriculture," "models of value chain finance in agriculture," and "challenges to value chain finance" were among those used in the search. The evaluation also takes note of the difficulties encountered by the agriculture financing industry.

Inclusion and Exclusion Criteria

By drawing from a wide range of resources, such as reports, case studies, conference proceedings, and indexed journals, this method emphasizes variety. After a thorough search of academic databases and journals, 152 publications matched the criteria for inclusion in the PRISMA analysis. In order to investigate important facets of AVCF and agricultural financial assessment, the researchers used a systematic data mining technique.

Data Extraction and Synthesis

The study adds to our knowledge of AVCF and associated topics by studying various models, financial restrictions, influencing variables, and creative methods to reviving agricultural production through value chain finance.

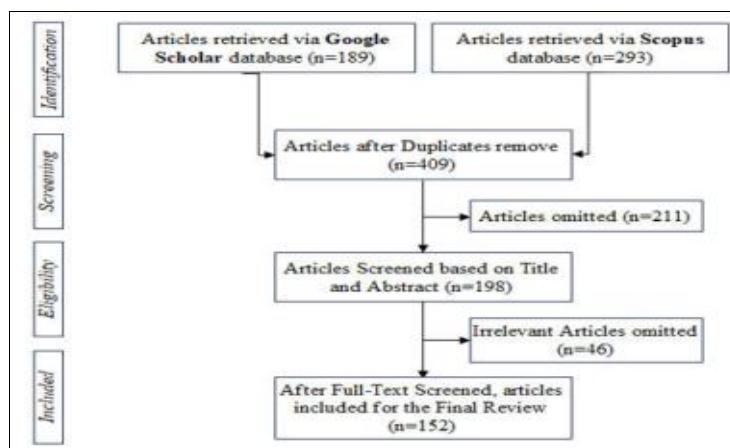


Figure 1 Graphical depiction of article selection with PRISMA approach

RESULT AND DISCUSSION

Comparative analysis of different models of agricultural value chain finance

Table 1 offers a comparative study that elucidates the various models of agricultural value chain finance. Each model possesses unique characteristics, advantages, constraints, and effects on the agriculture industry. The following discourse presents a comprehensive examination of the results.[8]

Table 1 Comparative comparison of several models of agricultural value chain finance

Financing model	Features	Benefits	Limitations	References
Collaborative financing	Cooperative funding strategy	Improved collaboration among stakeholders	Augmented marketing prospects	[9-14]
	Collective accountability of value chain participants	Decreased transactional expenses	Insufficient scalability	
	Incorporation of smallholder farmers	Risk-sharing framework	Obstacles in debt recovery	
Contract-based financing	Financing based on contractual agreements	Assured market entry	Restricted adaptability in agreements	[15-17]
	Prolonged contracts with purchasers	Consistent prices and earnings	Reliance on the buyer's honesty	
	Consolidated supply chain	Reduced transaction and negotiating expenses	Asymmetry of information	
	Delivery of technical support	Enhanced productivity and efficiency	Restricted access to formal credit	
Rural cooperative financing	Financing for rural cooperatives	Negotiating authority of a group	Challenges in governance and management	[18-22]

	Owned by members and governed democratically	Reduced interest rates	Restricted financial assets	
	Collaborative risks and gains	Reciprocal assistance and networking	Restricted potential for expansion	
	Delivery of input and output services	Augmented marketing prospects	Absence of professional proficiency	

Collaborative financing: Collaborative finance is a methodology that unites many players in the agricultural value chain, encompassing governmental organizations, commercial enterprises, agencies, corporations, and farmers. The primary objective is to improve coordination, decrease transaction costs, fortify market ties, and guarantee equitable pricing for agricultural goods. The shared liability method of collaborative finance promotes risk-sharing, enhancing production and profitability for farmers. It fosters inclusion by allowing small-scale farmers to engage. Nonetheless, obstacles such as constrained financial resources, inadequate collateral, and bureaucratic processes impede scalability. Addressing these issues is essential for the long-term sustainability of collaborative finance in agriculture.

Contract-based financing: Contract-based financing is a prevalent concept in agricultural value chain finance. It functions by long-term contracts formed between producers and purchasers, guaranteeing assured market access and consistent pricing. This method optimizes transaction procedures, minimizing negotiating expenses. Technical aid improves production, efficiency, and the implementation of sustainable practices in agriculture. Contract-based financing alleviates risks associated with price volatility and unpredictable market conditions, enhancing agricultural practices and cultivating collaboration and trust between farmers and purchasers. Emphasizing openness and equity in contract-based finance arrangements is crucial to protect farmers' interests and facilitate informed decision-making.

Rural cooperative financing: Rural cooperative financing is a collaborative method of agricultural value chain finance wherein farmers aggregate resources and participate in financial operations. This strategy provides collective negotiating strength, allowing farmers to negotiate elevated commodity prices and obtain banking services at reduced interest rates. It cultivates reciprocal support and networking through Farmer Producer Organizations (FPO) and Self-Help Groups (SHG), enhancing community and collaboration. Forming cooperatives offers farmers an opportunity to articulate issues, tackle shared difficulties, diminish dependence on other financial entities, and promote self-sufficiency. Nonetheless, expanding the paradigm encounters obstacles stemming from resource limitations and governance concerns. Capacity-building programs and supporting policies are essential for surmounting constraints. A comparative examination of collaborative financing, contract-based financing, and rural cooperative financing models in agricultural value chain finance elucidates their distinct characteristics, advantages, and constraints. These strategies enhance financial accessibility, facilitate market connections, and empower agricultural producers. Policymakers and stakeholders must contemplate these elements when formulating suitable financing solutions to promote sustainable agricultural development, enhance livelihoods, and attain inclusive growth within the agricultural sector.[23-27]

Financial constraints

Access of finance: Access to funding in agriculture, especially for small farmers, is constrained, hindering investment in contemporary techniques and production expansion. Stringent restrictions, extensive paperwork, and credit history hinder small farmers' access to financing, diminishing productivity and involvement in higher-value activities. Despite the government's provision of formal financial services via cooperative banks, Regional Rural Banks (RRBs), and rural commercial banks, numerous individuals are unable to access these services due to inadequate collateral, aversion to visiting banks, and the difficulty of documentation. The knowledge deficit and absence of collateral render financing to these farmers precarious. It is recommended to expand bank branches in rural regions and employ qualified workers to aid farmers in obtaining loan resources. Superior service quality, expedited loan approval, and reduced documentation are vital for enhanced utilization of institutional finance. Reduced interest rates and extended repayment terms may enhance farmers'

receptivity to institutional finance. Governments, banking institutions, and agricultural organizations must cooperate to mitigate financial limitations. Tailored financial inclusion strategies, educational programs, optimized lending procedures, and collateral alternatives can enhance finance accessibility and encourage engagement in the agricultural value chain.

Financial illiteracy: Inadequate financial literacy obstructs farmers' access to financing and impairs decision-making. Inadequate debt comprehension is associated with elevated numerical and probabilistic skills. Educational attainment and financial experience enhance cognitive capabilities, with mathematical skill associated with financial awareness and debt literacy. Risk aversion reduces financial capacity, but cash crop producers utilizing external inputs have heightened debt awareness. The banking system promotes financial inclusion; yet, farmers' inadequate financial literacy obstructs their utilization of suitable financial instruments for agricultural endeavors. This obstructs thorough financial planning, resource distribution, and cash flow management, resulting in financial instability and limited access to financing. Suboptimal decisions and hesitance to utilize financing hinder agricultural output and expansion. Governments and financial institutions ought to implement training initiatives and campaigns in rural regions to promote financial inclusion and foster rural development. Financial literacy enables rural residents to make educated choices, access financial services, and enhance economic well-being.[28]

Seasonality and cash flow challenges: The fluctuation of cash flow in agriculture presents substantial issues for farmers, impacting their working capital, payback timelines, and access to formal financing. Seasonal income and restricted assets impede farmers from offering loan collateral, as financial institutions often mandate it. The perceived risks in agriculture, encompassing climatic variability and market changes, induce risk-averse conduct among lenders, resulting in stringent lending standards, elevated interest rates, and restricted credit access. There is a necessity for innovative financial solutions and risk management measures. Flexible finance, crop-linked financing, agricultural insurance, income-smoothing methods, and supply chain financing help alleviate cash flow fluctuation and improve farmers' creditworthiness. These solutions mitigate seasonality and cash flow issues, enhancing working capital, investment prospects, and financial stability. Collaboration among policymakers, financial institutions, stakeholders, and farmers is essential for effective implementation, the development of financial products, the establishment of regulatory frameworks, and the enhancement of farmer knowledge.

Weak value chain coordination: The agricultural industry has issues such as farmer despair, sluggish development, low productivity, price declines, and wasting of unsold commodities. Insufficient value chain coordination obstructs farmers' access to financing and market connections, thereby impacting income and access to formal finance. Volatile demand and price variations exacerbate market forecasts for farmers. Price volatility and unpredictable demand adversely impact farmers' income, influencing investment strategies and financial commitments. Factors such as limited economies of scale, diminished bargaining power, insufficient market linkages, and information asymmetry elevate transaction costs for small-scale farmers. Perishable commodities have elevated marketing expenses due to intricate systems and intermediaries, resulting in unethical behavior, diminished pricing, and market inefficiencies. Confronting these difficulties is essential for enhancing livelihoods, income, and food security. Innovative products, delivery-based contracts, and the utilization of indirect futures can enhance confidence and promote the usage of futures. Policies must reduce transaction costs, improve connectivity, and furnish market information and infrastructure. Enhancing institutional support for contract farming and Farmer Producer Organizations (FPOs) can augment farmers' engagement in value chains and futures markets.

Influencing factors in the adoption of AVCF: The adoption of AVCF by companies is affected by several elements, including operational, financial, relational, technical, and informational dimensions. Policymakers, financial institutions, and stakeholders must comprehend these characteristics to formulate effective policies and interventions that promote farmers' adoption of AVCF.

Operational factors: Operational operations are crucial for the seamless movement of agricultural products within the value chain. Factors influencing AVCF adoption encompass value chain coordination, effective supply chain management, prompt disbursement and repayment, as well as supportive infrastructure and legislative and regulatory frameworks. Value chain coordination is the collaboration of several stakeholders to mitigate bottlenecks and facilitate the seamless movement of commodities and services. Effective supply chain management minimizes waste, boosts product quality, and improves farmers' access to markets. Prompt access to financing for working capital, input investment, and production management is essential for farmers. Financial institutions that possess quick disbursement procedures and adaptable payback choices facilitate the development of value chain finance. Robust infrastructure, such as storage facilities and market connections,

optimizes value chain operations, minimizes post-harvest losses, and facilitates access to superior markets. Beneficial law fosters inclusive finance, facilitating the implementation of value chain financing in agriculture. Stakeholders may enhance the effective implementation of value chain finance through coordination, supply chain optimization, financial services, infrastructure investment, and supportive legislation.[29-31]

Financial factors: Research highlights financial determinants affecting VCF adoption in agriculture, including working capital, credit accessibility, interest rates, collateral prerequisites, loan conditions, supporting institutions, and government initiatives. Access to credit mitigates financial deficiencies and enhances value chain operations. Financial institutions providing customized solutions are more inclined to promote VCF adoption. Favorable lending rates and clear pricing are essential for agricultural producers.

Conventional collateral prerequisites, such as land ownership, might obstruct smallholder farmers' access to venture capital financing. Inclusive strategies, such as agricultural inventories or farmer association assurances, can expand accessibility. Loan payback conditions are essential for farmers, and financial institutions with agricultural experience, customized products, and individualized support earn farmers' confidence and approval. Collaboration among financial institutions and other stakeholders in the value chain promotes the implementation of VCF. Government measures providing incentives promote VCF adoption. Targeted interventions addressing financial considerations promote farmers' adoption of VCF.

Relationship factors: Trust, support, cooperation, responsiveness, enduring relationships, and value chain networks are essential for enabling the flow of capital. Trust is established via open processes and dependable financial services. Cooperative initiatives involving cultivators, suppliers, producers, retailers, and financial entities improve coordination and diminish transaction expenses. Responsiveness is a crucial relational feature, as financial institutions that exhibit attentiveness to farmers' needs are more likely to garner their attention and engagement. Long-term partnerships promote information exchange, collaborative investments, and ongoing assistance, allowing farmers to get financing at various stages of the value chain. Farmer cooperatives and collective action platforms consolidate resources, negotiate improved conditions, and jointly access value chain financing, therefore augmenting farmers' bargaining strength and promoting shared responsibility and mutual support. An interconnected value chain network provides farmers with enhanced market access, information dissemination, and commercial prospects. Encouraging good and collaborative connections among participants helps cultivate an atmosphere favorable to the adoption and implementation of value chain finance by farmers.[32-34]

Technological factors: The implementation of AVCF is propelled by technological elements, such as digital infrastructure and fintech advancements like blockchain and IoT, which transform the delivery and accessibility of financial services for farmers, facilitating seamless transactions, information exchange, and communication throughout the value chain. Resilient digital infrastructure diminishes geographical constraints, enhances transaction velocity and precision, and facilitates instantaneous information transmission. Fintech advancements, including as blockchain and IoT, have significantly impacted AVCF adoption by resolving farmer concerns through safe, transparent record-keeping and minimizing fraud risk, hence enhancing confidence among value chain actors. These technologies has the capacity to transform supply chain finance by enhancing transparency, accountability, and efficiency in financial transactions. IoT devices and sensors produce real-time data on agricultural production and operations, facilitating data-driven decision-making, improving financial inclusion, optimizing processes, and increasing transparency within the agricultural sector. financial exchanges. IoT devices and sensors produce real-time data on agricultural production and operations, facilitating data-driven decision-making, improving financial inclusion, optimizing processes, and increasing transparency within the agricultural sector.

Informational factors: In the field of agricultural finance, several informative elements have been extensively examined in the literature. The variables encompass financial literacy and awareness, dependable market information, transparent pricing and equitable trade practices, financial advising services, and capacity building and training. Comprehending and managing these challenges is essential for facilitating the efficient implementation of value chain finance by farmers. Financial knowledge and awareness are essential for enabling farmers to make educated financial choices. It entails providing farmers with the expertise to comprehend financial products, manage their finances proficiently, and assess the advantages and hazards linked to value chain financing. Access to dependable market information is essential for farmers to efficiently implement value chain finance [19]. They require current data on market trends, pricing, and quality standards to make educated decisions on their manufacturing, marketing, and financial plans. Transparent pricing and equitable trading procedures are fundamental components that foster trust and confidence among farmers in value chain financing.

Access to financial consulting services is essential for farmers to manage the intricacies of value chain finance. Advisors provide tailored counsel on financial planning and risk mitigation. Capacity building initiatives encompass financial management, risk assessment, and company planning. By addressing these variables, stakeholders enable farmers to successfully utilize value chain finance, hence boosting agricultural output and profitability. The literature examines factors affecting the acceptance and implementation of AVCF. Classifying these characteristics into overarching categories facilitates comprehension and analysis, revealing similar themes and intersections. Table 2 delineates five separate categories, offering a methodical framework for the thorough examination of these issues.

Table 2 Arrangement of factors

Operational factors	Financial factors	Relationship factors	Technological factors	Informational factors	References
Value chain coordination	Accessibility of operational resources and credit facilities	Confidence and assistance	Digital infrastructure	Knowledge and understanding of money	[35]
Efficient supply chain management	Rates of interest and the cost of borrowing	Working together	New ideas in fintech	Fintech has new ideas.	[36]
Timely disbursement and repayment	Requirements for collateral	Being responsive		Fair trading practices and clear pricing	[37]
Supportive infrastructure	Terms for paying back a loan	Partnerships that last a long time		Advice on money matters	[38]
Financial advisory services	Banks and other financial entities that help	Working together and taking action as a group		Training and developing capacity	[39]
	Government programs and help	Network of value chains			[40]

Fintech Services in Agricultural Finance

The notion of information technology within the financial industry has catalyzed the establishment of several startup enterprises. The fintech sector in Indonesia experiences annual growth. There are 102 fintech platforms in Indonesia that are registered and licensed by the Financial Services Authority. Fintech in Indonesia is categorized into two models: crowdfunding and peer-to-peer lending. Furthermore, fintech exists in both government-managed formats, such as Kartu Tani, and privately-managed formats, including Tanifund, IGrow, Vestifarm, and Crowde. Fintech firms are anticipated to serve as the answer for farmers need financial assistance. [41-45]

Each supplier offers distinct services, information, user interfaces, and attributes that entice farmers to utilize the service, such mediated loans, crowdsourcing, online payments, online investments, and personal finance management. Besides services or facilities, each platform offers distinct funding and flow information, which might influence farmers' comprehension and reactions. The intricate nature of financial services flow and information hinders farmers' utilization of the platform, resulting in funding delays. This fintech unites investors and loan applicants on a single platform. Subsequently, investors will express interest in the allocated amounts. Typically, investors participating in crowdfunding offer assistance for concepts and inventions put up by entrepreneurs who will oversee the cash. The viability of finance is influenced by several factors, including the 5Cs: Character, Capacity, Capital, Condition, and

Collateral. The criteria for credit loan eligibility, as outlined by Abbadi and Karsh (2013), include collateral or guarantees, the borrower's character or background, the capacity or commercial potential of the land, capital or savings, and macroeconomic factors or regional circumstances. Moreover, additional criteria for selecting farmers eligible for assistance include their proficiency and experience in managing agricultural enterprises, the size of their landholdings, and their participation in agricultural associations, such as farmer groups.[46]

Farmers' Preference for Fintech

Consumer preferences might indicate the degree of liking for different current service goods. Preference denotes the extent of affection (a disposition of the heart) towards something, indicating whether an individual favors or disapproves of the evaluated product or service. The inclination towards an object is significantly shaped by attitudes and is frequently employed to forecast behavior, whether pertaining to individuals, groups, or entire nations. Nonetheless, an individual's attitude toward an item does not invariably manifest as unfavorable action against it. Farmers' behavior in selecting fintech is influenced by both internal and external variables. The internal factor is the primary element originating from the farmer, which can exert influence based on individual needs to affect a decision or aspiration to attain certain objectives. Kartasapoetra (1988) identifies internal factors influencing farmers' choices as age, education level, gender, and agricultural experience. Besides internal characteristics, external variables significantly influence farmers' preferences. External variables include conditions that influence farmers from outside themselves, including land, engagement with extension workers, agricultural resources, participation in farmer groups, and access to financing. [47]

The extent of farmers' understanding of fintech will influence their inclination towards its adoption. The expertise of farmers will derive from the accessibility of clear and accurate information on agricultural financing. Farmers acquire knowledge through counseling activities that disseminate information regarding various financing sources and the associated terms and conditions for obtaining funding, as well as the requisite activities to access financing information. Previous study by Agatha and Wulandari (2018) indicates that the majority of farmers require access to formal financial sources. This may result from the farmer's restricted access to information. Nevertheless, the information is crucial for agricultural funding. Accurate and explicit information can influence the effectiveness of securing finance, including the accessibility and transparency of the attributes, terms, conditions, and processes associated with funding. This can enhance the prospects for farmers to secure loans. Numerous initiatives must be undertaken concerning the dissemination of funding information, including counseling activities regarding diverse financing sources and requisite criteria for obtaining financing, along with facilitation and support operations to enhance access to financing information. Training and support initiatives aimed at accessing diverse finance information are anticipated to enhance prospects for farmers to get funding. [48]

The distribution of information, particularly about finance, is essential to execute. A prior research by Harsanto (2014) indicates that the world has lately been linked, with enhanced ICT facilitating expedited communication and economic growth. Information technology may facilitate corporate development. The financial alternatives available to farmers include fintech, banks, microfinance institutions (MFIs), government assistance via farmer associations, traders, agricultural supply stores, and additional funding from family, neighbors, and friends.

Socialization is a crucial technique, as farmers, as participants in the agricultural sector, require information on banking products that might offer capital assistance. The promotion of banking goods can be conducted using brochures. The brochure is a crucial component of the promotional strategy for spreading information pertaining to an institution's operations. The writers articulated that disseminating information, such as through brochures, serves to familiarize the public with the institution and its offerings. [49]

Lestari (2012) found that the engagement and activity levels of farmers in training or analogous activities can influence the program's performance. Farmers play crucial roles by demonstrating high attendance and passion in executing activity plans and actively participating in discussions. The farmer's readiness to use all the information acquired from the training in practical scenarios is also crucial.[50]

Reinvigorating agricultural success with fresh value chain financing strategies

Food security and economic growth are interdependent on agriculture. Affordable finance remains a challenge for many value chain operators, including farmers, which hinders their ability to achieve sustainable prosperity. We have found many answers and techniques after analyzing the relevant literature: An examination of the relevant literature reveals novel Value Chain Finance (VCF) approaches that may aid in environmentally responsible and long-term rural development. The most

talked-about option is agricultural credit, which would help farmers get the money they need. In order to promote sustainable agriculture practices, this article explores value chain financing options such as trade credit, connected credit, and green credit. Important supply chain finance options include micro-financing, integrated financing, rural financing, structured financing, smart financing, informal financing, purchase order financing, accounts receivable financing, and institutional financing. Effective capital usage and seamless operation necessitate the use of working capital management, reverse factoring, and factoring. In order to protect their investments and mitigate risk, banks offer financial instruments known as bank guarantees to farmers. To achieve this goal, it is essential to increase farmers' financial knowledge and participation. Inclusive growth of agricultural value chains is promoted by enhancing their financial literacy and access to services. Opportunities for improvement and hazards may be better identified with the use of risk aversion methods, value stream mapping, and strategies for identifying and mitigating risks. As a result of technological advancements, farmers are now able to access internet marketplaces and financial institutions. Subsidies and crop insurance are two examples of government programs that help build resilient value chains. Investments in the social and environmental aspects of the agricultural value chain help to ensure the sector's continued success in the long run. Contract farming provides farmers with stable market outlets while reducing production, pricing, and marketing concerns. One way to foster an entrepreneurial mindset is to engage in side sales. This may help diversify revenue sources and open doors to new opportunities. Financial solutions, technological developments, governmental interventions, and risk management are some of the creative VCF strategies that might revitalize agricultural prosperity. This promotes good transformation, gives farmers more agency, and propels rural development.

Challenges Posed by Financial Technology on the Advancement of the Agrarian Sector

Many obstacles persist in Indonesia's technological implementation, particularly in the face of a local population that is not yet prepared to embrace shifts in economic activity. Conversely, fintech that has been approved by Bank Indonesia can provide quick and secure loans to small and medium-sized firms, allowing them to expand. The structural dualism of modern (large-scale) agribusiness financing for people with small-scale businesses,(1) a lack of information and poor communication between banks and the agricultural sector,(2) the micro-pragmatism of banking business and macro-policy skepticism, and(3) the establishment of agricultural banks as a solution to the problem of agricultural business financing are all factors that contributed to the structural problems in Indonesian agricultural financing. One problem with developing fintech for agriculture is that different cities and villages have different infrastructure, especially when it comes to internet connection, which is essential for using fintech. Dissemination of fintech is hindered by a limited internet network, particularly in rural and impoverished areas. 2) Farmers' knowledge of financial technology is low. Finally, there are variations in the state of human resources when it comes to embracing new technology. The adoption of fintech in agriculture has been hindered by a lack of personnel with the necessary skills and motivation to utilize it. (4) Barriers to fintech's widespread adoption include the rules that regulate it, which are inadequate. (5) People in rural areas tend to have less knowledge about money and its uses, particularly when it comes to fintech and its aims and advantages. Most people do not know how to handle their money well because they are financially illiterate. Social media networks provide an immediate opportunity to address this issue through conversation and networking.

There are a lot of issues with fintech implementation, according to many research. One issue that farmers face today is the high level of trust and tight relationship they have with informal financial service firms. These institutions can be predatory. Based on previous research conducted in all agroecosystem zones of West Java, farmers who form capital cooperation with dealers and owners of agricultural facilities are obligated to sell their farm products to lenders. Failure to do so will result in a penalty of future loan services being withheld from them.. According to Saksonova and Kuzmina-Merlino (2017), most Latvian respondents don't know much about fintech services, developments in the field, or the new financial products that are related with them. Whenever and whenever their customers need them, fintech companies deliver cutting-edge, top-notch services.[51]

CONCLUSION

As an alternative, they provided financial services that were based on fintech. But poor access and understanding of fintech is mostly to blame for the fact that several Indonesians are still unfamiliar with the term. Thus, it is necessary to provide some suggestions for bettering the applications of fintech in agriculture, such as raising public awareness of fintech. The results highlight the beneficial impacts of value chain financing on the farming industry, particularly on farmers' incomes, productivity, and quality of life. Stakeholders are able to have access to loans, working capital, and investment possibilities

through value chain financing, which also improves farmers' market connections. Within the agricultural value chain, the research highlights cooperative finance, collaboration, and contract-based financing. In order to make the most of these finance methods, it's important to handle issues including scalability, governance, information asymmetry, restricted access to loans, debt collection, contract flexibility, and limited resources. Sustainable agricultural development, better livelihoods, and inclusive growth are all driven by capacity building and supporting policies. Sustainable agricultural development, better livelihoods, and inclusive growth may be achieved by addressing problems and exploiting value chain financing models. To provide suitable assistance to farmers, the results highlight the need of comprehending financial dynamics and difficulties at each level. Affordable energy, financing, and inputs, as well as better market connections, are good for business. Rural banking, financial education, and creative solutions all help farmers overcome financial obstacles. To get access to markets, it is necessary to strengthen value chain coordination and support programs such as Farmer Producer Organizations (FPOs) and contract farming. In order to drive good change and promote sustainable rural development along the value chain, it is essential for stakeholders and institutions to collaborate. Through financial inclusion and literacy initiatives, the government or affiliated parties are obligated to disseminate a great deal of information. Furthermore, in order for fintech users, particularly farmers, to get greater public recognition, the government and fintech businesses should think about enhancing the IT infrastructure.

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