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Review on public private partnership in agriculture supply chain: A step towards sustainable agriculture supply chain

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Abstract

The paper discusses about the role of supply chain management in bridging the gap between farmers and markets. It majorly highlights the potential of Public Private Partnerships (PPPs) to address various challenges faced by farmers i.e. price volatility, weak market linkages, and a lack of market intelligence. It also discusses about the role of PPPs in enhancing food safety, traceability, and availability of quality produce at reasonable prices. Furthermore, it examines the key factors influencing the success of PPPs in the agricultural sector, emphasizing the importance of effective design and management. Through an analysis of PPP models and their impact on the agricultural supply chain, the paper aims to provide insights into creating sustainable and efficient agriculture supply chains through collaborative efforts between the public and private sectors.

Keywords: Public private partnership, agriculture technology, agriculture supply chain

1. Introduction

One of the main economic drivers in India is the agricultural industry, and supply chain is essential in bridging the gap between farmers and markets. The absence of in-chain management, price volatility, weak market linkages, and a lack of market intelligence are some of the difficulties the supply chain must overcome. These difficulties have an impact on farmers' livelihoods and the sector's overall expansion. Public Private Partnerships (PPPs) in the agricultural supply chain have the potential to enhance food safety, traceability, and year-round availability of quality produce at reasonable prices (Shukla, 2016) [15]. These partnerships can also help smallholders meet stringent food safety requirements and remain competitive in developed country markets (Narrod, 2009) [12]. However, the success of PPPs in the agricultural sector depends on the design and management of sustainable irrigation projects (Mandri-Perrott, 2016) [8]. Challenges to creating and sustaining PPPs include differing incentive structures, insufficient minimization of collaboration costs and risks, and limited access to successful partnership models (Spielman, 2004) [16]. This paper aims to investigate how PPP models can benefit agri-supply chain.

Public Private Partnership: Meaning and concept

Public Private Partnerships (PPPs) are long-term agreements between the public and private sectors for the provision of public infrastructure and services (Iossa, 2018) [5]. These partnerships are influenced by various factors, including budget constraints and the potential for performance failure (Iossa, 2018) [5]. The term "public-private partnership" has multiple meanings, often linked to neoconservative and neoliberal ideologies (Linder, 1999) [7]. In the health sector, PPPs have been used to address demand-supply mismatches, with the private sector contributing efficiency and management skills (Thadani, 2014) [18]. The success of PPPs in this sector is contingent on careful evaluation and addressing challenges (Thadani, 2014) [18]. PPP also known as, a contract between a public agency (federal, state, or municipal) and a private sector organization is known as a public-private partnership. By way of this arrangement, the assets and abilities of the public and private sectors are combined to produce a service or a facility for use by the general public. Each partner shares risks and potential profits in the provision of the services and/or of the facility in addition to resources. The PPP strategy augments scarce public resources, fosters increased competition, and lowers costs and increases efficiency.

According to the Planning Commission of India, the PPP has been defined in a generic term as “a mode of implementing government programmes/schemes in partnership with the private sector. It provides an opportunity for private sector participation in financing, designing, construction, operation and maintenance of public sector programmes and projects. Marbaniang and Kharumnuid, (2020) [10] said that the risk allocation plays a vital role in PPP management. Pre-planned proposal with time frame, budget methods and materials would result in expected outcome of PPP, for which it is established.

Benefits of public-private partnerships

Public Private Partnerships (PPPs) in agriculture have been shown to have a range of benefits. They can enhance access to technology and markets, empower women, and increase income and employment for farmers (Ponnusamy, 2013; Ponnusamy, 2017) [13, 14]. PPPs also provide opportunities for advanced research and technology development, particularly in developing countries (Arti, 2017) [1].

1. **Access to Capital:** PPPs have the potential to grant capital and credit to farmers, especially small and marginal farmers who lackaccess to formal credit. It can tap into the strengths of both the public and private sectors to create innovative financing mechanisms, such as credit guarantees, to support farmers.
2. **Technology Adoption:** The incorporation of private sector involvement within the current agricultural supply chain ecosystem has the potential to introduce cutting-edge technology and innovation. This infusion of expertise can significantly enhance productivity, minimize losses, and elevate product quality. Facilitating a inclusive environment for technology adoption, the public sector assumes a pivotal role, providing training programs to empower farmers in this context. Public-private partnerships in agriculture provide opportunities for conducting advanced research, developing new technologies, and deploying new products for the benefit of small-scale, resource-poor farmers and other marginalized social groups in developing countries (Arti, 2017) [1].
3. **Infrastructure Development:** PPPs have the potential to contribute to the enhancement of agricultural infrastructure, encompassing storage facilities, transportation systems, and packaging solutions. Private sector participation entails investments aimed at establishing cutting-edge infrastructure, while the public sector offers policy support and fosters an investment-friendly environment. Public-private partnerships could be a useful tool to accelerate development in various areas of agribusiness and infrastructure (R Shukla 2016) [15].
4. **Market Linkages:** PPPs can help in creating market linkages for farmers, especially small and marginal farmers who lack access to markets. The private sector can bring in market expertise, while the public sector can provide policy support and create an enabling environment for market linkages.
5. **Efficient Supply Chain Management:** PPPs can help in improving the efficiency of the agri supply chain by creating effective supply chain management systems. The private sector can bring in expertise in supply chain management, while the public sector can provide policy support and create a inclusive environment for the adoption of best practices.
6. **Risk Mitigation:** PPPs can help in mitigating risks for farmers, such as price fluctuations and weather-related risks. The private sector can bring in risk management expertise, while the public sector can provide policy support and create an enabling environment for risk mitigation.

In recent scenario, PPPs are gaining an increasing attention and popularity because they are believed to be effective and efficient strategies specially, dealing with complex and wicked governance issues. An impressive jolt of PPP in any field depends on involvement of institutions and diligence in seeking collaboration and combining all accessible public and private skills (Peter, 2002) [3]. PPP has made formative variations in gregarious rallying, profitable commission, request relation of ranch yield, capacity structure of ranch families, drop of threat and misgivings. (Hisrich and Peters, 2002) [3]. However, there is a need for a closer examination of organizational practices and incentives to ensure that PPPs lead to joint innovation processes (Spielman, 2010) [17].

PPP for integrated agricultural development (PPP-IAD) project

One example of a PPP model in the agri-supply chain in India is the Public-Private Partnership for Integrated Agricultural Development (PPP-IAD) project in the state of Bihar. The project is a collaboration between the government of Bihar, the World Bank, and private sector companies, including agri-input companies, agri-processing companies, and logistics companies.

The objective of the PPP-IAD project is to increase the productivity and incomes of small and marginal farmers in Bihar by improving access to agri-inputs, markets, and finance. The project has four main components:

a. **Agri-inputs:** The project provides farmers with access to quality seeds, fertilizers and other inputs through a network of private-sector agri-input dealers. The private sector companies also provide training to farmers on the use of these inputs.
b. **Agri-processing:** The project promotes the establishment of agri-processing units, which can help in reducing post-harvest losses and increasing value addition. The private sector companies provide technical and financial support for the establishment of these units.
c. **Logistics:** The project aims to improve the transportation and storage infrastructure for agri-produce by promoting the establishment of private sector logistics companies. The private sector companies provide investment and expertise in the establishment of these companies.
d. **Access to finance:** The project aims to improve access to finance for farmers by promoting the establishment of private-sector microfinance institutions. The private sector companies provide investment and expertise in the establishment of these institutions.

The PPP-IAD project has shown promising results in improving the livelihood of small and marginal farmers in Bihar. The project has increased the adoption of quality agri-inputs, improved access to markets, reduced post-harvest losses, and increased value addition. The project has also created new employment opportunities in the agri-processing and logistics sectors.

Conclusion

PPPs can play a pivotal role in improving the efficiency and sustainability of the agri-supply chain in India. PPPs can leverage the strengths of both the public and private sectors to create innovative solutions to address the challenges faced by the sector. With a renewed commitment in budget 2023-24 of government to build digital public infrastructure to provide information services to farmers, set up the Agriculture Accelerator Fund, widely accessible storage capacity to optimize farmers' income and an emerging market for global trade, there are real opportunities for government and private bodies to work together through PPP models. A sound policy environment for agricultural development is basic to any effective partnership. Moreover, a clear and coherent framework should be set within which public agencies and private entities work together with other players, performing their respective roles to benefit each stakeholder i.e., farmers to customers. The state should set the policy agenda and governance mechanisms which should ensure, the interests of the primary producer are not compromised along with addressing issues of the entire agri-supply chain of the produce and not just specific bottle-neck. It is also important to ensure that the partnership should result in tangible benefits right upto the farmer level.

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