

Agribusiness (Foods) Supply Chain Management in Indian Agriculture: Affairs, Favorable Circumstances and Further Research

V. A. Anand, J. Pandilakshmi



Abstract: This article deals with an endeavor to investigate the issues looked by Indian horticulture for sustenance security as far as lacking foundation and exceptionally wasteful store network in setting of data innovation. Because of absence of effective framework and nourishment preparing industry around 30-35 percent of all sustenance's delivered in India are squandered. This paper inspects basic problems at each sub-arrangement of farming store network, beginning from the contribution to the buyer, with the end goal of coordinating them in proficient and successful way. Interests in virus chain framework, connected research in post reap innovations, establishment of sustenance preparing plants in different divisions and improvement of nourishment retailing part are compulsory for accomplishing gains in this segment. Paper extensively covers some of significant parts of agribusiness store network in India-ID of issues at various levels in the inventory network; change in the horticulture because of different production network mediations; the job of ICTs in inventory network the board; and this article additionally captures the recommendation to get better effectiveness at various levels in production network. There is a huge research gap in the exploration region, having such impending and layout for as a rule improvement there isn't much research in this field. The paper reasons that productive store network assumes significant job for improvement and contemporary issue for farming in this manner; government activity must deal with the issue of foundation advancement to accomplish the objective of nourishment security for all.

Keywords: Agriculture; Infrastructure; Supply chain; Food Security; Development; Investment.

I. INTRODUCTION

Farming (Agriculture) has been the foundation of Indian economy since autonomy and before that, at this moment with about 12 percent of the world's arable land, India is the world's 3rd major maker of sustenance grain, the 2nd-largest producer of products of the soil and the largest maker of milk; additionally it has the biggest number of animals.

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* Correspondence Author

Dr. V. A. Anand*, Assistant Professor, Department of Logistics Management, Alagappa University, Karaikudi. Email: drvaanand@gmail.com

Mrs. J. Pandilakshmi, Research Scholar, Alagappa Institute of Management, Alagappa University, Karaikudi. Email: jplmdu@gmail.com

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Affix to that an extent of agro climatic regions as well as agro-produce, fantastically ambitious farmers, a motherland that is on an essential level strong in science discipline and advancement plus an economy, which is one of the biggest on earth with one of the most amazing improvement rate and you should have the makings of a by and large phenomenal gather.

However the far reaching viewpoint for Indian agribusiness is undeniably more perplexing than those insights may recommend. The division underpins an expected 70 percent of the Indian populace, but at the same time is simply the most drowsy, having quite recently removed from a time of negative development of - 0.124 percent in 2008-2009, to ascend to an discreet 0.423 percent in 2009-2010 with upward modification in the generation, „agriculture, ranger service and fishing“ segment in 2010-11 has demonstrated a development rate of 6.6 percent, as against the development rate of 5.424 percent in the Advance evaluations. Adjusted for swelling, even this 6.6 percent advancement looks tedious when appeared differently in relation to the improvement rates in organizations along with amassing.

Today, farming records shows that for 13.8 percent of the nation's GDP, contrasted with 51 percent during the 1950s (GOI, 2011). More regrettable, India is among the world's biggest squanderers of sustenance and countenances a latent test to give nourishment security to its developing populace in radiance of expanding worldwide sustenance costs and the declining rate of reaction of harvests to included manures. The progressions of 1991 have familiar Indian cultivation with the globalization which has basic impact on cultivating and production network.

And supplementary investigation of optional information says that initial segment of changes draws out that there was an obvious deceleration of development in agribusiness during the post changes period .It additionally turns out that the development of farming fares which grabbed after 1991 have stagnated from that point forward and contaminate it went down and fluctuating in nature as it got because of some strategy changes and great storm in 2010-11 and it raised to development rate of 5.4 percent. The data on both arrangement and pay terms of trade draw out that the two do exhibits some improvement in mid-eighties up to 1996-97 yet have stagnate from that focuses are forward.

Every one of these information and data bring up that agribusiness segment is slacking division in the Indian economy and ranchers and other agrarian specialists occupied with this segment have not had the option to get much profit by new monetary strategies started in 1991.

Hence, this paper comprehensively covers some of significant parts of agribusiness inventory network in India-distinguishing proof of issues at various levels in the production network; change in the farming because of different store network intercessions. Paper likewise attempts to prescribe exercises to progress productivity at various levels in inventory network.

There is a wide research gap in this division, having such potential and plan for all around improvement there isn't much research in this field.

This article investigate the part of significant worth production network as it exceptionally noteworthy job for improvement and contemporary issue for agribusiness in this way; government activity must tackle the issue of framework advancement to accomplish the goal of nourishment for all.

II. OBJECTIVES OF THE STUDY

The main objectives of this article are:

1. To study the significance of inventory network in Indian Agriculture.
2. To investigate the issues, significance and further research in Indian Agribusiness.

III. REVIEW OF LITERATURE

Writing survey had been base of comprehension of subject. This writing audit covers numerous territories identified with the idea of the exploration addresses set forward, and consequently incorporates: horticulture, nourishment the executives, inventory network approaches, data innovation and production network interfaces. From the references, rundown is additionally performed and significant papers found in diaries had been handled too. The information are getting from the most part books, logical diaries, gathering procedures, papers, ventures documentations, and the executives arranged productions. These sources are of specific significance and incite all examination procedure improvement, particularly the early stage for beginning investigation of the sustenance store network the executives. The point of convergence of paper has been inventory network instrument in Indian horticulture. It has been surveyed through essential and optional information and data which got through use of logical research technique by figuring examination structure and directed research by usage of assorted sort of strategies to evaluate the target which incorporates look into strategies such contextual analysis, top to bottom meeting content investigation, triangulation strategy, perception strategy for essential information and data in India especially Tamil Nadu in the month of June-July 2018 with ranchers and authorities of Reliance Fresh. Auxiliary information is taken from solid sources such as yearly reports of service in farming, service in sustenance preparing, FCI, investigate documents of writers, articles and audit books from rumored nationwide and worldwide diaries, economic overview and so forth.

IV. AN ASSESSMENT OF AGRICULTURAL SUPPLY CHAIN

This article paper predominantly centers on production network board in Indian farming. One can say that it is an essential piece of the association drive. SCM speaks to best approach for client maintenance and development, upper

hand and benefit. However, there isn't sufficient consideration has been given to conceivable ex-bet measures to lessen, relieve or offer dangers, in spite of the fact that in certain conditions evaluations will be led during/after antagonistic „shocks“ and consideration will absolutely be required on serviceable adapting techniques. There is additionally absence of accentuation on both formal and casual hazard the board alternatives accessible to the various gatherings, despite the fact that by and by, most logical consideration will probably concentrate on the degree for improving or enhancing formal systems, including institutional and money related game plans, mechanical changes, appropriation of improved administration rehearses, or potentially interests in foundation. To the intensity that the general assessment is revolved around the position and welfare of less blessed farmers, by increasingly conspicuous thought would to be given to elective easygoing frameworks and improving suitability. Concentrate similarly suggests that there is nonattendance of thought had been paid to domains organized as high vulnerability which is either for individual chain or the chain of all things to be considered. The high defenselessness as of now be obvious from the past experiences and be relied upon because of unfurling changes in economic situations, guidelines, or different conditions.

Evaluation of nourishment production network the executives has not been given its due and that ought to be attempted on the necessities/alternatives for arrangement and administrative changes that influence rancher/agro venture hazard the executives just as the conceivable correction/change of legislative hazard the board instruments. Viewpoints like chain should be given as it had contributed hugely to exchange natural products, vegetables and blooms which are created in nations and it will yield distinct advantage in India. Also, an infection chain brings about decline of incidents and upkeep of the idea of plant produce. While the introductions of an infection secure office the nation over due to some institutions, helper and money related restrictions shall not be rapidly in India, which tries to be made to develop a cold chain. Sustenance misfortune decrease is fewer exorbitant than a comparable increment in nourishment generation. There is no uncertainty that postharvest nourishment misfortune decrease essentially builds sustenance accessibility. Coordinated effort between work-in-progress network accomplices has been lessening and will decrease hazard and enormously improve the productivity of by and large pipeline. Inventory network productivity in this manner depends vigorously on the fruitful long haul connections/organizations where data sharing, joint critical thinking and trusts are the key achievement factor. Provider improvement along with the assessment of the provider's presentation is the important issue of dealing with the provider's relationship. In the event that the provider's exhibition is seen as deficient, it ought to be helped to upgrade its presentation by methods for preparing and persistent improvement groups and this zone likewise require bit research work and appraisal for in general advancement. Physical framework factors are out of luck, as streets and power, which connection towns to adjacent get together and discount markets and thusly with enormous discount and terminal markets and ports.

There is a tremendous absence of warehouse and cold storage facility. There is a need of transportation office, for example, cold storage bearers to encourage capacity and the transportation of transient rural products. There is a absence in support of mechanical improvements in bundling of horticultural items and elevating bundling offices suitable to explicit products. To incorporate entire store network there is necessity of coordinated effort and co-task among inventory network accomplices will possibly occur if there is trust among the gatherings, When these components are set up, store network accomplices can do joint basic leadership and critical thinking, too an offer data about methodologies, plans, and execution with one another. The ramifications of current arrangements and establishments can be comprehended with regards to horticultural segment huge commitments to financial generation, business and the welfare of country individuals, all of which has made it hard for strategy creators to go out on a limb on rural approach changes. Research work additionally recommend that animating private agro business speculation , whether household or remote will require open interest in market foundation, yet additionally supporting cost and exchange strategies and far reaching improvement of open market guidelines and the organizations.

V. APPLICATION OF AGRICULTURE BY USING INFORMATION AND COMMUNICATION TECHNOLOGY

Disperse data which give various administrations especially in finance department. The various ICT activities are being made in numerous nations. The creating scene is looking towards ICT frameworks for taking care of their various data related issues. Writing contends that utilization of ICT offers free progression of data and makes accessible through the administrations especially to the most minimized area of the general public. Numerous public and private part ICTs – empowered activities have been embraced in India in the most recent decade particularly to cook the requirements of horticultural or in general rustic segment advancement but one have to comprehend to reach more than 110 million ranchers which is spread more than 500 local and more than 6000 squares is the tough undertaking.

A. ICT Supply Chain Model: Indian Tobacco Council (ITC) e-Choupal (India)

Indian Tobacco Council (ITC) e-Choupal is virtual commercial center, where ranchers can execute straightforwardly with a handmade process and can be understand that this would be the better cost. Geological separations don't confine support from the e-Choupal. This ICT will help essential customer in the agro market and so e-Choupal obliges direct trade. This empowers the investment of littler just as bigger players. The essential connecting with nature of e-Choupal is that it might be used for interfacing tremendous creators/little producers and little customers/huge customers, as needs be clearing out the prerequisite for chain of significance of traders. Web is utilized as a low exchange cost spine for correspondence. During initial phase, e-Choupal come up with a trial plan of actions. Once, ICT creates enormous opportunity for e-Choupal during the initial phase and development phase, now e-Choupal is concentrated in wide market areas in major states like Madhya Pradesh, Uttaranchal, Haryana,

Andhra Pradesh, Karnataka, Uttar Pradesh, Rajasthan, Maharashtra and Kerala. Indian Tobacco Council (ITC) right off the bat dispatches e-Choupal at the pilot organize in an express and this would add up to 50 to 100 e-Choupals. Indian Tobacco Council(ITC) e-Choupal today reached more than 3.5 million ranchers by yielding harvests like soyabean, espresso, rice, wheat, beans, shrimp which contributes from 38,000 towns over the states in India. The structure of e-Choupal system is appeared in Figure 1.

E- Choupal's venture is an ICT stage for exchanges in different areas. In this, the Indian Tobacco Council (ITC) establishes a city-level support for physical administration called Choupal, through Sanchalak: a lead rancher, who acts as the interface between the PC and the rancher. The Indian Tobacco Council (ITC) collects data on weather, current farming practices and market costs from sources such as the Meteorological Department, agri-college, mandis (local market) and so on, and transfers all data to the e- Choupal page.

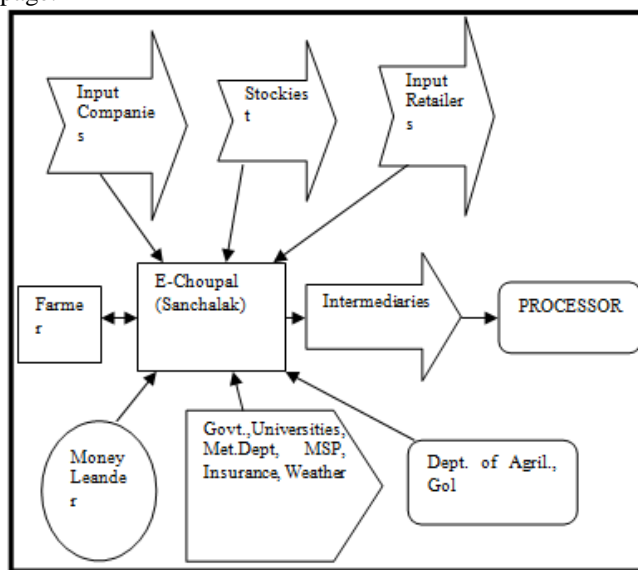


Figure 1: Indian Tobacco Council (ITC) e-Choupal supply chain model

Source: Conceptualize by Author

All information is redone according to the needs of the nearby farmer and given to the neighborhood language by means of a PC set up in the house of Sanchalak by the Indian Tobacco Council (ITC). As one see in above (figure 1) that Sanchalak get to this data and encourages its scattering to ranchers which is generated through the data gathered from Department of Agriculture(GoI), Indian Universities, Indian Meteorological Dept.(IMD), Input Firms(IF), Stockists, Retailers and some more. Climate and scientific agricultural knowledge helps farmenrs select the right crop and increase their agri-business productivity. We know the price quoted by the Indian Tobacco Council (ITC) and the local market (Mandi) rate, thus allowing farmers to achieve better prices.

B. Reliance New Supply Chain System in India:

Reliance (Dependence) Fresh was the critical attack into retailing by behemoth known as Reliance Industries Limited.

Reliance (Dependence) Fresh is by one way or another not quite the same as plan of action of Indian Tobacco Council(ITC) e-Choupal predominantly as far as utilization of data innovation a being functioning as an apparatus for increment in profitability by helping ranchers, which is real piece of Indian Tobacco Council(ITC) e-Choupal model. Nonetheless, the Indian Tobacco Council (ITC) e- choupal template for the Reliance (Dependence) Fresh is increasingly concerned with acquiring the raw material, handling it then dissemination to various retail outlets for the auspicious accessibility of nutritional products in the most proficient and viable form, using the most ideal method of technology innovation. Reliance (Dependence) Fresh propelled by opening retail outlets in Hyderabad on November 2006, then 12 "New" outlets in Chennai opened up to 40. Dependence, beginning in the southern states, tried its retail concept through a managed portion.

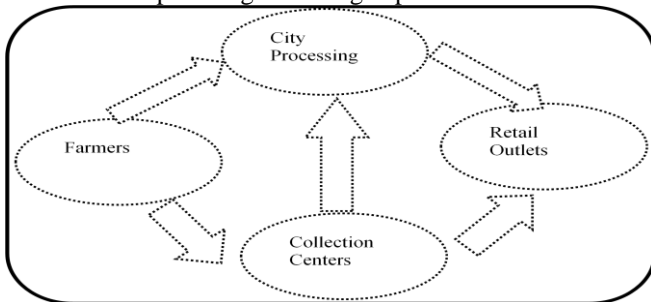


Figure 2: Reliance New Supply Chain System in India

There were three essential explanations behind Reliance(Dependence) Industries Limited(RIL) picking agri based foods and vegetables for going into retailing area as Reliance Fresh Limited(RFL). First, as far as farming-based business is concerned, it needed to pursue the very center of the incomparable Indian retail opportunity. Second, its goal was to create a high-profit business, and help was perhaps the best place to start. Third, the horrendously inefficient sustenance inventory system provided a well-resourced and especially controlled partnership such as RIL with a possibility of changing the imperfections that would look good in a similar way and improving that it has expanded the number of stores to around 1,500 from 1,150 by June 2018. The middle would get the band of value and the number of vegetables to collect that particular day.-As it is recommended (figure 2) by growers, and City deals with centers and collection centers fills up some chain as a go-between to help the retail outlet's goods. Likewise, farmers are watching the ideal position of the amount obtained by Reliance Fresh from the vegetables they need and they can go there and arrive at their amazing center under investigation.

VI. RESULT ANALYSIS:

A. Integrated Value Supply Chain for Indian Agriculture

The officials support inventory program insinuates the policy by which the advancement of agro-based product(s) from the specific supplier to a full consumer occurs with all non-considerations including costs. Typically inventory network the executives is between accomplices, for example, a retailer and a favored provider, or a restaurateur and a favored provider of a specific fixing. It implies that one can really offer the necessary products with due consideration to the penultimate customer with a lower cost.

With approximately 30 percent of the population hungry and approximately 20 percent of the population underfed, the obligation to guarantee food security for all remaining vital parts. To addition to this, there is a need to balance the price of food and services as a way to achieve the safety of the family unit. Today's changed states offer opportunities to design new tools for dynamic success and welfare to enhance the board system's sustenance grain, where customers benefit from stable expenses even as framers' interest do not persevere.

The product of agricultural commodities has expanded significantly in the nation over the decades because of constant endeavors made by the legislature as far as mechanical mediation at various degree of generation framework, combined with its value bolster approach. The generation, supply and dissemination of numerous farming products are chiefly affected by government guidelines. During the time spent financial advancement, it has been felt that there is have to re-arrange approaches and guidelines identified with horticultural items. In light of this, the administration has started agrarian approach changes identified with the creation and showcasing of farming items.

The speed of this change method is very reasonable, no matter how it may be. There are also different guidelines as well as the infrastructural holes, which upset the smooth progression of horticultural products from ranch to fork. A failure to enter the production process from modified accomplices to inefficiency in the rustic structure, causing high post-accumulate hardships, quality disintegrating, stunning cost of thing move, information symmetry and nonattendance of straightforwardness. Every member of chain acts autonomously with nearly nothing and no coordinated effort in physical and data stream (Mittal and Mukherjee, 2008).

Notwithstanding interfacing little ranchers and craftsmans to business sectors, ICTs likewise encourage most agrarian choices, for example, what to develop, how to develop and gather, when and where to sell, and at what cost to amplify the profits. Successful basic leadership identified with every one of these viewpoints at last decides the proficiency of inventory network (Rao,2007). Accordingly, an appropriate and data stream among partners of any business action is the key for fortifying inventory network productivity. The quick and creative improvements in ICTs can give monstrous chances to open just as private part offices to coordinate these advances in their store network frameworks. ICTs are particularly valuable for scattering of data, arrangement of administrations, and empowering different exchanges and the creation of awareness among the provincial masses was far removed from the legislature.

ICTs have existing, convincing and rapid communication methods that transmit new learning and information resources to society. Fortifying vertical connections between different phases of generation and handling in the agribusiness division has dependably been a significant territory for observational investigation by scientists and approach producers over the world. In any case, the pace of progress in inventory network mix and responsiveness of creation framework towards a market driven methodology is slower in India.

Ranchers are still gradually open to developing customary yields, especially rice and wheat, as they have effectively found the market for their attractive surplus-be it a course of action for administration acquisition or private neighboring dealers. However, the move in market request needs an adjusting way to deal with meet the supply of deficiency products, for example, heartbeats, oilseeds and high worth nourishment things. This improvement has been sought and supply can be ensured by effectively bracing the customer supplier relationship and dissipating correct and beneficial data from the business chain to all individuals.

B. Agricultural Supply Chain Problems and Opportunities:

The horticulture store network experiences wastefulness at each stage. Absence of appropriate framework for obtaining agrarian produce from the homestead door to the customer has prompted gigantic misfortunes in travel. The farmer scarcely advantage from any worth ascent while the various layers of center individuals acknowledge high edges. Despite the fact that farmers are forced to sell their produce in the midst of gatekeeper crops at dispensable expenses, retail costs remain higher due to different items. This has contributed to giant engraving ups in gratitude as a result of middle people's extra layers as well. All waste in the farming store system is estimated at around US\$ 11 billion, or 9.8 percent of the green share of GDP (Ahya, 2006).

Approximately 25-30 percent of rural development is wasted because of inappropriate taking care of and capacity, bother invasion, poor coordination's, deficient capacity and absence of transportation framework (Sachan et al., 2005). Aside from this, solitary a little amount of rural generation is handled Fort Worth expansion. The ability to generate food is small, largely due to inefficient processing of raw content, which is the significant part of the cost of handling (Ali and Kappor, 2005). The horticultural system can be thoroughly ordered to analyze the basic issues at each degree of the rural store network in to five sub-frameworks farming information, agrarian generation, nourishment handling, conveyance and showcasing, and purchaser request. A supported increment in rural generation and efficiency is generally subject to the constant advancement and utilization of present day agrarian sources of info, for example, seeds of a superior quality, composts, pesticides, ranch executes and apparatus. Because of a divided info showcase, rancher faces various issues in obtaining quality contributions on schedule and a sensible cost.

One topic that seems to hold steady all through the writing around there is the significance of taking a comprehensive view, and the foundational idea of collaborations between the members. The acknowledgment of the relationship of all accomplices in a supply system seems, by all accounts, to be a significant impetus for successful mix. In this sense, associations moving to execute coordinated production network the board frameworks could be believed to formalize methodologies to more readily deal with this between reliance, and to use it to shared preferred position. In the meantime, it is likewise clear that this prerequisite to take such an all encompassing and fundamental perspective on the store network goes about as an obstruction to increasingly broad usage.

The main thinking of grasping a store offers a broad perspective, gives simple possible preferred position from one perspective and on the diverse it takes trading accessories to consciously think and act. The task of

increasingly increasing efficient and interconnected structures is to energize such an attitude and use it to advance the collection and use of technologies and techniques that are empowered. At the end of the day, this survey of the writing serves to feature the between reliance between combination (advances, coordinations, and associations), a vital perspective on store network frameworks, and usage approach. Every one of the three need to illuminate and support each other all together for the executives of supply chains to have the option to convey on the guarantee of advantages for all exchanging accomplices. Financial changes and advancement in the agribusiness area has stressed the requirement for changing Indian horticulture by planning agrarian inventory network model covering developments at cultivating levels, which can enable ranchers to recapture productivity in a maintainable way under changing conditions with appropriate confirmation of market courses of action (Rao and Punwar, 2004). The changes in agrarian showcasing framework to guarantee cooperation for setting up direct linkage with ranchers, limit building and foundation improvement in managed markets, augmentation of street system and transportation, stockpiling and warehousing, advertise knowledge framework, presentation of product by building up item are some significant territories of mediations, yet the progressions are occurring at a moderate pace.

In order to build a competent and viable store network system in Indian farming, there is a desperate need to enhance the functioning of controlled showcases and correct the APMC act by all state government according to the model of follow-up on agricultural promotion suggested by the local government to guarantee private investment in the stock market structure in a sorted and valid manner. This will allow private agro management units and business managers to legally link with network production, knocking out different delegates.

For expanding productivity in sustenance handling portion, the procedure of crude material sourcing should be overhauled in a proficient hierarchical system with legitimate in reverse linkages. The rise of agribusiness exercises and sustenance retailing are giving the two chances and difficulties to arrangement creators. There is have to asses all the current strategies influencing the agrarian store network and change them according to the necessities of market powers, with legitimate administrative instruments to secure the enthusiasm of the considerable number of investors within the chain.

C. Further Opportunities for Research

As our analysis reveals, the board needs comprehensive research into the noteworthiness and advantages of the board's food store network. In spite of the fact that a larger part will consent to the significance and potential advantages of it, by one way or another nourishment inventory network the board does not appear to happen frequently enough by and by. Associations seem to have huge challenges in advancing from hypothesis to the fruitful execution and routine with regards to store network the board. This is a vital yet provoking difficulty to illuminate. Much of the time, nourishment store network not has consistent chains, enhanced streams, or systems of coordinated associations.

In actuality, the structures and their comparing wordings, again extravagantly outlined, at last are managing organizations attempting to improve dyadic connections. Along these lines, Indian farming needs efficient ways to deal with the execution of production network framework and we need sound observationally based research to keep on building up the field and to investigate the ideas identified with store network. Important efforts would be required to apply both qualitative and quantitative research practices to further refine ideas in order to advance useful applications as well as scholarly speculations.

Are there critical geographic and statistic factors that effect on the choice to execute, for example, organization size or industry segment? Can organizations be recognized from each other based on this degree of usage model? Why India's Food Corporation (FCI) has organized among its various sister units and India's legislature has retained its distinctive strategy. Given the clear logical inconsistency in writing between promised benefits and still scant evidence of widespread usage, it would seem beneficial to investigate the elements that make up and reinforce this obvious gap.

VII. CONCLUSION

While investigating the topic of the food store network in Indian horticulture, it can be said that elevating and entering the rural system is of the greatest significance. There is also no emphasis on both formal and casual hazards available to the board, despite the fact that practically speaking, most systematic consideration will probably concentrate on the extension for improving or enhancing formal components, including institutional and money related game plans, innovative changes, reception of improved administration rehearses, or potentially interests in framework. To the degree that the legislature is principally centered around the set particle and welfare of less fortunate ranchers, at that point more noteworthy consideration would should be given to elective casual components and improving their adequacy.

Concentrate also indicates that no attention has been given for regions identified as "high risk", either for individual members of the chain or for the chain as a whole. Research into the rural framework and production network has not given its due consideration and should be taken into account in the requirements / choices for strategy and administrative changes that influence rancher / agro-business hazard the executives just as the conceivable modification/change of legislative hazard the board instruments. Angles like virus chain should be given more thought as it could results in the decrease of misfortunes and maintenance of the nature of plant produce. While the presentation of a virus fasten office across the nation because of some institutional, auxiliary and budgetary imperatives in India may not be quickly feasible, efforts to build a cold chain must be made.

ICT handiness is rooted in enhancing Agricultural area's productivity and this need to be discussed by experts. Nourishment misfortune decrease is less expensive than a proportional increment in sustenance creation. On the off chance that endeavors are not made to modernize the collect taking care of framework for agricultural harvests, at that point postharvest misfortunes will keep on having a negative monetary and ecological effect. There is no uncertainty that postharvest nourishment misfortune decrease essentially builds sustenance accessibility. A productive cooperation between partners will lessen hazard, misfortunes and

extraordinarily improve efficiency to ensure safety and development of aid.

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AUTHORS PROFILE



Dr. V. A. Anand, is currently working as an Assistant Professor in the Department of Logistics Management, Alagappa University, Karaikudi. He has published many papers in national and international conference.

Mrs. J. Pandilakshmi, is currently doing as research scholar in the department of Alagappa Institute of Management, Alagappa University, Karaikudi.