

Uzhavar Sandhai - A Paradigm shift Supply Chain Management in agriculture.

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Abstract - Agribusiness is one of the significant monetary business as well as critical one in India. Governments be it at the local, state as well as at the national level are focused on the wellbeing of the farmers across the country. One important scheme was to launch the Farmer's market in the state of Tamil Nadu. The farmers market plays a critical role connecting the farmers directly to customers and thereby eliminating the middlemen, thus providing more revenue to the farmer as well as having a control over the selling price assisting the customer as well. The supply chain changes in the farmer's market model are studied in this paper. It consists of drivers of SCM which helps to identify what are the methods to smoothen the supply. The uniqueness to it is major advantage to farmers, the network design is to proper flow of goods. It's because of assortment of creation, request bases and wasteful coordination's of the executives. The necessary execution measurements to be on target and ceaselessly improve and furthermore some future situated conversations for a viable and effective working of a harvester's market. By implementing this model, it will be beneficiary for both farmers and customers.

Keywords: competitive distribution channel, demand management, logistics management, risk management.

1. Introduction

Farming involves a truly significant part inside the development of economy of our country, which is additionally the foundation of the monetary framework. India is fundamentally a rural country. The flourishing of the Indian economy relies upon the course of horticultural creation. Obviously, agribusiness contributes a genuine portion of the worth of India. In India, agribusiness meets practically the entire food necessities of individuals. Farming additionally gives feed to support

domesticated animals whose number hurries to numerous crores.

In the field of horticulture, advertising decides the value of the farming item as far as money and conveys them to a definitive client. The vast majority of the ranchers sell their items through town level business sectors, fairs, Co-usable Societies and so forth in the above cycle of rural showcasing, the brokers abuse ranchers likewise as customers. To kill the agents among ranchers and buyers, the govt of TamilNadu presented the new idea, specifically "UZHAVAR SANDHAI" in 1999.

For the most part, the discount financial specialists buy the Agricultural items from the ranchers at a very lower cost. They likewise get the commission from the ranchers for the deal made. Thus, new vegetables and natural products bought at the lower cost from the ranchers are sold bowed retail money managers at more exorbitant cost and consequently the retail financial specialists sell those Agri Products further at exorbitant cost to the purchasers. Thus, the Government of TamilNadu has presented an alternate plan of selling, which is perceived as "UZHAVAR SANDHAI" to derive benefits to hard worked farmers.

Uzhavar Sandhai is started by Government for the welfare of farmers to get right price for the product and also for consumers to get fresh vegetables, Uzhavar sandhai is daily based market which used to happen in early morning. Uzhavar sandhai where no intermediators come across its directly between farmer and consumer it's a good platform for both. In Uzhavar Sandhai Administrative Officer is allotted who is responsible for the farmers price fixing, providing facilities and amenities to them and allotment of shops is done by him.

1.1 Literature Review

Sivaraj (2018) upholds the way that the immediate advertising by ranchers is being energized as a creative channel. Uzhavar Sandhai, the ranchers' market was a mutual drive begun by the public authority of Tamil Nadu in the year 1999. The primary point of Uzhavar Sandhai is to assist ranchers with bringing and sell their produce straightforwardly to customers bypassing brokers and commission specialists. The ranchers don't yield the advantage as the advertising framework for products of the soil is for the most part in the possession of agents. Brokers exist at different levels between the rancher and the purchaser and endeavour through acts of neglect in gauging, taking care of and instalments. The target of the investigation is to about the elements affecting the ranchers' market their produce in Uzhavar Sandhai in Coimbatore locale.

Anil Kumar (2018) states that Agriculture store network the executives (ASCM) faces explicit difficulties like reliance on climate conditions, contribution of very enormous number of entertainers and absence of proficiency in most of the labour force that led to necessity of data and correspondences advancements (ICT).

Muhammad Ayaz et al. (2019) (IoT)- based advancements and to portray its applications in the agribusiness inventory network setting in an agricultural nation like India. In view of writing, an aggregate of six IoT-based advancements with regards to ASCM have been recognized in this work. The use of IoT in agri-food areas in India can advance the improvement of horticulture inventory network by lessening the wastage extensively and satisfy the necessities of clients in a most supported manner. IoT-based innovation has a critical extent of coordinating in different elements of ASCM in mechanical settings in a non-industrial nation like India.

Adrienn Molnar's et al. (2015) examination portrayed in this paper was intended to distinguish the components that impact the significance limited scope ranchers put on various promoting channels of short food supply chains. The centre concerns two altogether various kinds of market that are available in the greater urban communities in Hungary: 'customary' markets where there are no limitations on area except for the rancher market relationship depends on official

agreements, and recently rising ranchers' business sectors at which just neighborhood producers can sell impromptu, utilizing their own versatile offices. Results depend on a review that was led in 2013 among 156 Hungarian market arranged rancher sellers at various sorts of market and affirm that various business sectors are visited by various kinds of ranchers. Ranchers who favor ordinary business sectors are commonly less taught, work on more limited sizes and are more dedicated to their picked markets through long haul contracts (which diminish the likelihood of their difficult different outlets).

Levent Cetin (2014) stresses that agrarian wares created need to go through a progression of tasks like collecting, sifting, winnowing, sacking, transportation, stockpiling, preparing and trade before they arrive at the market, and as apparent from a few investigations the nation over, there are extensive misfortunes in crop yield at all these stages.

Somashekar C et al. (2014) A new gauge by the Ministry of Food and Civil Supplies, Government of India, puts the absolute preventable post-reap misfortunes of food grains at 10% of the complete creation or around 20 million Mt, which is comparable to the all-out food grains delivered in Australia every year. In a country where 20% of the populace is undernourished, post-collect misfortunes of 20 million Mt yearly are a considerable avoidable waste. As indicated by a World Bank study (1999), post-gather misfortunes of food grains in India are 7-10 percent of the all-out creation from homestead to showcase level and 4-5 percent at market and conveyance levels.

Golnar Behzadi et al. (2013) believes that in the last two decades, food safety has become one of the main concerns in the area of logistics and supply chain management and also in cold chain. Safety is a critically sensitive area in this category as if the required safety conditions are not satisfied during the logistics process, foods will soon deteriorate and probably become unsafe to use by customers. However, because of the complexity in nature of such problems, research so far is limited to the quantitative models with deterministic parameters and the robustness of this nature still remains unanswered. In this paper, a robust optimisation model has been developed aiming to maximise the food safety aspects and thus to minimise the logistics cost of the cold chain system under various uncertainties and customers time windows restrictions. The model has been solved by

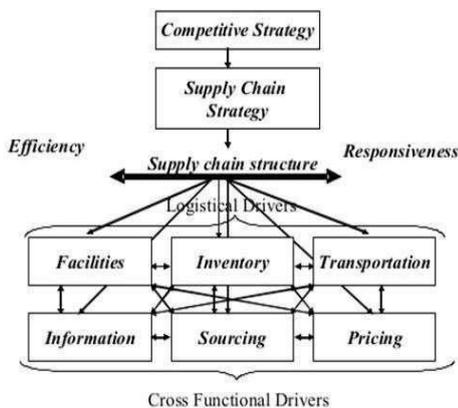
artificial bee colony intelligence algorithm through MATLAB 8 software.

Piali Halder (2011) [6] states that as the Indian populace is expanding, the interest for new foods grown from the ground is additionally expanding. Inferable from the transitory nature and short timeframe of realistic usability, these things require appropriate capacity and transportation offices to reach to the client in new state. An absence of interest in farming makes the country helpless against global value stuns just as conversion scale instability. The current examination attempts an exhaustive survey of essential and contemporary writing accessible and attempts to clarify the difficulties and openings in store network the board to make an extension between rustic and metropolitan market. It additionally brings out applicable exploration holes and disregarded issues in the SCM.

1.2 Objective of Uzhavar Sandhai

The Objective of launching Uzhavar Sandhai was to guarantee direct contact between the harvester and public part with new vegetables and natural products at sensible value every day with no impedance of go between, right estimation to the customers. Also, it provides full fulfilment to the ranchers and public.. part with the new products of the soil at the lesser cost than that of retail cost to customers. The rancher market additionally works as a Technical Information Centre to the ranchers. The market additionally works as a Technical Training Centre to the ranchers. Seeds and Other Inputs like manures are likewise given in some ranchermarkets.

2. Drivers of SCM in Farmers Market



Source: <https://scmkelasc.files.wordpress.com>

Fig.1 Driver of SCM

a) Forecasting

- Forecasting is mainly based on previous day sales, past experience, buying pattern of customers and seasonality also affects it to a great extent.
- Quantitative techniques such as weighted average method and qualitative techniques such as judgmental methods are used.

b) Facility

- No separate aggregators are required in between because farmers directly bring their goods from their farm to the Uzhavar Sandhai
- SCM becomes easy here and the overhead costs gets reduced.

c) Transportation

- Tie ups with state transport is made and hence no charges for the luggage's of farmers.
- Farmers also use private transports and road transport is preferred since only local farmers uses the nearby farmer markets (20km approx.).
- A vegetable and fruits carrier made up of iron is provided in the Uzhavar Sandhai for transportation of goods inside the Uzhavar Sandhai.

d) Sourcing

- No separate ordering and sourcing costs, since farmers grow their own crops from their own lands and sell directly.
- Sourcing is simple, goods will come directly from farms through farmers.

e) Pricing

- The market board of trustees (govt) will each day convey the moderate discount costs of vegetables.
- In view of something similar, the costs of vegetable are fixed in discussion with the rancher's board of trustees, which might be 20% - 25% higher than the entire deal cost and lower than the neighborhood retail market costs nearby.

- Hence a mutually beneficial arrangement for the two ranchers and buyers.
- But there is an opportunity of falseness as talked about in the table.

f) Inventory

- Some Uzhavar sandhai has cold storage facilities and some does not have facilities to store.
- Hence in most of the cases stocks are not kept and sales are based on day-to-day basis.
- Hence zero inventory management costs.

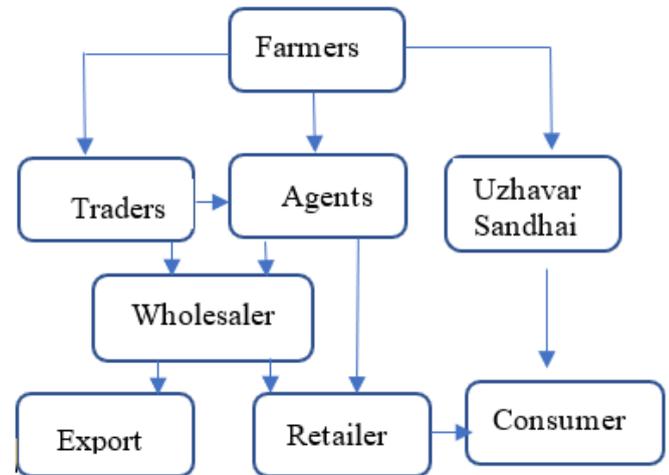
g) Information

- Price is fixed by the government and farmers are selling the goods directly to customers as per the norms.
- Hence only limited layers in the chain and hence very less chance for BULL WHIP effect.

2.1 Challenges faced in SCM in farmer market

- Managing availability of goods as demanded by the customer.
- Never ending wrath between organic and inorganic goods, hard to differentiate in terms of price and quality.
- Street markets attracts wholesalers because of available quantity difference.
- Price is fixed by government and hence the beneficiary in terms of profitability is a bit more inclined towards the customer rather than the farmer.
- No reverse supply chain is possible/applicable.
- Forecasting the market correctly (e.g., onion price issue)

2.2 Network design in SCM in farmer market



Source: Authors own

Fig 2. Network Design

- The vegetables are just randomly set into groups (E.g., brinjal belongs to group 1, banana into 2 etc).
- Each Group will have 10 to 15 shops so that farmers having the same vegetables will be grouped and they will be selling sitting a row (series of shops say 1,2,3). This is done to avoid confusion for the customers and also for easier identification of their needed vegetable.
- But in sandhai since it is auction based, this group lot-based system is not there.

a) Performance metrics

- Store network Operations Reference model has been taken as an industry standard for execution estimates that perceives six significant cycles: plan, source, make, convey, return and empower.

The model falls under 5 general classifications:

- Cost
- Assets
- Reliability
- Responsiveness
- Agility

Further the model develops the following measures:

b) Perfect Order fulfilment

- It measures the reliability in a customer facing perspective and it is a bit low for farmers market because customers can get what is available and they cannot order according to their wish.

c) Order fulfilment cycle time

- It measures the reliability in a customer facing perspective. The average cycle time for a customer to complete the purchase is around 5 to 10 minutes.

d) Cash to cash cycle time

- It is an internal facing perspective and the cycle time is a bit huge for this system since the investment happens much earlier in this case and
- the payback period is high.

e) Return on working capital

- It is an internal facing perspective and this factor is decided by a lot of external factors like government policies, price of petrol, natural calamities, sudden spike in demand.

f) Supply chain cycle time

- This is very low since it is a kind of day-by-day sales and shortage of inventory takes a lot of time for replenishment.

2.3 Uniqueness in Uzhavar Sandhai

Sl. No	Description	Uzhavar Sandhai	Santhai
1	Photo ID Cards	A photo ID Card with details of farmer is given (renewed every 6 months)	No ID Proofs
2	Facilities Offered	Seeds for Hybrid Growth Larger cultivation in Low land space techniques Proper Sanitization	Sanitation Drinking Water
3	Chance Of Fraudulence	Price of product is same inside entire market if price variation is there seller will be suspended	No control is taken as it's an open market
4	Distance of Farm	From farmers location, up to 20km can sell in a market, so nearby farmer gets chance to sell	No distance anyone can sell
5	Allotment of Shops	Based on Lot Method monthly Basis On Group Basis, all the sellers of Onion will be allotted in an area	Assigned by Association members on charge basis
6	Forecasting	Based on Previous day sales	Forecasted through experience
7	Stock Management	The stock will be used for next day as unique place	It's not a unique place so sold at the end of a day at a low price, they might see the loss.

8	Bulk Purchase	It's daily based, so all hotel shops and shopkeepers used to buy for their sales.	Every week sold, so nearby residents buy.
9	End Consumers	Consumers are Shop keepers, Hotels	Residential Persons
10	Pros and Cons	Consumers- Fresh Vegetables as sold in early morning Price 15% Lesser than the retail market. Farmers- No rent for the shop	Consumers- Not Fresh as sold in the evening time and excess from morning market are sold. Farmers- Rent for the Place.
11	Price Fixation	The government will fix prices every day moderately. Price doesn't vary from a distributor.	The government will not involve in Price fixation. Price varies from the distributor and no Standardization.
12	Storage Facilities	Storage facilities available as place being allotted.	Storage not available as place is a common area.
13	Waste Management	Corporation allots proper sanitation area for disposal of daily waste and used for fertilizer purpose.	No sanitation place and disposal done everywhere and infection occurs.

3. Conclusion

Thus, by making Uzhavar sandhai scheme we can make benefit to farmers by getting price for their product and also for customer towards low price and fresh vegetables which are not hybrid. Farming is a back bone of India. There are numerous emerging technologies in the supply chain but few go glove in hand with the industry under study, they are: An autonomous selling can happen with help of smart cards, just like an Amazon go concept. Real time connectivity and visibility into availability of goods and processes can be done through an app-based service which bridges the farmers, management officers and the customers. An efficient waste management and recycling system. Hence a complete Supply chain integration through digitization. In this technique supply chain plays a vital role that is connectivity from harvesting of seeds to storing in Inventory, Logistics, Selling of Goods here SCM is most important factor to enhance smooth flow.

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