

Samriddhii: Redesigning the Vegetable Supply Chain in Bihar

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Samriddhii demonstrates the successful redesign of traditional vegetable supply chain. Information pertaining to the financial as well as the customer base aspects reflect that embedded business model is economically viable¹, scalable² and replicable³. The

traditional vegetable supply chain is fraught with many challenges. Following cause and effect diagram (fishbone diagram) depicts the existing difficulties in the current vegetable supply chain.

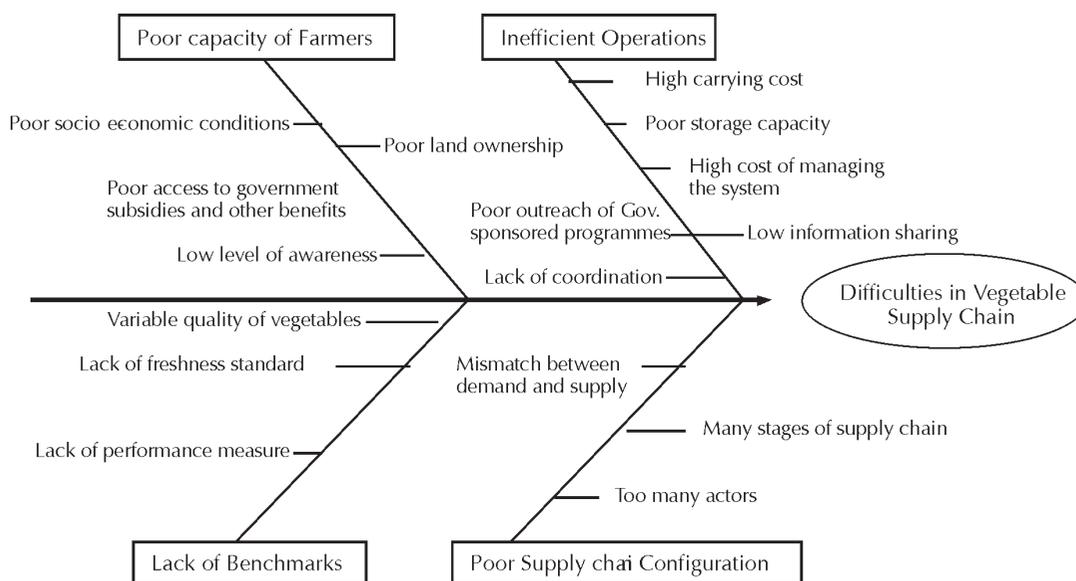


Figure 1: Cause and Effect Diagram Showing Difficulties in Vegetable Supply Chain

From supply chain perspective, the traditional vegetable supply chain is highly fragmented and the associated flows of vegetables, information, funds and embedded service is blurred. Some actors operate in almost independent manner and some operate as part of a cartel. These leads to cascading of effects culminating in fluctuations in the perceived demand and supply (i.e. Bullwhip effect) leading to poor resource management and supply-demand mismatch.

The Samriddhii supply chain seems to address these challenges by taking cues from AMUL (cooperative based business model), Dell (elimination of intermediaries) and e-chaupal (linking farmers to market by providing dynamic agricultural and marketing information). The redesigned supply chain is depicted as follows.

1. Ability to self support. The initial profit making is encouraging however, proper business plan needs to be deigned by setting milestones and metrics and develop capabilities to adapt with change market conditions which will measure progress towards self-support and continuous profitability.
2. Ability to expand customer base either by attracting new customers or by selling more to existing customers.
3. Means the business model can be reproduced in a new location.

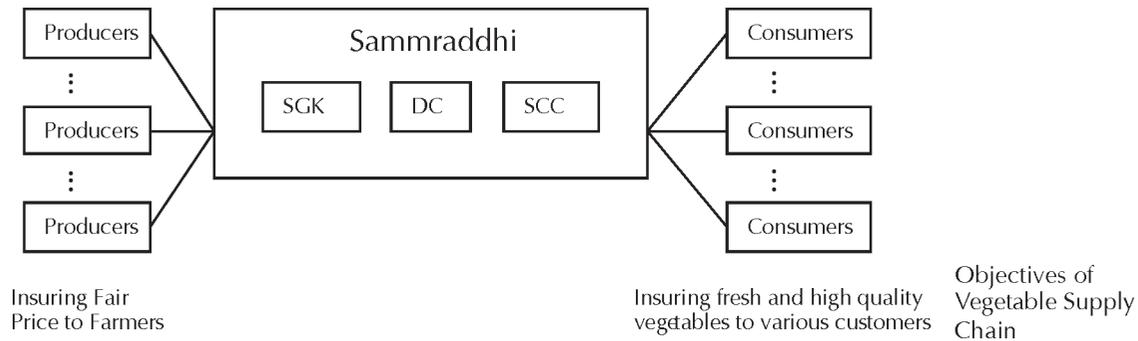


Figure 2: The Sammraddhii Vegetable Supply Chain

The redesigned supply chain eliminates non-value adding actors. Its streamlined processes ensure the two-way real-time flow of information and flow of vegetables through transportation system with inbuilt cold capabilities. The redesigned supply chain involves primarily procurement order cycle and customer order cycle. From the process perspective it is driven by pull based processes. The boundary between push and pull processes has been shifted towards the upstream side of the supply chain. The reconfigured supply chain focuses on overall value generation and facilitates the development of all actors. In this context development is both a process and an

outcome. As process development means improving capacity of farmers by providing equitable access to information and know-how. This also involves building their ability to asses and interprets agricultural information. Development as outcome is reflected in enhanced level of income of farmers and their participation in collective activities.

In order to manage the performance of vegetable supply chain Samriddhii need to define key performance indicators (KPIs). As depicted in Table 1 these KPIs are related with management of flow of vegetables from procurement to the delivery to customers.

Table 1: The KPIs for Samriddhii Vegetable Supply Chain

KPI	Underlying Meaning
Shelf life of vegetable, Obsolescence(each container basis), Percentage of target group served, Availability of right volume of vegetable (on any given day)	Reliability
Delay in transportation (in hours), Order fulfillment lead time (in hours)	Responsiveness
Choice to customers (selection from availability of all seasonal vegetables)	Flexibility
Pure organic vegetables (as % of Total vegetables)	Quality
Wastage of vegetable (weekly basis), Loss in transportation (each trip basis), Blocked funds (weekly or monthly basis), Loss due to poor packaging (each container basis)	Asset
Cost of vegetables sold, Total supply chain cost in serving fresh vegetables to customers	Cost

Samriddhii supply chain is building operational excellence in its activities so as to provide customers vegetables at a competitive price and through convenient delivery. In order to strengthen operational excellence capabilities, Samriddhii needs to provide timely, accurate and the visibility-of-orders and in-transit inventory. This may be facilitated by using track and trace movement of vegetables from procurement to the end customer delivery and also feeding back the information about customer's requirements. Vegetable processing systems may be designed around lean thinking and principles of Kaizen. Interstate transportation of vegetables

requires the compliance with Union and State regulations. Transportation of vegetables requires the use of different modes of transportation, use of coolers or refrigerated trucks, transport and warehouse management systems. Finally Samriddhi needs to forge collaborative relationships with various supply chain actors and share similar commitment towards continuous improvement.

Samriddhii kind of model is quite relevant in Indian context as it can be replicated to provide livelihood to masses. It improves overall resource management and creates value for all the actors thereby, leading to societal benefits.

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