



A Study on Supply Chain and Logistics Solutions for Rural Enterprises in Uttarakhand

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Abstract

This paper helps in providing detailed information about the challenges faced by rural enterprises and the problems related with it. It examines the growing awareness and brand consciousness among people across different socio-economic classes in rural India and how the rural retail markets are witnessing significant growth. This paper presents the issues related to distribution network of rural enterprises in rural areas. Now- a- days rural market is an emerging market with largest customer base but the scattered market in rural areas is a big challenge for enterprises to focus on. This paper throws light on eliminating those challenges which are typically obstacles for rapid growth. The flow of goods in rural sectors encountered with various threats which hampers the regular supply. To design an effective supply chain and logistics network in Uttarakhand, there is a need to focus on understanding the terrain, identifying key locations, optimizing transportation routes, and leveraging technology to ensure efficient and cost-effective movement of goods. The data collected from various sources are examined thoroughly which helps in designing the strategies that would provide direction in solving problems related to supply chain and distribution.

Keywords: brand consciousness, scattered market, obstacles, leveraging, strategies.

Introduction

Rural entrepreneurs play a crucial role in both economic and social development. Rural entrepreneurs mostly constitute small businesses in highly competitive, low- margins market. Their role is important for increasing economic independence. The entrepreneurs today are concentrating more on economic development. The rural entrepreneurs are important as they enhance their businesses and drive economic growth in their fields. Entrepreneurs starting new businesses and stand their own enterprises due to perceived and available opportunities. Rural entrepreneur main focus is on income generation. Income generation is flexible as it is in-house and home generated.

The education and skills of the rural entrepreneurs play a crucial role in supporting rural enterprises. Rural enterprises have access to micro-finance, government subsidies and bank loans. Mostly rural enterprises work as a leader. They are encouraged to participate and take on roles in self-help groups. The government provides various

schemes such as Start-up India, National Rural Livelihood Mission, and other local initiatives to promote rural entrepreneurship. NGOs and SHGs play an important role in empowering rural entrepreneurs. Rural entrepreneurs play a significant role in their societies and communities. Rural entrepreneurs empower initiatives for income levels, improve business growth and enhance social mobility. Rural entrepreneurs in Uttarakhand constitute the majority of the population living in rural areas particularly in mountains and hilly areas. These are traditional group of artisans mainly engaged in agricultural activities and hand-made goods. Rural entrepreneurs in Uttarakhand face socio-economic problems and geographical issues which can halt their growth and success. The rural economy is predominately based on agriculture, handicrafts and small-scale industries. Rural entrepreneurs face challenges in many aspects like lack of skilled knowledge, poor infrastructure, lack of entrepreneurship ability, lack of finance, poor approach to market e.t.c;

RURAL ENTREPRENEURSHIP

People are migrating from rural areas to urban areas due to lack of job opportunities and rural youth is unable to find any options for their growth. Not only does this problem lead to out-migration from the villages but also puts undue pressure on the infrastructure and amenities of the urban areas. Rural entrepreneurship facilitates self-employment, generates additional employment and income earning opportunities for local people leading to the wider distribution of income, on the one hand, and maximum utilization of local resources within the boundaries of the rural areas, on the other hand. Rural entrepreneurship is defined as entrepreneurship whose roots lie in the rural areas but which has a lot of potential to drive various endeavours in business, industry, agriculture, etc. and contribute to the economic development of the country. Rural entrepreneurship can be classified into four types viz: Individual Entrepreneurship, Group Entrepreneurship, Cluster formation and Cooperatives. Innovative entrepreneurship is characterized by innovative and ground breaking thinking. Innovative entrepreneurs rely on creative ideas, and focus on the invention and development of new, original products or services (Benzing et al., 2009; Samila and Sorenson, 2011). Process entrepreneurship, on the other hand, focuses on the existing processes, or the development of technologies that can improve the quality of existing products or services. Entrepreneurs of this type work in a more certain, secure environment, and their risk level is low compared to that of innovative entrepreneurs. (Schumpeter, 1951; Carland et al., 1984). Rural Entrepreneurship implies entrepreneurship emerging in rural areas as it harnesses local resources based on innovation and invention, provides employment for local youth and thus contributes to 'sustainable economic development'. Rural Entrepreneurs focus on creation of a new organization that introduces new products, serves or creates a new market, or utilizes a new technology in a rural environment. The Chinese Economic Miracle in the 21st Century is a classical example of Rural Entrepreneurship. (Goodwin, 2018)

Objective of the Study:

- 1) To Study the supply chain of rural enterprises in Uttarakhand.
- 2) To identify the gaps in different stages of supply chain.
- 3) To provide solution by recommended a chain model.

Research Methodology:

For attainment of research objective explorative research has been selected which involves secondary data. In secondary data various research gaps of previous literature reviews has been analyzed and various data from Government agencies, journals and research work are considered.

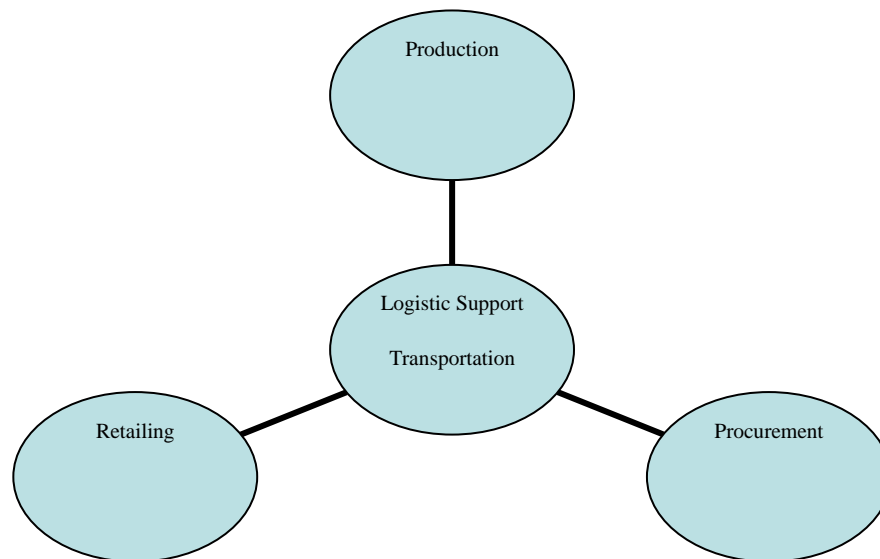
Analysis of Supply Chain of Rural Enterprises:**1) Integrated Rural Supply Network**

The business processes in the rural framework as follows:

Production- Production of wooden, craft, hand- made products

Procurement- Procurement by Govt. agencies, NGOs, distributors

Retailing- Rural retailing through retailers

**2) Traditional Rural Supply Chain**

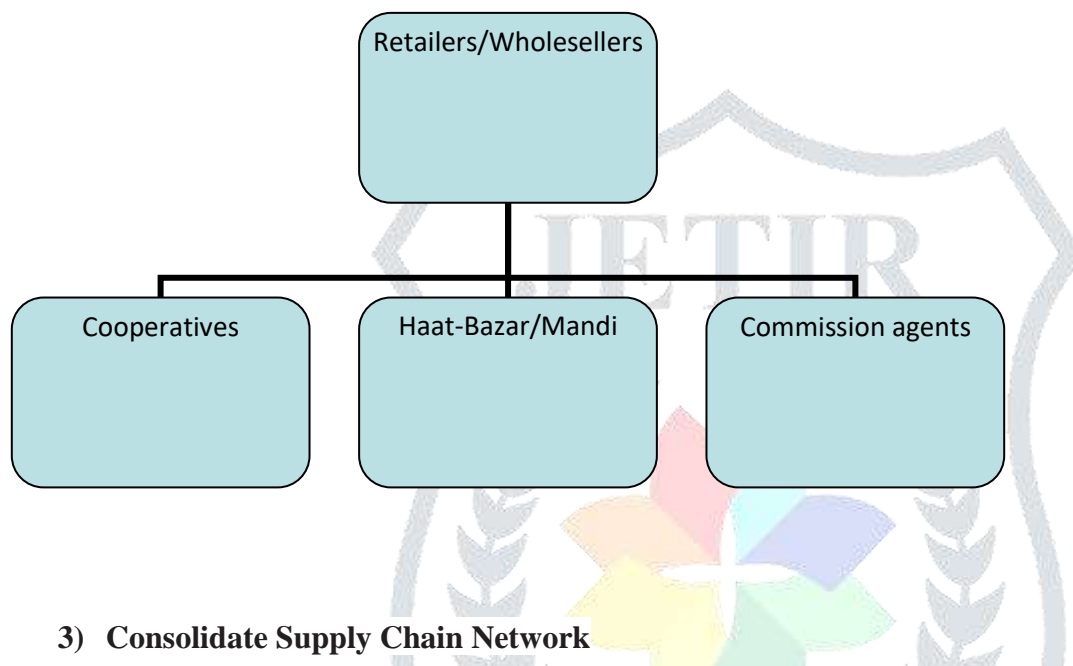
Agriculture produce flows among the various sources:

Retailers/Wholesalers- These are the last level chain of agricultural produce

Cooperatives- The marginal farmers jointly sell their produce to the cooperatives.

Haat Bazar/Mandi- The rural farmers bring their produce directly to mandis.

Commission Agents- These work as a intermediaries.



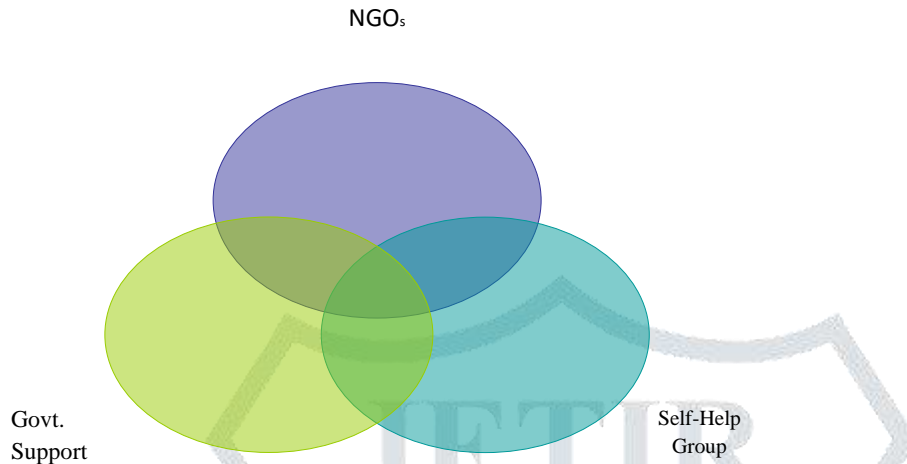
3) Consolidate Supply Chain Network

NGOs- The NGOs provide facility for marketing of products especially wooden and handloom items. The NGOs provide assistance for distribution of their products.

Self-Help Groups- This kind of distribution channel is found in most of the small towns of border areas of Uttarakhand. Artisans have created SHGs and Co-operative societies with the guidance of Government agencies and NGOs. These SHGs and Co-operatives then market the handicraft items weaved by these artisans in different trade fairs and exhibitions that are regularly held in various districts of Uttarakhand and Delhi. Besides, some SHGs also sell these items through Saras Market and Himadri Emporium. Saras Market and Himadri Emporium are platforms, which provides a common platform to the artisans/weavers for distribution of their produce. Government of Uttarakhand and UHHDC promotes these emporiums.

Government Support-

To strengthen the distribution of woollen handloom and handicrafts, Government of Uttarakhand has opened various retail shops by the name of “Himadri Emporium” in various tourist destinations across Uttarakhand. These emporiums are located at places like Badrinath, Haridwar, Nainital, Ranikhet, Uttarkashi, Srinagar and Dharchula.



Gaps and challenges of supply chain management in rural areas-

This process is a linear network where customer purchases the products from the retail shops; a retailer has to purchase the products from the wholesalers and the wholesaler from the manufacturer. The supply chain accounts for 60-90% of all cost incurred by a company to mobilize the product. A 2% improvement in all the supply chain management process has an enormous impact on other internal expenditures of the company. The following factors are reasons for inefficient supply chain network abstaining reach ability and convenience.

- The limited reach of local regional products.
- More concentration on agricultural activities.
- Lack of roads and channels for effective sales and distribution management of goods and services.
- Monopolistic policies of local and regional players.
- Influence of social norms on the customers.

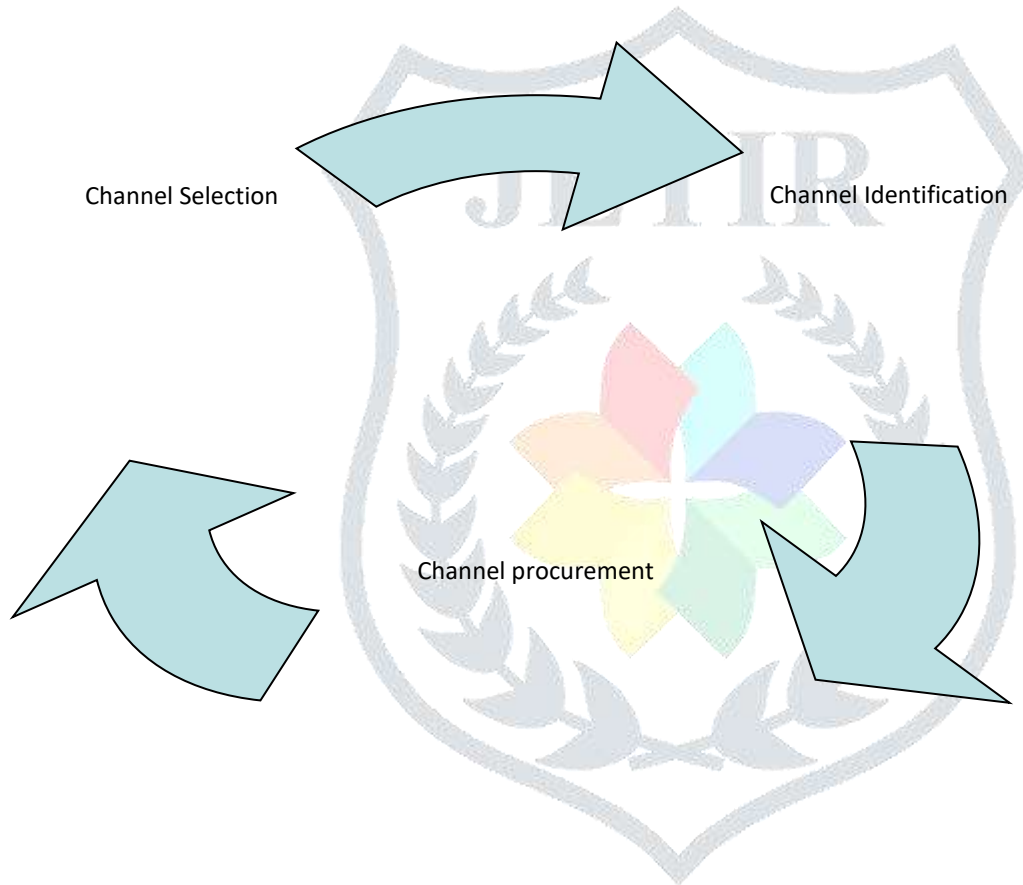
In rural areas, there is high demand for rural SKU which increases the cost of transportation and packaging. One of the major problems is the inability to forecast customer demand which affects inventory orders. The other external factors attached to supply chain issues are robbery, leakage or damage while unloading. Another issue from the supply side is that in India, there are a lot of check posts, and heavy vehicles like trucks have to wait for long hours to cross the check post. In addition, 80% of the rural consumers travel to distant areas approximately more than 20 kilometers to make more significant purchases.

Logistic solutions:

A logistic network is basically an interconnection and interdependence among various channels of distributions. Given below in the chart the problem arises from the selection of particular channel of distribution at

the early stage and then it ends with the final selection. To solve this problem various solutions have been discussed which is divided into three categories:

- 1) Point Solution
- 2) Supply chain solutions
- 3) Integrated logistic solutions



Classification by logistics solutions is given as below:

1) Point solutions:

- **First-party logistics (1PL)** involves direct logistics solutions with no intermediaries between enterprises and customers.
- **Second-party logistics (2PL)** involves using an outside party, usually for specific tasks such as loading or distribution.

2) Supply chain solutions:

- Third-party logistics (3PL) provides various services including transportation and warehousing.
- Fourth-party logistics (4PL) solution uses technology to coordinate all supply chain activities from one central point.

3) Integrated logistics solutions:

Integrated logistics solutions combine the services of a 3PL and 4PL provider as well as additional value-added solutions. These solutions help address strategic supply chain challenges in collaboration with the client firm.

Factors considered for designing an effective logistic and supply chain

To design an effective supply chain and logistics network in Uttarakhand, focus on understanding the terrain, identifying key locations, optimizing transportation routes, and leveraging technology to ensure efficient and cost-effective movement of goods.

1. Understanding the Context:

- **Terrain:**

Uttarakhand's mountainous terrain presents unique challenges. Consider the accessibility of different areas, road conditions, and potential bottlenecks.

- **Key Locations:**

Identify major cities, towns, and industrial areas within Uttarakhand, as well as potential hubs for warehousing and distribution.

- **Customer Base:**

Analyze the location and needs of your target customers to determine the optimal distribution strategy.

2. Designing the Network:

- **Distribution Centers:**

Strategically place distribution centers (warehouses) in locations that minimize transportation costs and maximize accessibility to customers.

- **Transportation Modes:**

Evaluate different transportation options (road, rail, air) and choose the most efficient and cost-effective methods for each stage of the supply chain.

- **Route Optimization:**

Use route optimization tools and technologies to find the shortest and most efficient paths for transporting goods, considering road conditions and potential delays.

- **Inventory Management:**

Implement a robust inventory management system to ensure that the right products are available at the right time and place, minimizing holding costs and stockouts.

3. Leveraging Technology:

- **Transportation Management Systems (TMS):**

Use TMS to track shipments, manage transportation contracts, and optimize routes.

- **Warehouse Management Systems (WMS):**

Implement WMS to manage inventory, track stock levels, and optimize warehouse operations.

- **Real-time Tracking:**

Use GPS tracking to monitor the location of shipments and identify potential delays or issues.

- **Data Analytics:**

Use data analytics to identify trends, optimize processes, and make data-driven decisions.

4. Key Considerations for Uttarakhand:

- **Infrastructure:**

Uttarakhand's infrastructure, particularly roads, is a key factor. Invest in road improvements and explore alternative transportation options.

- **Seasonality:**

Consider the impact of seasonal weather conditions (monsoon, snow) on transportation and logistics.

- **Cost:**

Minimize transportation and warehousing costs by optimizing routes, using efficient transportation modes, and implementing effective inventory management.

- **Sustainability:**

Consider the environmental impact of your supply chain and logistics network and implement sustainable practices.

- **Collaboration:**

Build strong relationships with suppliers, transportation providers, and other stakeholders to ensure a smooth and efficient supply chain.

1. Technology Adoption:

- **Digital Platforms:**

Implement e-commerce platforms and mobile applications to connect rural producers with buyers, facilitating transactions and market access.

- **Data Analytics:**

Utilize data analytics to optimize inventory management, predict demand, and improve logistics planning.

- **Blockchain Technology:**

Explore blockchain solutions for transparency and traceability in the supply chain, ensuring product quality and authenticity.

- **Automation:**

Implement automation in warehousing and transportation to improve efficiency and reduce costs.

- **GPS Tracking:**

Use GPS tracking to monitor the movement of goods and ensure timely delivery.

2. Infrastructure Development:

- **Warehousing and Storage:**

Invest in cold storage facilities and warehouses to reduce post-harvest losses and improve product quality.

- **Transportation Infrastructure:**

Improve road networks and invest in reliable transportation options to facilitate efficient movement of goods.

- **Connectivity:**

Ensure access to reliable internet connectivity to enable digital transactions and information sharing.

3. Community Engagement:

- **Cooperative Models:**

Encourage the formation of farmer cooperatives to pool resources and negotiate better prices.

- **Skill Development:**

Provide training and capacity building for rural entrepreneurs and workforce to improve their skills in supply chain management.

- **Collaboration:**

Foster collaboration among stakeholders, including government agencies, private companies, and community organizations, to create a supportive ecosystem for rural enterprises.

- **Reverse Logistics:**

Implement reverse logistics systems to manage returns and waste effectively.

4. Other Important Considerations:

- **Sustainability:**

Promote sustainable practices throughout the supply chain, including reducing waste, conserving resources, and minimizing environmental impact.

- **Food Processing:**

Invest in food processing infrastructure to add value to agricultural products and reduce post-harvest losses.

- **Farm Data Management:**

Implement farm data management systems to track crop yields, input usage, and other relevant information.

- **Agriledger:**

Agriledger enables transparency through block chain technology.

- **Digital Supply Chain Twin:**

Digital supply chain twin can optimize supply chain visibility, route optimization, and inventory management.

Conclusion

The study and research conducted on the supply chain of rural enterprises in Uttarakhand suggest that there is an improper supply chain management, lack of robust infrastructure and distribution network which are leading to maximum inefficiencies and resulting to losses and wastage of rural products in Uttarakhand and India as a whole. The entire supply chain of rural units in Uttarakhand is laden with many issues like dependency on intermediaries, poor road infrastructure, inefficient mandi system, inadequate cold chain infrastructure facilities, high cost of packaging, poor quality of distribution, weak link in supply chain etc. Highly inefficient supply chain and cold chain infrastructure is the major impediment in the path of speedy growth of rural enterprises in Uttarakhand. To overcome all these various logistic and supply chain solutions have been suggested in this paper and various variables are discussed in designing the proper logistic and supply chain network.