

Integration of supply chain and Digitization in Assam

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By

Aditya Saikia

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Under the Guidance of

Mr. Hemant Kumar Mishra

Assistant Professor, School of Development Studies,
IIHMR University, Jaipur



Abstract

Assam GDP accounts for only slightly more than 19 percent, with manufacturing and service sector representing only 28.72% and 45.51% respectively. A fractured food supply chain has affected people livelihood in all three sectors. Low productivity in agriculture, frequently destroyed by flooding combined with limited state-owned industrial development means the state has steadily witnessed the migration of lakhs from its workers to metro cities. The state government could be better off identifying vulnerable pockets, especially the area prone to migration and flood. The aim of the paper is to deal with crisis with Agri Food supply Chain in Assam. It got broke down during Lockdown fighting against pandemic and low productivity due to flood.

(Key Words: Agri food supply chain, Integrated supply chain, Digitalisation, Tracking of goods)

Introduction

Why integration of supply chain and digitalisation is required in Assam?

The share of agriculture in Assam GDP accounts for only slightly more than 19 percent, according to official's statistics, with the manufacturing and service sector representing only 28.72% and 45.51% respectively. Approximately 60% are still dependent on agriculture and related livelihood activities, with production and service accounting for the remaining share of GDP. Nonetheless, these numbers assume that the three sectors are intertwined in nature as food travel from the farm gate to the plate, linking livelihoods that are involved in all three sectors. National level estimates show the prices at the farm gate still account for about 20-30 percent of the total values generated in the agri-food supply chain with most of the values generated outside the farm sector. In mirror image of this share of income from direct agricultural involvement has declined over time, accounting for less than 50% of total household income reported. A fractured food supply chain will affect people livelihood in all three sectors and as well functioning one will lift all boats together. Local newspaper reports indicated that lockdown has disrupted crop harvesting in many countries with crops being sold at lower prices and often unsold an even rotting on the farm. Many economic operations are either halted or slowed down during the lockout, leading to a decrease in income with negative effects on the market for farm produce. Worsening the matter is the return of migrant workers from different corners of the country and failure of economic development due to lockdown. Low productivity in agriculture, frequently destroyed by flooding combined with limited state-owned industrial development, means the state has steadily witnessed the migration of lakhs from its workers to metro cities many of which go the way to southern states like Kerala and Karnataka. Just to put these numbers in perspective, Kerala alone registered 14lakhs migrants from the northeast Assam. The return of these migrants will present additional challenges, as a rapid rise in rural population would lead to a decline in real rural incomes. Overall consequence is a fall in rural production and demand with negative effects on farm prices.

One or two months from now, the state may look to the imminent food crisis with more mouths to feed and decline in the countryside complicating the matter further. The state government could be better off identifying vulnerable pockets, especially the area prone to migration and introducing Public distribution system in those areas. It is necessary for the government to

implement MGNREGA quickly to provide some cash to the rural people in search of livelihoods. It is important to note that over the past two decades the food supply chain has also changed significantly with vegetables and other perishable such as meat and chicken playing a more important role than ever. Because of their perishable existence the supply chain will remain interconnected to ensure their smooth movement is unaffected not just by lockdowns but also by physical infrastructure deficits such as cold storage.

Supply chain management is the management of activities done to maximize customer value to achieve a sustainable advantage in competition. There is always conscious effort by the supply chain firms to develop and run supply chain in the most effective and efficient ways possible for the growth in business. Activities in supply chain cover everything from product development, sourcing, production and logistics as well as to coordinate these activities. Information systems knowledge is required.

The integrated supply chains include coordinated linkages between manufacturers, traders, processors and purchasers provided detailed information on what and how many varieties to be manufactured at the time of delivery with the quality and safety condition in that price.

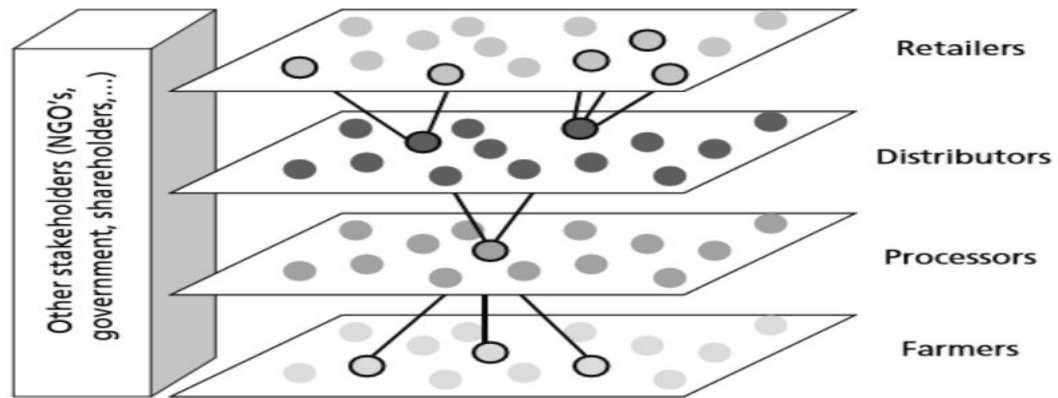
The concept of supply chain management:

- » Firstly, products that reach end users represent accumulative effort of multiple organisations. All these organisations are collectively known as the supply chain.
- » Secondly, supply chain has existed for a long time but only few organisations have paid attention to what was happening within the organisation. Few organisations understood but were less managed, the entire chain of activities that ultimately delivered to the final customer was disjointed and ineffective supply chain

Agriculture Supply chain Networks

A supply chain for agriculture consists of organisation which are responsible for manufacturing and selling of vegetables, nuts, cereals, pulses and animal products. The two most famous forms are

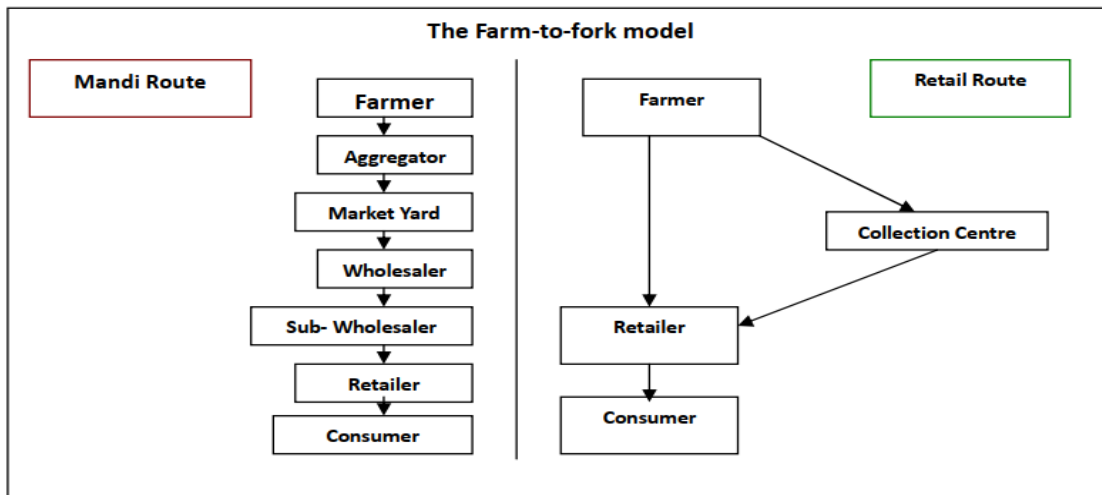
1. Agricultural food supply chains such as new vegetable, flower and fruit included producers' auctions, wholesalers, importers and exporters, dealers and special shops as their suppliers of products and services.
2. Agricultural food supply chains for processed food products such as meats, snacks, juices, desserts, canned foods etc. are used as raw materials to produce products with higher value added. ^[1]



Control of supply chain related problems in India [2]

- » Poor information on the price signal pass down to farmers leading to an increase or decrease in the quality supplied or needed
- » Failure to control the supply chain in India limits farmers to achieving mandis
- » Most intermediaries contributing to price changes allowing price disparities to be paid by the farmer and the final customer
- » Knowledge of available prices, supplies and stocks is more to middleman than to farmer and customer alike
- » Lack of resources for utilities and storage
- » No protection on the move top cover the products
- » Underdeveloped supply chain for right demand indications

Supermarket procurement system for fruit, vegetables, milk products and non-veg items sourcing the structure of the supply chain strongly influences. Increasing organized retail size in Asian countries such as **Metro cash & carry, Tata chemicals and Field Fresh Foods, Bharti Enterprises, Reliance fresh** are in India now. This companies plays a crucial part in coordinating farmers storing places and their incorporation into the supply chain for fresh produce retailers, System Recruitment are evolving to customer demand and competition. Along with the involment of farm producing retailers in the countryside now there are several players who support different retail chains to purchase them. DCM Shriram Consolidated Ltd (DSCL) for example is in the tie-in cycle with them to grow farmers fruits and vegetables and to supply them to the retail rings chains. DSCL is just doing the same fthe future Group, Subhikhsha based in the south. The latest deployments would help the organization work on economies of scale and running nationwide.



Supply chain in organized retail entry

Many Indian farmers sell a substantial section of their product in townships which results in low return for their products. There is a disparity in the price at various marketing rates i.e. village, wholesale, secondary wholesale and retail. Selling items vary from region to region , commodity to commodity, and even with status of farmer. Village sales in food grains are 20-30 %, cash crops are 35-80% and perishable goods are 80-90%.

- » Farmers owe to moneylenders, merchants or landlords of the village. Sometimes, they pushed into violence either to sign advance sales contracts or to sell the products at low rates
- » There are still several villages which are not connected by road neither by any appropriate means of transport to linked villages so bringing goods is difficult, Bullock or carts bound for market have to travel long distance.
- » Only a limited amount of marketable surplus exists with the majority of farmers
- » Farmers are searching for the capital to perform the social obligation and other responsibilities and still struggling to market their product locally.
- » Most of the consumer able goods have to be sold in the villages due to their low quality and the lack of convenient transport.
- » Lots of farmers hated the urban markets this is due largely to their lack of knowledge about urban markets winning business trends, the potential for robbery or theft faced with transit problems with them a auction of their goods on the town markets.
- » Price information at the local primary and secondary wholesale farmer markets aren't readily available

Post-Harvest immediate sales

Most farmers tend to auction their product after the crop is finished. Around the moment low prices prevail. Indian markets are swamped because of large supplies in season post-harvest. Traders also use this situation to their benefits. About 60-80% in the first quarter of the harvest season, food grains are already on the market.

The country's agrarian supply chain management system its drawbacks are as follows

- » Insufficiency of the institutional marketing system and producer organization

- » Array of Business charges
- » Nature of marketing malpractices
- » Lack of Industry accurate and updated details.
- » Small marketable surplus with a large product range
- » Lack of product grading and standardization
- » Lacking fast transport
- » Monopolistic business character due to excessive trade union power and to functionaries of the sector.

Digitization and its implication

ICT is a valuable method for production convergence, post-harvest processing, value addition and commercialisation of Argo-products. ICT domain also covers the efficiency, agronomic contents, elements of traceability and descriptions of active ingredient quantities, nutritional values etc. In the Indian sense where land count is small and broad holdings, entering a multitude of smallholder farmers is the path to the future nutrition. In a way, dismantling the supply chain can be accomplished by adding ICTs at a point acceptable such IT system cannot be confined to marketing issues alone but are concerned with for its sustainable growth be combined with the production aspects. The established patterns of land use, the land records, tenancy and soil quality requirement and their enrichments are digitized and must also be registered.

The technology should be used to maintain a region-specific update and enriched database Agriculture information and timely distributed of seed, selection information, operation affecting monsoon arrival, climate management, etc for farmer. As regards agricultural goods the market conditions of the various products and the current situation prices for timely decisions on crop production should be made available online to farmers diversification approaches and market positioning to maximize sales. Agile supply and demand supply emphasis on rising end to end supply network is needed now.

Literature Review

Shared value and responsibility in agriculture: the short supply chain model

The modern multifunctional, multi-value farm model promoting new purchases by the valorisation of the short supply of food. An ethical aspect of the fast food supply chain in this model of value creation, turns into a Competitive Multifunctional System and diverse farms, as response to contracting power asymmetric affecting food supply. On the other hand, enables the farm to recover value added and it leads to consumer to save on the buying of nutritious goods surrounding their area of origin. It is for this reason that both producers and customers share the interest that a short food supply chain produces strategy since the farmers have direct relationships and consumers generate wellness influence related to positive spatial effects. This allows the citizen customer able to buy the range of goods and services provided by the farm and the region in competition with competitive items sold across conventional network. This leads to creation of a market for farm-produced public goods, by means of the premium price and to the valuation of the price. This research analyses the short supply chain of foodstuff as a strategic technique of Multi-functional and multi-value farm, because it brings the citizen and consumer closer to the farm and the territory and establishing health and mutual interest and increasing the land and the farm. One sample of 100 multifunctional questionnaires was

submitted, the sample was chosen through focus groups with professional organisation choosing within the territory. The key results of the analysis underscored a strategic role for Human capital on the shared interest generated by a short food supply chain strategy. As regard to the entrepreneurs age and educational level the study has been provided proof of its impact on the premium price and the less price. The analysis on the other hand revealed a negative relation between the entrepreneur's premium price and age it showed Premium price of 36.3% whereas this proportion declines dramatically when considered older which shows around 19%. The analysis also showed a relationship between premium price and educational level.

Agriculture Marketing and Agribusiness Supply chain Issues in Developing Economies

The highlands of Papua New Guinea provide an ideal environment for the output of temperate fresh vegetables while the main markets are in more extensive coastal areas around Port Moresby, Lae and Madang. The fresh produce marketing network in Papua seems to be New guinea is poorly performing and there are a variety of assumptions about this bad achievement. It was suggested that smallholder farmers earn an insufficient amount and share of the chains margin the advertisers misuse them and retailers allegedly make excessive profits. The standard of the fresh produce and marketed is also assumed to be inferior and the quality supplied is inconsistent that after harvested wastage levels are inconsistent is unacceptably high, the distribution of business knowledge is slow and disadvantageous apart from it the Smallholder farmers and the weak infrastructure causing marketing issues. This Supply chain Framework envisages a chain as a process of value creation, whereby all companies link in a chain and align themselves to create value for the chain as a whole. The value of this is argued Creation takes place via firm operations, process integration, logistics and Quality control. It is further argued that all over value creation the information flow supports the chain, and is achieved through vertical integration and managing relationships. Value creation primarily happens through operations this is achieve by, means of product processing or quality enhancement. Value is also created by embedding processes along the chain, that is the seamless meshing of processes when the product is moving from one point in the process chain to the next cost and time. Quality is generated further by logistics, in a cost and time effective manner from one stage in the chain to the next and efficiency control is preserved by packaging transport and cool or cold procedures.

Food traceability as an internal part of logistics management in food and agricultural supply chain.

The purpose of this thesis was to undertake an extensive review of literature on Food traceability system within a limited scope covering definitions, passenger, advantage, obstacles, innovation, improvements results 62% of studies chosen at random concentrated on growing Europe's argument that Europe is ahead of leading in development and implementation of food traceability system. The key driving forces behind the development and implementation of Food traceability system were identified and summarized in five categories: food safety and quality, political, social, economic and technological preoccupation. The food traceability system has major advantages which are identified and graded as customer service increase, food crisis management improvement, improvement strengthened business experience in Food supply chain management. And the scientific approach to agricultural production and its importance. The obstacle to implement food

traceability system are presented as limitation such as knowledge, resource, norm, Capacity and sensitivity.

Technological innovations mainly used for product identification, measurement of quality and safety, genetic analysis, environmental monitoring , data collection, geospatial data exchange and incorporation of data was established this research has highlighted more effective and healthier food traceability technology are being developed which in effect facilitate the integration of data concerning static and dynamic traceability and ensuring data travels constantly throughout the supply chain. The choice of traceability which is sufficient and efficient depends on Food traceability system considering the partnership and ability to conduct transactions and manufacturing processes and quality and packing materials and methodologies implementing successful traceability in long run. System requires the incorporation of multiple supply chain components. Implementation of a traceability program entirely protecting the whole supply chain leading to greater benefits than partial enhancement in traceability.

The performance of the entire food traceability chain should be measured against its ultimate target, which should include substantial clear criteria such as conformity to rules and legislation; health and quality; happiness of the social and stakeholder groups; and scientific and technical advantages. The efficacy and the success of the food traceability implemented to achieve such specifics targets may evaluate machine efficiency. The food traceability system efficiency may also be assessed for its capacity to change the distance, depth, accuracy and access to knowledge. Such a thing better knowledge flow in turn would boost the integration of logistics and developing the food supply chain management.

Scope of supply chain management in fruits and vegetables in India

During post-harvest storage and handling there is a colossal waste due to inadequate bagging without crushing, lack of temperature-controlled vehicles, no cold chain facilities to preserve the commodity, coupled with substantial processing of agricultural produce resulting in enormous losses for the country. Considering the characteristics of fruit and vegetables such as perishability, seasonality, bulkiness and delicacy of the goods couples with insufficient storage and transportation facilities, the supply chain can made effective by reducing the chain length by enhancing cold chain facilities. Management of the supply chain in vegetables must be strengthened at all supply stages by following global best practices in storage, packaging, handling, distribution, value- added services etc. and also through the disintermediation and participation of organized players i.e. the new supply chain to support both farmers and ultimate consumers. The Indian government should take many steps to solve problems in the Indian food supply chain, including allowing more organized retailers to enter the retail sector, defining basic growth factors, an efficient crop management system, developing post-harvest infrastructure, managing entrepreneurship and skills and logistics infrastructure. Establishing a proper fruit and vegetable supply chain network would connect growers, vegetable vendors, self- help groups of growers and women vegetable fruit vendors in convenient time and place to ensure the availability of quality goods at reasonable prices for consumers.

A study on the digitization of supply chains in agriculture

ICT is well known for the utility of digitisation of all relevant details in improving the efficiency of the agricultural sector and the authorities need to address this. Loss of food production is less costly than the corresponding rise. If no effort is made to modernize the

horticultural harvest management method, otherwise post-harvest method losses will continue the financial and environmental effects is negative. There is no question that food loss in post-harvest reduced food supply dramatically improves. Good stakeholder collaboration reduces risk, losses and greatly enhances productivity to ensure food safety and production. The critical link between the entire digital network chain and its implementations is the such stakeholders are key winners of these programs. It is difficult to decide the intended users either do not know about ICT services or do not see them as relevant conditions in their areas. The job of knowing the client and their knowledge is unfortunately subsidized the technical prevalent in the Indian background. Through public or private agriculture extension operates in a sense that affects the organizing, design and quality of the transition activities. So, it has to be guided by the learning what works and what makes it don't and by the definition and background of the local circumstances. The needs have to address related problems, including what helps public service extension staff become info-mediating. Their jobs map will be transformed dramatically using digital resources to incentivise effective results. ICT is Apps by themselves would not be readily available, usable and acceptable under the condition of farmer. This need higher contributions from all the farmers. Furthermore, we have to develop farmers Large-scale government populations should prepare campaigns to zoom in the farmers training familiarity in the use of ICTs.

The principle of supply chain digitisation ultimately offers communications, increase market access, improve market processes, increase product range and lower Indian production cycle times Agri-Farming. Understanding the ICT background for Indian agriculture should aid nation- wide growth. Tactics. the incorporation of digital India agricultural perspective would pose a real challenge of knowledge of time critical resources across the entire agricultural value chain

Digitization and its implication

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E-choupal experience of ITC

ITC's E-choupal insight ITC Ltd has launched a project for soybean farmers on the electronic market place in Madhya Pradesh province. The proposal owes thanks to such factors as the use of sustainable market model in collective community leadership with state and corporate collaboration. The embarked technology was easy to reproduced and easy to scalp and customized to the central farmer's need. The initiative has helped the growers sustain income rates, removal of intermediaries, creation of easy market access and mutual project ownership.

E governance in fisheries

The fisher friendly the android app is a single window application that is specific for the holistic fishing community shore to shore need, giving with direct access by inexperienced fisherman , near real time weather information and intelligence facilities, possible fishing areas, oceans state prediction, and information important to the sector. The application represents an accurate and efficient decision for fisheries group with resources helping while taking decision about own personal health and security of their boats and goods fishing and marketing options for their catches. The fisher friend mobile application is developed in collaboration with Wireless reach QUALCOMM and Tata Consultancy on an android Platform available in English Tamil and Telegu at present.

Tops fresh vegetable chain in Thailand

Tops, Ahold Thailand; Syngenta; SGS(1998-2002), Kasetsart University research Institute Thailand; Wageningen UR, Netherlands and governmental organisations are working together to establish a high-quality and productive fresh supply chain in Thailand from manufacture to consumer.

Around 250 manufactures shipped the items three days a week directly to the store. There were popular out of stock and high shrinkage in the shop. Post-harvest losses were high due to the lack of pre-cooling and refrigerated transported. ^[3]

- » A preferred supplier strategy in which the number of suppliers chosen to have a contractual partnership from 250 to 60 decrease the total number of suppliers. Professional development initiated such as good agricultural practices for crop safety goods, participation in the certification programs and better seeds and technical assistance were implemented.
- » A distribution centre has been designed to perform useful tasks such as quality assurance, cleaning, packing and shipping. This value-added hub was at the boundaries of Bangkok city a full 24hours a day.
- » The time saving plan between the farm and World Fresh and between World Fresh and store has substantially decreased. World fresh quality standard has been increasing to 98 percent

Emphasis on reducing transactional costs and increasing the level of food safety create a link between advanced farmers and traders, and reducing the incorporation of smallholders into Tops supply chain.

Thai fresh project

The Thai Fresh project was initiated in 1999 when Golden Exotics Holland and KLM Cargo established a distribution and packing centre in the vicinity of Bangkok airport. Golden Exotics

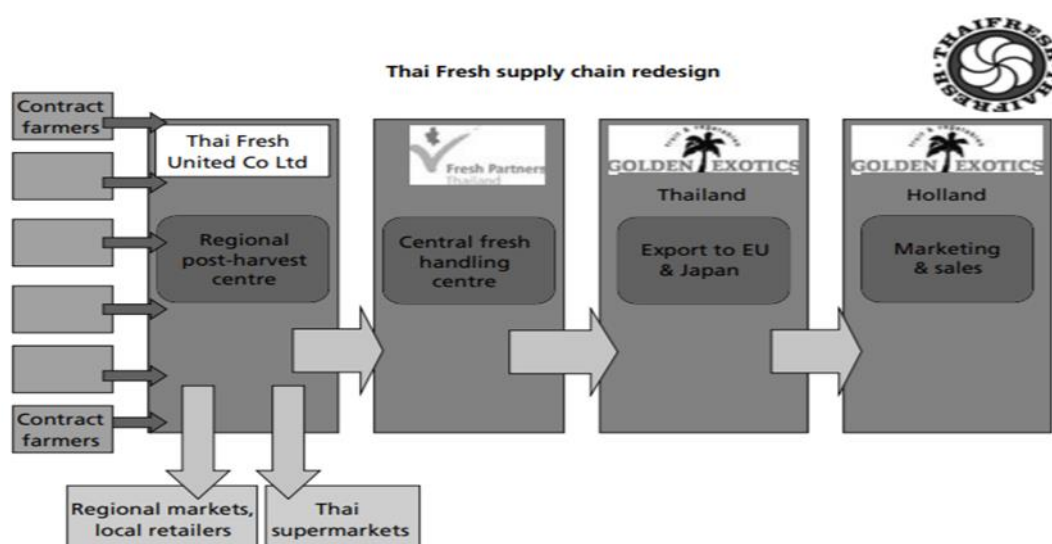
were already popular in the distribution of exotics vegetable from Thailand in Germany, United Kingdom, Netherlands and Belgium. Early years fresh products were purchased from the wholesalers and brokers. Sourcing in this mode was no longer workable due to increase quality and safety requirement of the international end markets in Europe and Japan.^[4]

The Thai Fresh project aim to develop an integrated quality chain for export of exotic vegetable. The challenge was increasing the quality and safety requirements at the retail level into good agricultural practices at producer level and to develop a supply chain for a dependable tracing and tracking system.

First step towards better control on product quality and food safety was establishment of the distribution and packing centre at Bangkok airport. The centre was considered as a value-added facility where grades and standards were implemented. Hazard Analysis and Critical Control Point has been introduced at the distribution and packing centre in order to achieve Good Manufacturing Practices. Introduction was accompanied by the development of Standard Operating Procedures and implementation of a training programme for the managers and the workers at the centre.

Post-harvest centre in the Ratchaburi province also serves as a knowledge centre for the growers. The centre provides the growers with extension services and farming inputs so that they can apply good agricultural practices and integrated crop management techniques. The services were targeted to get the grower certified according to the European Retailer Produce Good Agriculture Practices.

Pesticides residue are most important food safety concern in the vegetable supply chain the establishment of the regional post-harvest centre in Ratchaburi implies shortening of the supply chain due to the bypassing of the wholesale traders. As for the primary production level, commitment from the growers is created through contractual agreements on purchases and by making them shareholders of the regional post-harvest centre.



Mahagrapes

Mahagrapes is a partnership firm of sixteen grape growers' cooperatives. The international trending of fruit growers becoming exporters, the vineyard owners of Maharashtra the international marker with own brand, Mahagrapes acts as facilitator, quality controller, input

supplier as well as service provider to member society. The Grape growers in the areas of Sangali, Solapur, Pune and Nasik regions of Maharashtra have formed 16 co-operative societies with a membership of almost 2500 farmers. ^[5]

Features

- » To build and grow markets around the world
- » To provide Quality assurance for post-harvest operation.
- » Offer extension services to co-op participants to grow quality grapes for export.
- » Availability and supervision of product packaging.
- » Providing administrative assistance.
- » To provide the farmers with advance payment for their harvest.
- » Get best price production costs.
- » Bring on the Co-ops incentives

The success story of Mahagrapes was due to the grape growers been able to linked to foreign markets and have compressed the supply chain. Bringing the precooling technology and the cold storage facilities proved to be an important export resource along with a strong public private partnership. The appearance of Indian horticulture export has become more formal with facilities like extensive network of financial institutes as we as labs.

Linking tribal famers with the market

Karbi Anglong is an outlying Assam district, which is a high-quality Ginger producer. This a hill place and is populated by the tribal people due to which farmers have been hindered by access to market, utilities and finance. There was a high incidence of ginger post-harvest losses due to a lack of facilities for transport and storage. There were no economies of scale for the small and marginal farmers to choose for adequate grading, processing, packing and transportation etc. due to lack of distribution channel, consumer support and market knowledge, producers frequently have to resort to distress sales. Given high product quality and strong demand for the commodity in industry, the price remains unchanged.^[6]

Innovation in marketing by district administration

Organizing co-operative federation: Cooperative marketing ginger growers Federation Limited began in 2007 under Rastriya Sama Vikash Yojana with an association of 3500 small and marginal tribal ginger growers, with the goal of bringing all ginger growers under one umbrella and giving producers better return.

Logistics support and agreement with NF Railway: Ginger Transportation is a big problem because of its hilly and remote location. Co-operative marketing ginger growers Federation Limited has an agreement with North east frontier Railways and Karbi Anglong District Administration, the transportation costs are reduced by 90% with 20% and 40 paise per Kg when sent by train with this agreement.

Storage and post harvesting handling: With Storage Installation in Place, Producers will store the goods and take marketing decisions. Post- capture cleaning, processing and packaging facilities will help producers supply ginger global economy. Foreign economy. The federation has also set a standard price of Rs 8 per kg to produce Ginger in addition to this. This has brought relief to farmers who at first it suffered from a shortage of avenues for marketing, proper price awareness and distress sales

Financial Support: A special credit and debit card is issued to ginger farmers to receive bank loans. The holder of the ginger card may obtain loan of Rs 10,000 from State Bank of India for crop production.

Building University capacity to improve fruit and vegetable supply chain development in India

Tamil Nadu Agricultural University and Michigan State University partner together for strengthening the linkages among the stakeholders including famers which resulted in success stories likes ^[8]

- » Federation formed for the “King of fruits”
- » Mango trade goes online under “One India one Market concept”
- » Tamil Nadu Growers go for certification with EurepGAP
- » A special “Farmer owned Banana Post-Harvest Set”
- » “Producer corporation owned by farmers” incorporated under the corporation Act and wholesale farmers,
- » Establishment of the Agri-business Growth directorate at Tamil Nadu Agricultural University.
- » Business linkage discovery.

Methodology

The aim of the paper is to deal with crisis with Agri Food supply Chain in ASSAM which got broke down during Lockdown fighting against pandemic, Low productivity due to flood and lakhs of migrant workers returning to native from various corner of the country for which the explorative study design was conducted with several research articles available in the webpages. Articles were search from different search sites and categorised as per the need and challenges taken by other countries Pre COVID 19 and in India to revive the broken Agri supply chain.

Key Findings

- » Integrated supply chain
- » Digitalization in supply chain
- » Mobile Application with regional language

Discussion

Due to the COVID 19 pandemic the outdated technology has disrupted numerous supply chain around the world. Traceability may fall apart for unexpected reason may be due to some network shutdown. Most procedures revolving around deliveries often run with a paper-based, face to face signature although social distancing mechanism are in place, they can find it difficult if is impossible to enforce causing supply chain to further disrupted. So, adopting to technological advancement which is used for product identification quality and safety calculation, genetic analysis, data processing, geospatial data sharing and data integration will be beneficial for long run. Mobile app serving as versatile method for information to farmers, information such as crops production, post-harvest processing, value addition and marketing combined with weather report and warning alert facilities will help the farmer to procure the lost in advance. Assam State Agriculture Marketing Board has flex the APMC laws where

farmers are allowed to open village market bi weekly still digitization is superior than tradition supply chain in terms of pandemic as well as supply chain.

Conclusion

As supply chain has been broken down, free play of demand and supply should be encouraging with removing entry and exit barriers from market should be the priority, promoting standardization and discussing quality and safety concerns creating a clear risk control framework for market development. This can only be possible to achieve with Digitisation of the available knowledge at various supply chain rates. The degree of integration of services depend upon the exchange of knowledge among the players. It is noted that the major players attempt to gain vertical/horizontal integration in different events ending up swallowing up the weak ones. Basic training for users should be given in various platform for accessing to information and e -readiness parameters with awareness related to integration of digital media into governance process in agriculture. One-step-backward and one-step-forward approach with proper information for whom were the ingredients and food/feed obtained? And To whom the products were sold?

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Fundamentals of Project Planning and Management

Course Description

Fundamentals of Project Planning and Management will introduce to basic concepts from project planning, critical path method, network analysis, and simulation for project risk analysis. We will gain an appreciation for what is required in planning and executing large-scale projects and gain an understanding of Agile Project Management principles. Together, we can develop an awareness of some behavioural biases that come to play in project settings and identify how these impacts the planning and execution of a project.

Course description

What is project?

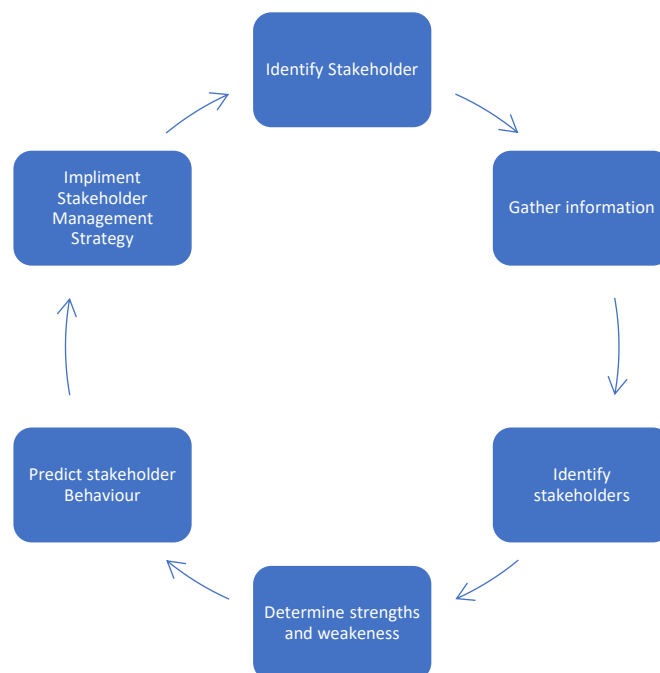
A project is a temporary endeavour undertaken to create a unique product or service.

Why does it matter that we clarify what is a Project?

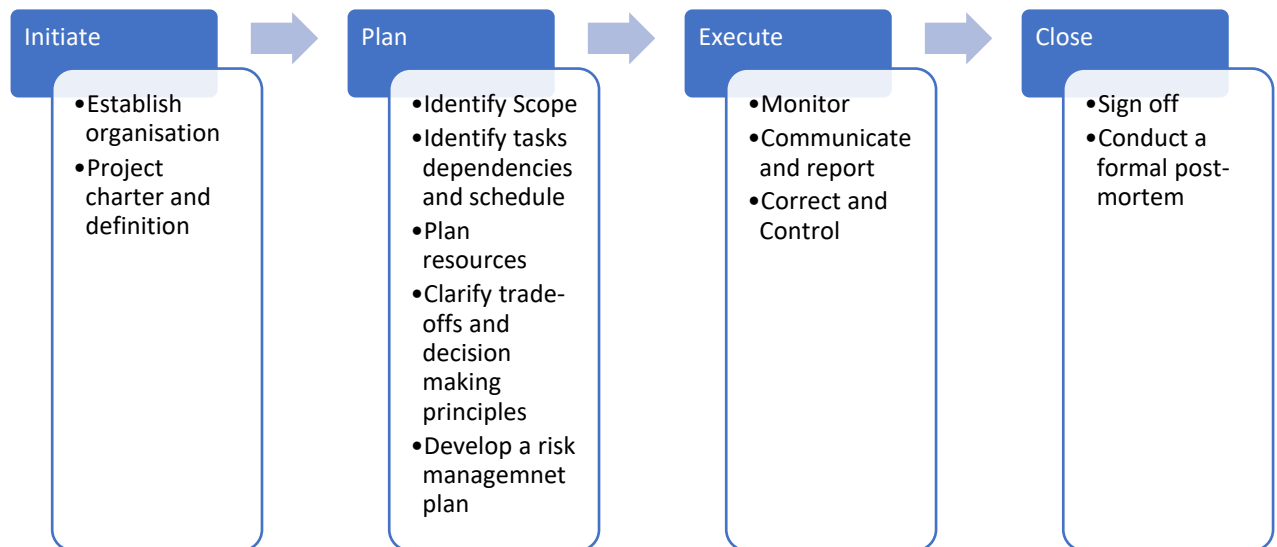
First if we define a project properly, then we can find the correct tools to use when we plan and execute projects. In addition, projects and processes, they might have different objectives. And therefore, we're going to measure their success on different criteria. Finally, all the projects have the feature that they are supposedly unique. They have certain traits that come with being unique and being temporary. And we can cater for those and we can plan accordingly.

Three objectives of a project are Scope, time and budget.

Project Organization and Stakeholder



Project Life cycle



Project Crashing

- Project duration can be reduced only by shortening critical activities.
- It may be worth spending money to reduce the length of a project.

Project Wrap Up

Project planning is crucial for project success.

- A project plan is a guide, not a schedule of what will exactly happen.
- Follow the project planning cycle.
- Make sure the goal of the project is clear to you.
- Ensure project scope is complete (most crucial part of planning).

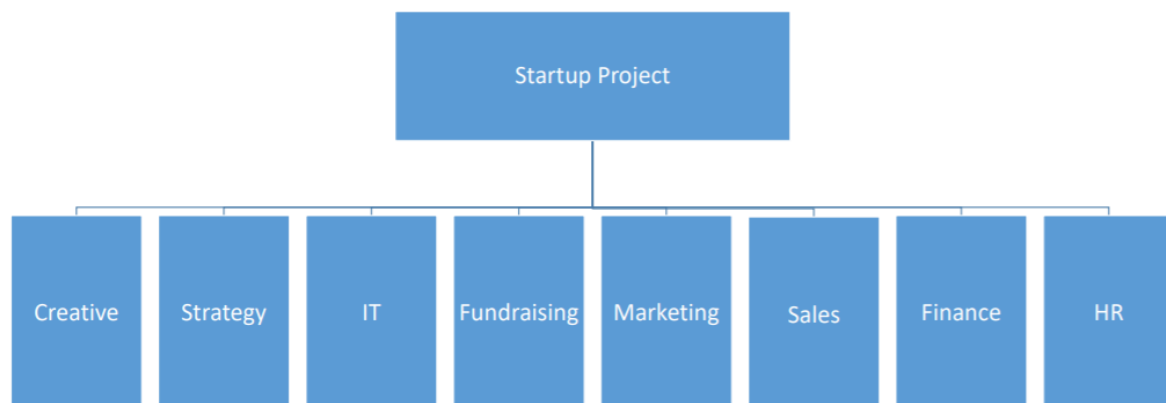
Project Risk Management

Identification	Assessment	Response Planning	Monitoring and control
• Brainstorming checklists, previous projects, experts • Risk Register	• Impact • likelihood • Prioritized Risk Registered	• Identify response strategy to each risk • Assign responsibilities	• Update risk probabilities • Execute planned strategy if events occur

Budget Risks

- Cost estimates are subject to variations.
- Foreseeable risks can cause the actual project cost to different from planned.
- Establish some contingency budget.
- Budget contingency should be allocated at a project not task level (provides more flexibility for the project manager).

Start-up project



Learning Methodology

In this course PPT, Video and Cases all were used

Key learning

- Why it is important to identify a project
- Project cycle
- Risk management
- Budget risks