

A study on possibilities of Agricultural Business Supply Chain in India in post-Covid era

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Abstract

Hit by Covid-19 pandemic, social distancing, nationwide or state or region wise lockdown, maintaining hygiene every time; businesses are facing a heap challenge to run their financial wheels smoothly due to less turnover and uncertainties in worldwide environment. The start-ups and small marginal businesses specially are seen to be at great distress. So to deal with these unexpected crises of mass hunger, panic buying; India needs to maintain its supply chain of agricultural products in organic way if possible and adopt some policy of re-assembling its economy into a federal system of self-sustaining state economy by partnering with politics, industry, civil society and academia; engaged in strong, sustainable cooperation. This might thus, enhance job opportunities and boost growth of local products into a brand to be globalised.

Keywords: Agricultural business, Covid-19, supply chain

Introduction

Agriculture is the art and science of cultivating the soils, growing crops and raising livestock which add to the fundamental inception of livelihood for India's population. The agricultural supply chain is mainly concerned with the flow of products and information between the business members i.e. attainment of materials, transforming materials into finished goods, and distributing those products to final consumers as per the necessity presumably with regard to quality, quantity and price. In India, there are mainly two categories of agriculture supply chain – one that is highly regulated by the government and the others are regulated by private sectors. Thus, supply chains enforce internal mechanisms by assuring timely performance of production and delivery commitments.

But the sudden coronavirus pandemic has now drastically changed the scenario of the supply chain globally. Our Indian government took strict measures of putting the entire country under lockdown from midnight of 24 March 2020. Though this was a much-needed step, it has resulted in hardship for citizens and has drawn the Indian economy into battle. Standing outside essential services establishments in long

queues with rapid shifting of customer purchasing patterns, and broad gap in demand-supply needs are some of the noticeable effects that are seen in this COVID-19 pandemic state. Since consumer behaviour and way of shopping patterns are undergoing a rapid conversion, it's the time for businesses to rethink and develop their supply chain game plan in order to match to the new obligations and expectations. This might develop an unprecedented stress to modern supply chains with economic turmoil in India.

Agriculture being the largest sector has always remained an important part of Indian economic system and is going to continue to see the reasonable level of demand in future of shifting consumers towards buying niche products due to the worldwide pandemics that have resulted the weaknesses lying at the heart of manufacturing process. So today, due to the cost of depending on sole source and scarce flexibility in adjusting to the shock of

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pandemic, we are tolerating all the more higher prices for certain goods.

A drastic change that has started heading for more elasticity and multivariate sourcing might stimulate enormously and hopefully over the upcoming years. As a result, a new order can be expected in our supply chain infrastructure basing on three key dimensions: a) from globalism to localism, b) modify the supply chain to meet the new priorities of the consumers and c) putting back the human capital to succeed.

A critical phase has entered, where several countries including India are under a virtual state of lock-down. Yet, there is a believe that behind every crisis there is present a deep within itself, the seeds of new opportunities and solutions. The organizations can use these times to re-evaluate their goals and approaches with new strategies to walk ahead with innovative measures to boost their dynamics with employees, stakeholders, investors, partners and others in the ecosystem.

India being filled with natural resources, has some natural advantages but also some supply constraints, which, if fixed, would make the country to fulfill global demand in organic food. By this way, the Indian agriculture can embrace its future success.

The current COVID-19 disease has jiggled and resulted to heartfelt and ultimately led to an unpredicted world. This virus has made many people to fall ill and endless of people have died of it. Millions of workers and farmers livelihoods have tolerated, regular

businesses have been deranged, and the impact is continuing to shifts to new regions and areas.

Now the businesses, after the crisis are looking forward to regenerate their operations smoothly. In order to construct more flexible supply chains with a powerful focus on constant development, clarity and mutual authority, innovations in sustainability certification is much needed.

The words of our former President of India, Dr. A.P.J. Abdul Kalam as said, “Man needs difficulties in life because they are necessary to enjoy the success.” So, if India gears up to overcome the coronavirus pandemic with the unbeatable spirit, integrity, endurance and collective efforts, the change is sure to achieve. The choice is ours.

Agricultural supply chain and COVID-19

An Agriculture supply chain is a succession of flow of products from the producers to the ultimate consumers or to the desired market. It follows the steps that target to reach the ultimate consumer needs, which occur by linking various phases through a continuation, from manufacturing to ultimate utilization.

It includes not only the growers and the suppliers; furthermore, they depend on logistic movements, transportation, warehousing, retailers, and final consumers and include, new product development, marketing, operations, distribution, finances and customer services.

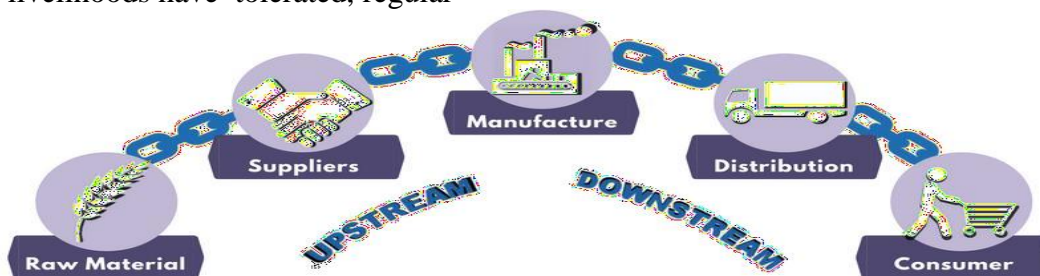


Fig:- Diagram of Supply Chain Operations

Here in above diagram, upstream supply chain operations indicate those materials that flow into the organization while downstream operations include materials that are mostly finished goods and flow away from the organization to the consumers. Again the term logistics include inbound and outbound logistics where inbound logistics connect to the upstream activities with all the movement of the products before production i.e. collecting raw goods, warehouse maintenance, and the production procedure needed to produce the final product whereas the outbound logistics relate to the downstream activities involving the movement of goods once it has turned to final product.

Advantages of Supply Chain:

In supply chain system; independent suppliers, manufacturers and marketers who are related with supply chain, correlate their worth generating activities with one another and, in the way that build larger value than they can, when they work individually in one of three ways:

- a) Extend conventional market place far off their initial borderline and hence expand net sales to all its representatives.
- b) Optimize all delivering charge of goods beneath the price of challenging line and thus surge the working capital gross margin executed by the representatives of the supply chain.
- c) Aim particular market segments with set products and services, product quality or brand recognition of the products and thus enhance consumer perception of delivered value and by this way, the chain members can charges higher prices from the ultimate consumer.

But at present with the onset of the new pandemic, COVID-19 worldwide, a tragic

situation has arisen which was almost same as with the global outbreak of the Spanish flu, 1918 that had killed approximately 50 million people worldwide happened nearly a century ago. Now forwarding to March 2020, just after 102 years after the Spanish flu outburst, the World Health Organization, announced COVID-19, as a pandemic which swiftly made its way through 114 countries in just few weeks, and that was only the beginning.

With that most of the countries around the world shut down their borders, forced to stay-at-home and practice social distancing, the effect of COVID-19 on different sectors and actions are not known yet.

The intermediaries being mostly illiterates, with finite e-transaction and deficiency of quality appraisalment has become a primary issue in dealing with COVID-19 social distancing. If genuine quality evaluation is done at the farm or village or taluk level and stuffed properly, it can enable straight purchasing from nominal-wholesalers or retailers from faraway places reducing a huge number of mediator, marketing cost, ruination, quality degradation and thus in turn improve real information flow that may provide superior cost to producers and consumers in order to overcome the current impending crisis for storable and perishable commodities.

Also in the case of health and protection concern, there were numerous competitions on ground as local mandis were wind up; farmers were not able to have their trading of the productions in open market areas which led to tight fluidity. The limitations on motion and shut down of all States of India and national boundary which disrupted carrying of agricultural productions from farming field to market places and shifting of crucial crops and seeds safety materials from production places to market areas and

as a whole from India to different countries. As a result, growers were unable to get field based agriculture advises on managing crops, pest and diseases as well. So, purchasing necessary agricultural assistances and also the farming functions were delayed which too affected reaping of the crops with immigrant labor coming back to their respective hometowns.

Thus, ahead of kharif planting season to make sure of timely supply of seeds, agricultural assistance organizations needed to amend their dissemination web and contemplate alternative companies design for instance, electronic business alliance in order to deliver seeds at respective residences itself and crop safety commodities to the cultivators. So same in the case of foreign trade, businesses traversed latest supply chain passages for instances, utilizing Indian railways in order to carry crop seeds to Bangladesh. Again with non-presence of native mandis, electronic devices generated latest market connections to connect the producers directly and large buyers across the country. Collection centers were set up for direct procurement of produce at the farm level. Mobile apps were utilized by firms to generate one-stop portals in order to reach agronomy advises to cultivators through conference call, etc. and they too obtained advises on crops through voice messages and whatsapp messages on their cell phones, which has benefitted the small farm holders who lack to reach to the latest technologies. With new eyesight of reforms in agriculture forwarded by the government, Indian agriculture thereafter will benefit extremely. With the amendment of the Essential Commodities Act, now the cultivators might not get confinement of trading the farm products in native areas only for longer period of time but may create added trading opportunities outside of APMC markets. So

as of now, farmers will get the authority to partake with processors, collectors, wholesalers, enormous group of retailers and overseas traders with no dependence on mediators and thus give them the freedom to distribute and supply agricultural produce with suitable prices. It may also attract larger investment to the sector by focusing on the missed sectors for instance cold depot, agro- processing and challenging the losses in post-harvest processing and thereby aid the Indian agricultural system in becoming more strong, self-sustaining and universally more competitive when compared to other main agriculture nations. The agriculture sector is regarded as the primary potential engine of Indian economic growth as it provides means of living and food for the farmers and the village societies. The involvement of digitalization in India is greatly required which besides acknowledging the cultivators with improved reach to data and knowledge, marketplaces, credit facilities, finances and insurances; they too aid in streamlining domestic and national agriculture supply chain. Added to it, digitalization may also aid small farm holder to transform into a major component of universal farming ecological system who were initially acting as subsidiaries. If it can happen, the agricultural industry can definitely advance in preserving it which can bring an attention just not only on higher crop production; furthermore, it will enhance higher farming gain.

This virus outbreak has challenged businesses to think in unique and different ways that caused disruptions and has left deep impacts on consumer behaviour and preferences with increasingly exercising caution on what, where, and how they buy any products.

The future is unpredictable. Therefore if we can handle work in a smarter way, there is a hope of strengthening the universal supply

chain by grasping the power of Artificial Intelligence and through some different new raising technologies to maintain the continuity of business amid disruption and uncertainty. A recent business report on COVID-19 pandemic and dispersed Supply Chains, has mentioned that supply chains should be lively, reactive and correlated to the organization's ecosystem and procedures.

While the virus might be the reason for the industries for rechecking the supply chain strategies along with accelerating the acceptance of digitalized capability; interim act is also required to be made in order to respond to the rapid disputes. At this moment, there is the need of more diverse and smarter SCM model that will comprise unification of processes, codification, auctions, commodity expertise, and lifecycle costing, etc. The disruption by COVID-19 presents an opportunity to adopt a future-ready supply chain built on the platform of new and smart technologies such as AI, machine learning and automation that can enable operational efficiency and effective decision making. So, in future, with the involvement of technologies such as IoT, cloud computing, 5G, 3D printing, and robotics can enable the digital supply chain network more efficiently.

The digitalization details and customizations may differ from sector to sector and even more from companies to companies; but a good supply chain expert can ensure that the digital supply network is not only line up with business strategies but also forms an integral formulation that build a resilient supply chain that not only reduces risks that may occur in the future but can quickly adjust and recover from any unanticipated supply chain disruptions which may aid in identifying and developing long-term contracts, better vendor management.

Radically alternating an already surviving supply chain seems not an uncomplicated

job as it sounds, as generating a vigorous and firm supply chain however needed to stabilize the demands and wants for cost effectiveness. So, it is predicted that companies may start searching out for more heterogeneous supplier base in near term, while glancing to advance towards flexibility with more of cost efficient supply chain.

In order to go for long term benefit, companies require to take up more holistic analysis, that might lead to more extreme changes, such as mobilizing the supply chains to nearby and to various countries, as well as enhancing the digitalization of supply chains, with an aim of generating towards more sustainable operations in the future that are based on facts and figures involving the modeling and testing of various scenario.

The pandemic has focused on the cycle relationship between the public health, food security, employment and labor dimensions. Our food system has now emphasized on the significance of building up the flexibility of food systems, securing decent working conditions of all agri-food workers that are important for our food security, and prepare for probable future waves of COVID-19 or other pandemics by adopting national policies and validate the procedures and laws.

Literature Review:

OECD (2020, June) has forwarded the impacts and policy lessons on agricultural supply chain and COVID-19 virus and said that this COVID-19 pandemic has led to an unparalleled stress on food supply chains, farm work, disposition of the products, transportation and logistics system, as well as a significant shift in demand. These disorders are mostly the outcome of policies acquired to carry the spread of the virus as represented. A remarkable flexibility in food supply chain is seen in the face of these stresses. With increased demand in supply

chain, grocery store rack has been refilled with time with disappearance of accumulating behavior. So to alleviate unnecessary restrictions, extended lines at borders diminish rapidly in reply to the new policies. Yet, the influence of COVID-19 virus are still unfolded; as so far, experiences has shown the significance of an unlocked and expected global trading conditions to make sure that wherever needed food can move to different places with safety nets.

OECD (2020, April) has forwarded views on health sector by Covid-19 and said that by what means harming these effects emerge out for security of food, balanced diet and means of living of the growers, fisheries and other laborers through the food supply chain which might rely on greater segment of policy responses above a short, medium and longer period of time. Though this pandemic constitute some critical disputes in the case of food supply chain including climatic change in the near future, this can also create some opportunities in order to speed up the alterations in the agricultural sector.

Rennie, R. (2020, June) has discussed on the sustainable ways of supply chain in this Covid-19 pandemic era and has focused attention on the products of everyday use. So, after this crisis, businesses are looking to reinvigorate their operations, bring new ideas in sustainable certification that can aid in building more flexible supply chains through a powerful focus on constant development, clarity and divided authority.

Dev, S. Mahendra (2020, April) discussed *the fear of greater outcome towards health and livelihoods of people with COVID-19 spreading in India, and the government imposition of a 21-day national lockdown to limit virus transmission. Therefore the agriculture, food security, and safety net*

policy and program responses are also urgently required for normal livelihoods. This pandemic has become an unprecedented challenge for India and the whole world as its large population is disrupted with low economic turnover, lockdowns and social distancing.

I C, Somashekhar, Raju Dr. J.K., Patil Dr. H (2014, November) has concluded that the agricultural commodities produce has to undergo a series of operations such as harvesting, threshing, winnowing, bagging, transportation, storing, processing and exchanging before they reach the targeted market as evident from several studies across the country, and during this process, there are considerable losses in crop output at all these stages. After a critical review done on role of agriculture supply chain management, agriculture marketing, market place for agriculture products, APMC, contract farming and private sector initiatives, it can be said that every aspect of the economy, polity, and majority of its population are governed by the performance of the agricultural sector.

Andhani P.R.(2017) after a thorough study said about the increasing of consumers' awareness towards healthy food has made the demand for organic vegetables risen as it is dominate 21% of domestic consumption of organic food in Indonesia. The organic vegetables as are perishable product, needed to be delivered through an efficient supply chain in order to maintain the quality and sell those product to the consumers. The result based on quality attributes analysis showed that consumers demand is generally driven by health, safety and process attributes. The bottlenecks found in this study are mainly of lower quality and quantity due to severe weather condition. Possible improvements that can be implement is prioritizing the quality of

product which needs better logistic facilities and intensive collaboration between actors in the chain.

Lakner, S. (2020, April) highlighted on the point that *as common people life close down around Europe, health systems buckle under the strain of the Covid-19 pandemic. Article 39 of the Lisbon Treaty states that market stability and availability of supplies are the backbone of CAP.* Basing on the figures available, there is an overview of the impacts we can tentatively expect on agricultural production.

ILO (2020, April) discussed on the effects of COVID-19 pandemic on agricultural industry and on food security and said that many agricultural workers are unable to lift themselves out of poverty and food insecurity. And with the rapid spread of virus, the continued functioning of food supply chains is crucial in preventing food crisis and reducing the negative impact on the global economy. Various coordinated policy responses are needed to support agribusiness and the millions of livelihoods and working conditions in line with relevant international labor standards.

Webb, T. (2020, June) discussed on the *Covid-19 topic that has made amazingly transparent that companies and business processes are inseparably bind up with the broader social, political and environmental contexts in which they regulate.*

ICAR-NIAP (2020, April) on discussion on the prevailing situation analyzed that the lockdown in the wake of COVID-19 has disrupted economic activities and the supply chains significantly. The COVID-19 infected people globally and death toll is rising fast. So, it is expected the lockdown shall flatten the infection curve soon and essential economic activities and services shall be in its own place. Fortunately in India, the rate of infection is not that rapid due to timely interventions by the

government, but the impact coincides with the economic slowdown. This is likely to have an impact on demand for agricultural products, dislocation of labor force and disruption of supply chains.

Ramakumar, R. (2020, January-June) focused on the effects of Covid-19 pandemic that led the global economy towards a recession. He also presumed that the effect of it might persist in the world for not less than two years. During the pandemic situation and lockdown, people suffered a lot a due to very less consumption of food and prices of food items being raised and so went on hunger and distress everywhere. The migrant labourers faced a very critical situation; as due to economic crisis, they were forced to leave their job. So seeing the conditions all around, he thought that the agriculture sector need some new ways in order to adjust in the post-Covid era and develop the mindset to be self-reliant.

FAO (2020, August) highlighted on the prevailing Covid-19 scenario that has brought economic status to a distressful condition and the agricultural industry with lack of food safety, malnutrition mostly among the poorer sections of people. So, FAO observing the conditions tried to highlight the significance of use of digital devices to find the facts and figures to overcome the crisis and mobilize the existing resources of the region.

Research Gap

With the spread of the deadly virus worldwide, many have lost their life and still, many are facing a critical stage of their life, which has also brought the wheels of the agriculture supply chain to a standstill and affecting the daily lives of the people. So at present this has given rise to the utmost point of discussion among all and therefore many researches are going on, to tackle the situation and bring it to normalcy. As a result, some suggestions are being

presented, but so far as per my studies on this ongoing pandemic, some more possible or appropriate steps are needed to be taken in order to overcome this pandemic as soon as possible which has not been shown or presented properly and hence come out as a winner over a deadly situation.

Objectives:

- To study the effect on supply chain in agriculture sector in India due to present Covid-19 era.
- To present some of the possible measures to successfully maintain the supply chain.

Research Methodology:

The methodology used is exploratory in nature. Secondary data is used here to know the present and future possibilities to happen.

Findings and Arguments:

The disruptions in food processing industries due to COVID-19 virus have been influenced by directives on social distancing, shortages in labor, and strict lockdown proceedings.

Bottlenecks in transport and logistics is affected by quarantine actions and detainment in border check-up that have disturbed the movement of mostly perishable products along the food supply chains that are carried using the three main means of transport: bulk items through ships and barges; containers through boat, railway or truck and by other roads of transport and air freight.

The severe economic impact due to the deadly virus has raised public opinion and consumer preferences towards responsible business and to acknowledge that extended commercial applicability that shall not survive without social, economic and climate durability. As a result it has been

seen that a number of companies have spin up towards sustainable certification as a productive way of constructing flexible supply chains and make certain their lasting possibility.

Self-sufficient researches have also shown that sustainable certification has a constructive impact of surroundings, social and economic status on the farmers and laborers beyond the world enabling the reliable third-party certification approach in business to illustrate their devotion against deforestation, protecting the natural resources, and granting towards fair deed and a decent living earnings.

With the upcoming years, the people under low-earning groups and poorer nations unequally influenced the predicted global downswing that could propel millions towards poverty.

During this pandemic time, consumers faced the objection of procuring entry to sufficient amount of food at budgetary cost. The rising retail food prices and absence of adequate quantities of food led to increase in starvation and undernourishment, specially amid the needy.

The truth for both developed and developing countries is that Covid-19 pandemic has cleared the views to the world of the significance of migrated laborers and their absenteeism from work in rural production systems. At this period, farmers whirled beneath the effect of workers scarcity, as agriculture performance deteriorated and laborer costs aroused. Seaports, logistics and transportation systems also have undergone a huge loss due to the lack of migrated laborers.

Conclusion and Suggestions:

The decision of Cabinet to let farmers to sell straightly via e-business programme to individuals from the options rather than being restricted to state mandis only, can be a game changer that can empower not only contract cultivation but inter-state trading too. On the other hand, further improvement are required in areas of digital approach and payment methods, transportation and logistics, and to empower boundless success and thereby, bring a complete agricultural value chain.

With the loss in income of producers in global supply chains, there are higher [threat towards employment](#) of minors, slave labor, and many other civil rights exploitations. If farmers are unable to earn out of manufacturing critical goods or items, there is maximum possibility that younger generation might leave cultivation completely and bring possibility of risk to the longer period of supply chains.

To achieve greater impact on agriculture sector, sustainability certification can support producers and businesses in recognizing and reducing text-distinct feasibility threat, navigating better achievement, and constructing flexibility. The endpoint is a voyage and not sustenance. Hence sustainable certificate should grow into a motor vehicle which can support as well as accompany entire supply chain amid the voyage.

The necessity to create more translucent, track able and answerable universal food approach might make infections rarely to bounce unexposed from animals to human being.

At present the Certification method approaches are growing broader and in further creative ways that permit the manufacturers, buyers, and businesses to trace farming products from the field till consumption of food. So, traceability

systems should be more strengthened in such a manner that durability threats can be consistently recognized and to address the expenditures made, in order to exhibit from where products commence and in what manner they proceed along the supply chain system. Nowadays, Satellite images are being extensively exercised to track desertification and added ecological threats for example the utility of water and corrosion that bring risk to farmer's production capacity and earnings and as a whole a threat to agriculture supply chain sector.

The institution has launched its recent Sustainable Agriculture Standard on June 30, 2020; to bring normality in this COVID-19 world by incorporating latest instruments to assist producers and businesses to lay down translucent sustainability goals and target on expenditures that can build better positivity influence on human beings as well as to the earth.

It is an opportunity time for institutions to rethink priorities and focus on building and mapping skills and capacities of employees based on their competencies by encouraging employees to enhance their expertise is essential which can aid them at work to emerge as problem-solvers and troubleshooters and reduce redundancies.

In order to rebuild food systems, use of productive resources to leverage digital innovation, smart farming and digital literacy and services for farmers are to be enhanced.

To introduce social safety schemes for crop production and rural area rejuvenation and focusing on endangered categories comprising females, youngsters, laborers, immigrants, primitive masses and marginal farmers, some specific design has to be made, expand and remove the barriers out of it.

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