



Pre Covid

Pre-COVID-19, there were already significant changes occurring in food supply chains. In Asia, there was a "supermarket revolution" taking place, which involved the inclusion of small farmers in the supply chain. In Africa, there was a shift from loose trading relationships to tightly structured supply chains, with a few large retailers sourcing from a small number of exporters. These changes were driven by the emergence of global value chains, which explained the coordination and evolution of production and distribution networks.

Covid-19

COVID-19 had a significant impact on food supply chains globally. In Wuhan, China, the pandemic led to negative impacts on the food supply chain, with a decrease in revenues for food suppliers. Similarly, in the United States and Canada, the pandemic disrupted global food supply chains, leading to limitations in food accessibility, transportation restrictions, and changes in consumer demand. The disruptions caused by the pandemic highlighted the fragility of global food supply chains and the need for resilience and smarter approaches in the post-COVID-19 era.

The impact of the pandemic on food supply chains varied across different regions and sub-sectors. Studies have shown that the overall North American food systems demonstrated resilience, but there were variations depending on market structure, space, and time. The disruptions caused by the pandemic affected different stages of the food supply chain and had varying impacts on different sectors and products. It is important to consider both supply and demand forces when analysing the impact of any crisis on the food and agricultural supply chain.

The COVID-19 pandemic also highlighted the importance of sustainability in food supply chains. The pandemic brought sudden disruptions and increased demand, emphasizing the need to ensure sustainability in uncertain times. Understanding the sustainability factors of food supply chains is critical, especially during times of crisis like the COVID-19 pandemic.

Post Covid

In response to the disruptions caused by the pandemic, there is a need to build smarter and more resilient food supply chains for the post-COVID-19 era. This includes re-strategizing, re-shaping, and re-designing food supply chains with a focus on resilience and sustainability. It is important to understand the sustainability factors of food supply chains, especially during uncertain times like the COVID-19 pandemic, and to ensure the traceability and quality of food products.



Artificial Intelligence (AI) and the Impact on Food Supply Chains

Artificial Intelligence (AI) has the potential to revolutionize food supply chains by improving productivity and supporting various operational aspects. AI technologies, such as knowledge networks, data analytics, forecasting, and optimization, can play a crucial role in building sustainable supply chain financing with supply networks. These technologies enable the storage, processing, and analysis of data, as well as the management of interactions and resourcefulness within the supply chain.

A study by Olan et al. (2021) proposes a conceptual framework for AI-driven supply chain networks in the food and drink industry. Through a set-theoretic comparative approach for data analysis, the study suggests that AI technologies can provide a sustainable financing stream for the food and drink supply chain. By leveraging AI, supply chain networks can enhance their efficiency, responsiveness, and decision-making capabilities, leading to improved overall performance and sustainability.

AI can be applied to various aspects of the food supply chain, including inventory management, demand forecasting, quality control, and logistics optimization. For example, AI algorithms can analyse historical data to predict demand patterns and optimize inventory levels, reducing waste and ensuring timely availability of products. AI can also enable real-time monitoring of food quality and safety, helping to identify and address potential issues before they escalate.

Furthermore, AI can optimize logistics operations by analysing factors such as transportation routes, vehicle utilization, and delivery schedules. By optimizing these processes, AI can reduce transportation costs, minimize carbon emissions, and improve overall supply chain efficiency.

In summary, AI technologies have the potential to significantly enhance food supply chains by improving productivity, efficiency, and sustainability. By leveraging AI-driven supply chain networks, the food and drink industry can benefit from improved financing streams and better decision-making capabilities. The application of AI in various aspects of the supply chain, such as inventory management, demand forecasting, quality control, and logistics optimization, can lead to reduced waste, improved product availability, and more sustainable operations.