

# *Global Best Practices in Transit Facilitation and Supply Chain Management: Exploring Opportunities for Nepal*

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## **Abstract**

Transit facilitation and supply chain management are crucial for improving trade competitiveness, especially for landlocked countries like Nepal, which faces unique challenges due to its dependence on neighboring nations, particularly India, for access to global trade routes. This article explores global best practices in transit facilitation and supply chain management, highlighting how countries with similar geographical constraints, such as Switzerland and Austria, have effectively addressed logistical challenges through integrated infrastructure, digitalization, and regional cooperation. It examines how these strategies can be adapted to Nepal's context to optimize its transit systems, reduce costs, and enhance its trade competitiveness. Key strategies include streamlining customs procedures, adopting digital integration like blockchain and Electronic Data Interchange (EDI), and investing in efficient infrastructure, such as multimodal transport systems and dry ports. The article also underscores the importance of regional cooperation, exemplified by frameworks like ASEAN, which can offer Nepal opportunities to harmonize policies and reduce trade barriers. Furthermore, Nepal's transit challenges—ranging from its dependency on India, infrastructure gaps, bureaucratic delays, and limited digitalization—are discussed, with actionable recommendations for overcoming these obstacles. Opportunities for Nepal include leveraging the India-Nepal Transit Treaty, enhancing digital platforms for transparency, improving infrastructure, and strengthening regional cooperation. By aligning with global best practices and strategically addressing its challenges, Nepal can improve its logistics and transit systems, foster economic growth, and enhance its position in regional and global trade networks. This study provides a comprehensive roadmap for Nepal to build resilience and competitiveness in the evolving global trade landscape.

**Keywords:** Transit facilitation, Supply chain management, Global best practices, Trade competitiveness, Digital integration, Regional cooperation, Infrastructure development, India-Nepal transit treaty

## **Introduction**

Transit facilitation and supply chain management are pivotal for improving trade competitiveness, particularly for landlocked nations such as Nepal. Geographically constrained by its lack of direct access to seaports, Nepal faces unique challenges in integrating into global trade networks. This dependency on transit arrangements with neighboring countries, especially India, underscores the need for efficient and reliable systems to facilitate the movement of goods to and from international markets. In a world increasingly driven by globalization and complex supply chains, adopting global best practices in transit and logistics management is crucial for countries like Nepal to overcome geographical and logistical barriers.

Examining global models provides valuable insights into addressing transit-related challenges. For example, countries such as Switzerland and Austria, which share similar landlocked characteristics, have successfully employed policies like integrated transport infrastructure, digitalization in customs processes, and cross-border agreements to streamline transit operations. By learning from these strategies, Nepal can identify opportunities to optimize its own systems, fostering smoother trade flows and reduced transaction costs. Additionally, collaboration

with regional partners, leveraging technology, and investing in infrastructure development can help Nepal build resilience and enhance its global trade competitiveness.

This exploration is not just about addressing immediate logistical issues but also about paving the way for sustainable economic growth. Effective transit facilitation and supply chain management have the potential to attract foreign investment, increase export capabilities, and bolster Nepal's position in regional and international trade frameworks. This article delves deeper into these global best practices and identifies actionable opportunities for Nepal, aligning them with its economic ambitions and development goals.

## Global Best Practices in Transit Facilitation

1. **Streamlined Customs Procedures:** Leading economies implement key practices to reduce delays and improve trade efficiency. Pre-arrival processing allows traders to submit customs declarations before goods reach borders, expediting clearance and minimizing delays. For instance, the U.S. Automated Commercial Environment (ACE) ensures faster processing and enhances supply chain predictability (CBP, 2021).

Electronic Data Interchange (EDI) replaces manual paperwork with real-time communication between customs, transport operators, and traders. Countries like Singapore and Japan employ advanced EDI systems to accelerate processes and reduce administrative burdens (UNCTAD, 2022). Risk-based inspections, such as Australia's Integrated Cargo System (ICS), prioritize high-risk shipments while streamlining low-risk clearances (Australian Border Force, 2020).

The European Union's New Computerized Transit System (NCTS) integrates electronic declarations and real-time monitoring, reducing delays and promoting trade integration across 35 countries (European Commission, 2021). These innovations highlight the transformative role of digital systems and risk management in modernizing customs, offering insights for Nepal's trade facilitation.

2. **Digital Integration:** Digital integration has become a cornerstone of modern transit facilitation, offering transformative solutions to enhance efficiency, transparency, and cost-effectiveness in supply chain management. Countries such as Singapore have pioneered digital platforms like TradeNet, a comprehensive system that integrates end-to-end supply chain processes. By allowing seamless communication among stakeholders—customs, logistics providers, port authorities, and traders—TradeNet reduces administrative burdens and minimizes delays, resulting in significant cost savings and improved efficiency. Its centralized structure enables real-time tracking of shipments, automated document processing, and expedited customs clearances, setting a global benchmark for trade facilitation (World Bank, 2022).

Another revolutionary innovation in digital integration is blockchain technology. Blockchain ensures secure, tamper-proof records of trade transactions, which enhances trust and transparency across the supply chain. For instance, through the decentralized nature of blockchain, all stakeholders can access a shared ledger that records every stage of a shipment's journey, reducing discrepancies and disputes. This technology is particularly valuable in mitigating risks such as fraud and data manipulation, which can disrupt supply chains. By streamlining complex processes and ensuring accountability, blockchain contributes to smoother trade operations and fosters greater confidence among trading partners (World Bank, 2022).

Adopting such digital practices offers substantial benefits for landlocked countries like Nepal, where trade is heavily reliant on transit through neighboring countries. Digital platforms and blockchain can address key inefficiencies in Nepal's current transit systems by reducing paperwork, ensuring timely delivery, and creating secure, transparent records of goods in transit. Investing in these technologies could significantly enhance Nepal's ability to integrate into global supply chains, improve its trade competitiveness, and attract foreign investment. Emulating global leaders in digital transit facilitation will enable Nepal to overcome its geographical constraints and strengthen its trade potential.

3. **Regional Cooperation:** Regional cooperation is a critical pillar of effective transit facilitation, offering a framework for harmonizing policies, reducing trade barriers, and fostering economic integration. Agreements such as the ASEAN Free Trade Area (AFTA) exemplify how regional trade frameworks can streamline cross-border trade. By standardizing regulations, simplifying customs procedures, and minimizing non-tariff barriers, AFTA has enhanced trade efficiency among its member states, creating a more predictable and seamless transit environment (ASEAN Secretariat, 2023). Such cooperation promotes mutual benefits, including reduced transit times, lower logistics costs, and expanded market access for businesses. For landlocked countries like Nepal, emulating these practices by fostering stronger regional ties, particularly within South Asia, can help address transit challenges and boost economic growth.
4. **Efficient Infrastructure:** Investing in efficient infrastructure is a cornerstone of modern transit facilitation, significantly reducing transit time and costs while enhancing overall supply chain performance. Multimodal

transport systems, which integrate road, rail, and waterways, allow seamless movement of goods, optimizing routes and reducing dependency on a single transport mode. Dedicated freight corridors and inland container depots (ICDs) further bolster efficiency by streamlining cargo handling and reducing congestion at ports.

China's Belt and Road Initiative (BRI) exemplifies the transformative impact of large-scale infrastructure development. By building an extensive network of railways, highways, and logistics hubs across multiple countries, the BRI has improved regional connectivity, lowered trade costs, and created new economic opportunities (UNESCAP, 2023).

For Nepal, strategic investments in similar infrastructure, including cross-border corridors and ICDs, could significantly enhance its trade potential. Such developments would enable faster transit, reduce logistical costs, and improve integration into global value chains, thereby driving economic growth.

5. **Single Window Systems:** Countries like South Korea have successfully implemented single window systems that integrate all regulatory requirements into one digital platform, expediting cargo clearance and reducing redundancies (OECD, 2022). Single window systems have revolutionized transit facilitation by consolidating all regulatory and compliance processes into a unified digital platform, significantly expediting cargo clearance and eliminating redundancies. South Korea stands out as a global leader in this domain, with its advanced single window system enabling seamless coordination among customs authorities, port operators, and other regulatory agencies. By providing a single point of access for submitting and processing trade-related documents, this system reduces paperwork, minimizes delays, and enhances transparency in trade operations (OECD, 2022). Such systems offer substantial benefits, including lower administrative costs, faster transit times, and improved predictability in supply chain management. For Nepal, adopting a similar approach could simplify cross-border trade, boost efficiency, and enhance its competitiveness in global markets.

## Nepal's Transit Challenges

1. **Dependency on India:** Nepal's transit challenges are primarily rooted in its heavy reliance on India for access to international trade routes. The country's trade is predominantly channeled through Indian ports like Kolkata and Visakhapatnam, creating a dependency on India's infrastructure and transport systems. This dependence exposes Nepal to significant vulnerabilities, particularly in the face of geopolitical uncertainties and potential disruptions in cross-border trade relations. Any political or economic tensions between Nepal and India could lead to delays, higher costs, or even interruptions in the flow of goods. Such challenges highlight the need for Nepal to explore alternative trade routes and diversify its access to global markets to reduce reliance on a single neighboring country. Nepal's trade largely depends on Indian ports such as Kolkata and Visakhapatnam, leading to vulnerabilities due to geopolitical factors (ADB, 2023). Even though, The Transit Treaty between Nepal and India plays a crucial role in addressing Nepal's dependency on India for international trade. The treaty, which was signed in 1999 and renewed periodically, grants Nepal the right to access Indian ports and transport routes for the movement of goods to and from third countries. The provisions of the treaty ensure that Nepal's trade flows through Indian territory are facilitated under agreed terms, promoting smooth transit operations.
2. **Infrastructure Gaps:** Nepal faces significant transit challenges due to its infrastructure gaps, which hinder the efficient movement of goods and trade. The country's road networks, particularly in rural and remote areas, are often poorly developed or in disrepair, causing delays and increasing transportation costs. Inadequate warehousing facilities further exacerbate the issue, as limited storage space and outdated facilities create bottlenecks in supply chains, leading to inefficiencies in managing inventories and distributing goods. Additionally, the lack of multimodal transport options—such as integrated systems that combine road, rail, and air transport—limits the flexibility and scalability of Nepal's logistics sector. This absence of seamless connectivity between different modes of transport prevents the country from optimizing its trade routes and reduces its competitiveness in regional and global markets. Consequently, these infrastructure limitations not only increase the cost of doing business but also hinder Nepal's ability to efficiently tap into international trade opportunities.
3. **Bureaucratic Delays:** Lengthy customs clearance processes and non-standardized documentation add to transit times and costs. Bureaucratic delays are a significant challenge for Nepal's transit system, contributing to increased transit times and costs. Lengthy customs clearance processes, including multiple checks and approvals, often lead to substantial delays at border crossings and ports. These delays are exacerbated by a lack of standardization in documentation and procedures, which makes it difficult for traders to navigate the complex and inconsistent requirements across different transit points. According to a 2023 report by the Asian Development Bank (ADB), these inefficiencies in customs and documentation not only slow down the movement of goods but also lead to higher operational costs, as businesses must pay for additional handling and

storage during prolonged waiting times. The World Bank (2021) further emphasizes that these bureaucratic hurdles prevent businesses from planning and coordinating shipments effectively, thus diminishing Nepal's competitiveness in international trade. Streamlining and standardizing these processes is essential for improving trade facilitation in Nepal (ADB, 2023; World Bank, 2021).

4. **Limited Digitalization:** The lack of advanced digital systems for tracking goods and managing supply chains affects operational efficiency. Limited digitalization remains a significant challenge in Nepal's transit system, hindering the efficient movement of goods and increasing operational costs. The absence of advanced digital systems for tracking shipments and managing supply chains results in delays, lack of real-time visibility, and increased vulnerability to errors or theft. Without integrated platforms that utilize technologies such as GPS, blockchain, or AI, it becomes difficult to optimize routes, monitor cargo, or manage inventory efficiently. The Asian Development Bank (2023) notes that outdated systems and a reliance on manual processes lead to inefficiencies, especially during customs clearance and transit operations, which further add to the transit time and costs. Additionally, the World Bank (2021) highlights that Nepal's limited digital infrastructure also prevents stakeholders from collaborating effectively, as information is not readily accessible across different entities involved in the logistics chain. The digital divide thus impacts Nepal's trade competitiveness and its ability to integrate with global supply chains, making it crucial to invest in modern digital solutions to improve efficiency and transparency (ADB, 2023; World Bank, 2021).

## Opportunities for Nepal

1. **India-Nepal Transit Treaty:** The India-Nepal Transit Treaty, a cornerstone agreement governing trade and transit between the two nations, offers Nepal significant opportunities to enhance its transit facilitation and supply chain management. One of the key benefits is the access to Indian ports, including Kolkata, Haldia, and Vishakhapatnam, which serve as Nepal's primary gateways for international trade. These ports provide crucial connectivity for Nepal, facilitating cost-effective and efficient movement of goods to and from global markets (Government of Nepal, 2020). Moreover, the treaty provisions allow for transit rights across Indian territory, which are vital for a landlocked country like Nepal. This access helps mitigate geographic disadvantages and reduces logistics costs, enhancing Nepal's trade competitiveness. For instance, the provision for electronic cargo tracking systems (ECTS) enables real-time tracking of shipments, improving transparency and reducing transit times (Ministry of External Affairs, India, 2021).

The treaty also underscores streamlined customs procedures, including provisions for pre-arrival processing, simplified documentation, and risk-based inspections, aligning Nepal with global best practices. Such measures not only expedite cross-border trade but also minimize costs associated with delays and demurrage, thereby benefiting Nepalese traders (World Bank, 2022). In addition, the treaty promotes regional cooperation by integrating Nepal into South Asia's broader supply chain networks. Leveraging its strategic location, Nepal can position itself as a transit hub for regional trade between India, China, and Bangladesh. This regional integration can open up opportunities for new trade routes, increased foreign investment, and enhanced market access (Asian Development Bank, 2021).

The India-Nepal Transit Treaty, when coupled with global best practices in transit facilitation such as digitized customs systems and risk-based inspections, provides Nepal with a unique platform to modernize its supply chain infrastructure. By capitalizing on these opportunities, Nepal can overcome its landlocked challenges and emerge as a more competitive player in regional and global trade.

2. **Adopting Digital Platforms:** Developing a national single window system and leveraging blockchain for supply chain transparency can significantly improve trade efficiency. Collaborations with international organizations for technical expertise and funding can accelerate implementation (World Customs Organization, 2023).
3. **Improving Infrastructure:** Investing in strategic infrastructure such as dry ports, rail connectivity to Indian ports, and integrated check posts (ICPs) can reduce logistical bottlenecks. Projects like the Kathmandu-Tarai Fast Track and planned rail links with India and China can further enhance connectivity. Nepal has established dry ports under the Ministry of Industry, Commerce, and Supply through a nodal agency called the Nepal Intermodal Transport Development Board (NITDB). These dry ports, developed to provide critical logistical support, whereas NTWCL also working on the same. Facilities at locations such as Birgunj and Bhairahawa have significantly enhanced customs clearance efficiency and reduced dependence on foreign infrastructure (NITDB, 2023).
4. **Strengthening Regional Cooperation:** Joining regional frameworks such as the South Asia Subregional Economic Cooperation (SASEC) program can facilitate knowledge sharing and access to funding for transit projects (SASEC Secretariat, 2022).

5. **Capacity Building:** Enhancing the skills of customs officials and logistics professionals through training programs can address inefficiencies in handling goods (World Trade Organization, 2023).
6. **Policy Reforms:** Simplifying trade-related regulations, aligning with international standards, and fostering public-private partnerships (PPPs) can attract investment in the supply chain sector.
7. **Leveraging Geopolitical Location:** Nepal's strategic location between India and China positions it as a potential transit hub for regional trade. Strengthening trilateral trade agreements and infrastructure development can unlock this potential (UNCTAD, 2023).

## **Logistics and Transit Facilitation Initiatives in Nepal**

Nepal has taken significant steps to address logistical challenges and facilitate transit through the development of dry ports, road and rail connectivity, and institutional frameworks. The Nepal Intermodal Transport Development Board (NITDB), under the Ministry of Industry, Commerce, and Supply, is the nodal agency responsible for the development and management of dry ports. Key dry ports at Birgunj, Bhairahawa, and Kakarbhitta have been instrumental in providing inland clearance facilities, reducing dependency on Indian transit points (NITDB, 2023).

The NTWCL plays a complementary role by supporting the government's logistical initiatives. By providing warehousing facilities, managing customs clearance operations, and facilitating cross-border trade, NTWCL ensures smoother transit for Nepal's imports and exports. Additionally, the proposed rail connectivity projects with China and India aim to integrate Nepal into regional and global supply chains more effectively (Nepal Railways Company, 2023).

**Case Study: Inland Container Depots (ICDs):** The development of Inland Container Depots at key locations in Nepal, such as Birgunj and Bhairahawa, demonstrates the potential for improved trade facilitation. These ICDs have reduced dependency on Indian warehouses, lowered transit times, and provided customs clearance facilities closer to trade hubs. Additionally, NTWCL's involvement in managing these facilities can be expected to contribute more to smoother logistical operations.

## **Future Directions for Nepal**

Here, focus on enhancing logistics and transit systems by developing a national strategy aligned with regional trade, fostering public-private partnerships for infrastructure investment, and utilizing digital technologies like blockchain, GPS, and AI for improved supply chain management. It also emphasizes strengthening institutions like NITDB and NTWCL, improving their capacity to address logistics challenges, and promoting environmentally sustainable practices such as electrified rail transport and sustainable warehousing.

To justify the establishment of NTWCL by the Government of Nepal and strengthen its relevance, it is proposed that the management of the dry port constructed by the NITDB be entrusted to NTWCL. Leveraging NTWCL's proven expertise in logistics, transit, and warehouse management, this transition would fulfill the purpose of its establishment, ensure the dry port's sustainability, and enhance operational efficiency while aligning with the mutual objectives of both organizations.

1. **Integrated Logistics Planning and Management:** Developing a national logistics strategy that aligns with regional trade frameworks and prioritizes multimodal transport development. By working together, NTWCL and NITDB can play a pivotal role in crafting and implementing this strategy, ensuring cohesive efforts toward advancing Nepal's trade and logistics infrastructure.
2. **Public-Private Partnerships (PPPs):** Encouraging private sector investment in logistics infrastructure and digital solutions.
3. **Digitalization and Transparency:** Expanding the use of technologies like blockchain, GPS tracking, and artificial intelligence (AI) in supply chain management.
4. **Strengthening Institutions:** Enhancing the capacity of institutions like NITDB and NTWCL to manage logistics and transit challenges effectively.
5. **Environmental Sustainability:** Promoting eco-friendly logistics practices, such as electrified rail transport and sustainable warehousing.

## Conclusion

By adopting global best practices and addressing domestic challenges, Nepal can transform its transit and supply chain landscape, fostering economic growth, reduce logistic cost and regional integration. Strategic investments in digitalization, infrastructure, and policy reforms are key to realizing these opportunities. With concerted efforts from the government, private sector, and international partners, Nepal can emerge as a competitive player in the global trade arena.

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