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The Reality of the Supply Chain of NAFTAL – Fuel Branch of Tamanrasset

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Abstract:
This study aims to examine the actual state of the supply chain at NAFTAL, Tamanrasset Branch, given the critical importance of supply chain management in this institution for achieving local development, executing major economic projects, and ensuring the continuous movement of vehicles, individuals, machinery, and equipment, among other activities.
The study seeks to identify the theoretical framework related to the supply chain, highlight the concept of the logistics function, and investigate the practical reality of the supply chain within NAFTAL – Fuel Branch of Tamanrasset. Findings indicate that the province of Tamanrasset is supplied twice a week by NAFTAL branches in Hassi Messaoud and Adrar through road-transport trucks. During the period extending from July 2019 to December 2024, the number of fuel-carrying trucks reached 65,574, most of which belong to the SNTR company. This quantity is distributed among public and private fuel stations, public economic institutions, and private enterprises engaged in major investments, while ensuring the maintenance of stable stock levels.
Keywords: supply chain; supply chain management; logistics; NAFTAL; Tamanrasset; Algeria.

1. Introduction:

Institutions today face unexpected challenges, largely driven by rapid and extensive technological developments and an increasingly competitive environment. These pressures require organizations to enhance their performance and improve operational efficiency, even if this necessitates restructuring existing systems and procedures to deliver high-quality products and services at the lowest possible cost and within designated time frames.
As a result, significant attention has been directed toward supply chain-related operations, as the supply chain represents a fundamental pillar for institutional success regardless of size, objectives, or field of activity. Its importance stems from its direct connection to the flow of information, materials, services, and financial resources, as well as its contribution to transforming organizational and knowledge processes. Effective supply chain management also plays a critical role in cost reduction, risk management, and profit maximization.
NAFTAL is regarded as one of the most significant national institutions, covering the fuel needs of the entire national territory through an extensive distribution network spanning all regions of

Algeria. It produces, refines, and distributes various types of fuel, a vital resource that constitutes a primary driver of the national economy. Therefore, supply chain management within this institution plays a pivotal role in achieving local development, implementing major economic projects, and supporting the movement of vehicles, individuals, machinery, and equipment.

Research Problem:

Meeting customer needs at the appropriate time and in the appropriate quantity, from primary sources to final consumers, represents a fundamental objective for any institution. Achieving this requires effective control over the flow of materials and information. Consequently, the institution must extend control beyond internal boundaries by integrating suppliers and customers in a manner that ensures the availability and proper distribution of this vital resource throughout Algeria.

The research problem can be formulated as follows: **What is the reality of the supply chain at NAFTAL – Fuel Branch of Tamanrasset?**

To address this central question, the following sub-questions are posed: – What is meant by supply chain management?

What does the logistics function encompass?

– What is the actual state of the supply chain at NAFTAL – Fuel Branch of Tamanrasset?

Research Objectives:

The objectives of the study can be summarized as follows:

– Identify the theoretical framework related to the supply chain;

– Highlight the concept and importance of the logistics function;

– Explore the reality of the supply chain at NAFTAL – Fuel Branch of Tamanrasset.

Research Methodology:

To address the research problem, the descriptive–analytical method was adopted. This approach relied on previous studies to support the theoretical dimension and examined the situation of NAFTAL – Fuel Branch of Tamanrasset in order to determine the actual state of its supply chain.

2. The Theoretical Framework of the Supply Chain

2.1 Definition of the Supply Chain:

The supply chain is defined as “a set of methods and approaches aimed at achieving integration among suppliers, manufacturing, warehouses, and storage facilities to produce goods and distribute them in the required quantity and at the appropriate time, with the objective of reducing costs while maintaining the desired level of service.”

It is also described as a consecutive chain of suppliers who contribute to the production and delivery of a good or service to the final user. This encompasses all aspects of work, including sales processing, production, inventory management, material supply, distribution, purchasing, storage, customer service, and many other related functions. (Houssam Ahmed Jaber Ahmed,

March 2022, p. 125)

Table 1: Definition of the Supply Chain

Author	**Definition**
Jones & Riley (1985)	Involves planning and controlling the total flow of resources from the supplier to the final customer through the manufacturer and distributor.

Ellram (1991)	A network of interacting and interconnected companies through various flows, from raw material supply to final delivery, working together to provide products or services to end customers.
Lee & Billington (1999)	A network of facilities that ensure the functions of supplying raw materials, converting them into components and then into finished products, as well as distributing these products and delivering them to the customer.
Tayur et al. (2001)	A system composed of subcontractors, manufacturers, distributors, retailers, and customers, where materials flow from suppliers to customers, while information flows in both directions.
Chopra & Meindl (2003)	Includes all activities that directly or indirectly affect the fulfillment of customer orders. The supply chain comprises not only the manufacturer and suppliers, but also transportation, warehouses, retailers, and the customers themselves.
Hugs (2003)	
Lambert et al. (2005)	A network of independent companies or business units extending from the primary supplier to the final customer.
Gilles Paché (2009)	A set of activities and processes through which materials and components are supplied from the supplier network, transformed into intermediate or final products, and then distributed to consumers.

***Source**: Akasem Omar, December 2015, p. 199*

2.2 Types of Supply Chains:

Supply chains can be classified into three categories based on the components of the production system: (Akasem Omar, Laraj Moujahid Nassima, December 2015, p. 120)

– **Upstream supply chain:** includes suppliers responsible for providing the institution with production inputs, resources, and components;

– **Internal supply chain:** includes all activities aimed at ensuring the provision of products through assembling and processing materials and essential resources under optimal cost and timing conditions;

– **Downstream supply chain:** involves the distribution of products and tracking their movement until they reach the customer.

Every institution involved in the flows from the point of origin to the destination— whether effectively or efficiently—is considered an actor within the supply chain. Accordingly, each supply chain assigns specific roles to institutions, whether as suppliers, producers, service providers, retailers, or final customers. Based on Mentzer's classification of supply chains, the

actors in each type can be identified as follows: (Abderrahmane Afissa, 2018, pp. 21–23)

– **Direct supply chain:** In this case, the supply chain includes only the producing institution, its direct supplier, and its final customer—representing the minimum extent of a supply chain.

– **Extended supply chain:** This type includes additional categories of actors, such as the supplier's supplier (upstream final supplier) and the customer's customer (downstream final customer).

– **Ultimate supply chain:** This type takes the form of a network composed of all organizations involved in the supply chain. It is highly complex due to the numerous links and the diversity of relationships among different actors.

2.3 Definition of Supply Chain Management:

Supply chain management is defined as a set of activities, processes, and practices carried out by a business organization in cooperation with its suppliers, ensuring the optimization of internal operations to deliver a final product that satisfies customers and generates profits for shareholders. It involves planning, organizing, directing, and controlling all organizational activities to deepen and strengthen relationships with suppliers, intermediaries, distributors, and customers, while improving and developing internal processes to ensure the flow of products, funds, expertise, and information along the chain linking suppliers, the organization, and customers.

This aims to maximize the benefit for all links in the chain within a network of interdependencies among supply, manufacturing, and distribution centers, ultimately improving the flow of goods, services, and information from the primary supplier to the final customer.

According to the Global Supply Chain Forum (GSCF), supply chain management refers to the integration of core business processes across the primary supplier, who provides products, services, and information that generate added value for customers. (Amro Mostafa Mohamed Hussein, April 2019, pp. 403–404)

2.4 The Main Components of the Supply Chain Management System:

(Amro Mostafa Mohamed Hussein, April 2019, pp. 403–404)

– **Planning:** includes forecasting product demand and promoting collaborative planning among the various departments within the organization.

– **Supplier Relationship Management:** strategic partnership relations with suppliers aim to build and develop long-term relationships through which the organization and the supplier jointly formulate and develop plans for product design and development.

– **Purchasing:** includes centralized procurement, communication with suppliers, supplier evaluation, securing strategic materials, and reducing the number of suppliers to the lowest possible level.

– **Warehouse Management:** includes determining stock levels, reducing inventory size, and managing stored assets.

– **Manufacturing Methods:** aim to achieve optimal cost and quality, reduce inventory size, and improve the management of stored assets.

– **Order Management:** includes managing the sales process to customers and receiving payments in coordination with the financial department.

– **Internet-Supported Supply Chain and Integration with the Entire Chain:** involves linking supply chain management with customers and coordinating among all departments across organizational levels through the use of the internet and the activation of e-commerce.

– **Information System for Supply Chain Management:** establishing an information system that includes all data relevant to stakeholders in the chain, with the possibility for customers to access the supply chain management information system.

– **Customer Relationship Management:** includes managing customer information and all processes related to customers and stakeholders. It aims to establish strategic partnership relations that enhance customer satisfaction and improve the management of customer relations.

– **Indicators and Tools for Managing and Improving Performance:** include monitoring and following up on the key factors affecting the supply chain and working toward achieving optimal supply chain performance. This represents a control-oriented process whose primary goals are evaluation, improvement, and the removal of obstacles facing the supply chain.

– **Logistics and Transportation:** include the flow and movement of materials, transportation inside and outside the organization's boundaries, determining routes, and scheduling movements.

3. The Theoretical Framework of Logistics

3.1 The Nature of Logistics:

Logistics is defined as "the efficiency and effectiveness of planning, implementing, and controlling the flow and storage of raw materials, work-in-progress inventory, final goods, and the information related to them from the point of origin to the point of consumption, with the goal of satisfying the consumer and meeting their needs."

This definition highlights a focus on tangible goods. In practice, many companies provide services rather than physical products, yet they encounter similar logistical challenges. Therefore, the core mission of logistics lies in delivering the right product or service, to the right place, at the right time, in the right form and condition, while achieving the highest possible return for the organization. (Kalbaza Amal, Ben Harrat Hayat, no publication year, p. 75)

The concept of logistics encompasses all activities responsible for the movement of raw materials and components from suppliers, their internal movement during the production process, and the movement of finished goods toward the final consumer. Some individuals confuse transportation, distribution, and supply activities with the broader concept of logistics.

However, logistics is more comprehensive and general, as it integrates all movement and storage activities that allow the product to progress from the stage of raw material acquisition to its final

usable form for customers and consumers—at the right time, in the right place, in the right form, and at the lowest possible cost. (Mohamed Abdel- Alim Saber, 2008, p. 14)

Several types of logistics can be distinguished depending on their objectives and methods:

– **Supply Logistics:** ensures the procurement of raw materials, components, and secondary parts necessary for production to reach factories.

– **General Supply Logistics:** ensures the supply of various materials required for the activities of service institutions or public administrations (e.g., office supplies).

– **Production Logistics:** represents internal flows (within factories and between production sites). It includes bringing in various materials and components needed for production and conducting production planning. This type of logistics tends to encompass the entire production management process.

– **Military Logistics:** aims to transport forces and all resources necessary for their operational functions, reconnaissance, and support.

– **Support Logistics:** originally emerged in the military field but has expanded to other sectors such as aviation, energy, and industry. It organizes all activities required to maintain the operation of any complex system, including maintenance tasks.

– **After-Sales Service Activity:** associated with support logistics, yet distinct in that it occurs at the level of product markets. The term "service management" is often used to refer to the administration of these activities. Support-related logistics is typically carried out by specialized actors who differ from manufacturers and end users.

– **Reverse Logistics:** involves recovering products that are unwanted by the consumer or require repair, in addition to dealing with industrial waste, packaging, and unusable products—from car wreckage to printer ink cartridges. (Zebchi Nawel, Yousfi Rachid, 2018, pp. 277–278)

– **Distribution Logistics:** also referred to as transportation logistics, seeks to ensure the rapid and efficient delivery of the product to the customer. A product that is high- quality, functional, or competitively priced loses its value if it does not reach the customer at the agreed time, in the required form, and in the correct quantity. Distribution logistics may be direct or indirect, in which case intermediaries are involved. (Ghrid Omar, Khalil Sanaa, 2022, p. 16)

3.2 The Importance and Objectives of Logistics:

Logistics aims to achieve a set of fundamental objectives, including the following: (Fares Boubakour, 2017, p. 53)

– Reducing inventory through faster turnover;

– Providing appropriate and rapid responses to fluctuating demand;

– Improving the relationship between producer and consumer and achieving zero defects;

– Proper management of logistical flows by avoiding bottlenecks and failures and ensuring the optimal sequence of operations;

– Achieving profitability and enhancing competitiveness through the reduction of logistics costs and the provision of a high level of service;

– Providing the right product, in the right quantity, in the right place, at the right time, to the right customer, and at the right cost;

– Achieving the so-called five zeros: zero inventory, zero delays, zero paperwork, zero errors, and zero breakdowns. (Adel Ziyadi, Adel Zayyat, 2021, p. 578)

According to the World Bank, logistics activities are vital and indispensable for commercial and economic activities in modern economic systems. These activities also mobilize material and human resources that significantly influence national economies. For instance, logistics activities account for 19% of national wealth in the United States of America and employ approximately 13% of the national workforce.

Similarly, in the United Kingdom, logistics activities represent 30% of GDP. Moreover, applying logistics principles in the production of goods and services can reduce product prices by more than 20%. In addition, logistics systems achieve high global efficiency in terms of on-time delivery—a core principle in management science—where just-in- time delivery policies are among the modern techniques used in operations management. (Makawi Mohamed Al-Amin, 2019, p. 524)

3.3 Logistics Activities

Logistics activities are divided into two main categories as follows: (Hachrouf Fatima Al-Zahra and others, 2017, pp. 166–167)

1. **The core activities of logistics:**

– **Customer service:** Customer service is the focal point of all other logistical functions, as the planning of all activities is based on the requirements of this process. It necessitates studying customer needs and expectations to satisfy them effectively.

– **Transportation:** Involves selecting the appropriate means required by the institution, determining routes, preparing schedules, and monitoring variations in transportation offers. Transportation cost is considered one of the most significant internal expenditures within the institution.

– **Storage**

– **Information flow**

2. **Supporting activities:**

– **Demand forecasting:** Most managerial decisions in institutions rely on forecasting for purchasing, production, transportation, and storage decisions.

– **Purchasing function:** Defined as the activity responsible for providing the institution with the required materials and equipment.

– **Handling function:** Refers to the movement and transfer of various products from one location to another.

– **Packaging and wrapping:** Most products and components are placed in packages of

different shapes and sizes to enhance handling efficiency. Packaging also contributes to protecting goods from damage.

– **Coordination with other functions**

4. The Applied Framework

4.1. Introduction to NAFTAL Company:

The establishment of NAFTAL, responsible for the distribution and marketing of petroleum products, traces back to Sonatrach—the central pillar of the national economy due to its significant domestic and international importance. Sonatrach meets the national energy needs and is the largest Algerian petroleum company engaged in the extraction, refining, and production of petroleum and natural gas. It also conducts extensive research in petroleum sciences and earth geology.

NAFTAL originally operated as the commercial division of Sonatrach, entrusted with the distribution of fuels at the national level. Following the restructuring of Sonatrach, several institutions were created, each assigned specific missions to ensure an effective management system. Among these institutions is the National Company for Refining and Distribution of Petroleum Products, "NAFTAL," established under Decree No. 80/101 dated 06/04/1980. The decree defined specific missions and objectives for the company, which officially began operating on 01/01/1982. In 1987, the company's activities were divided into two primary segments: refining and distribution of petroleum products. (Nawal Cheen, 2017, p. 197)

In 1989, two national companies were created:

– **NAFTAK:** responsible for refining petroleum products

– **NAFTAL:** responsible for marketing and distributing petroleum products

In 1999, the centralization of activities related to stocks, sales, and customers was eliminated, and an integrated information system was introduced. In 1988, an Industrial Safety Unit was created, followed by the establishment of the Directorate of Audit and Control, the Directorate of Liquefied Petroleum Gas, and the Directorate of Aviation and Navigation.

In 2006, the company was restructured into various sub-activities, including the Fuel Branch, Commercial Branch, Gas Branch, International Activities Branch, in addition to the implementation of the company's analytical accounting system. A Gas Network Branch was also established.

In 2007, a branch dedicated to petroleum derivatives was created, covering products such as Fuel (Sirghaz) and Natural Gas (G.P.L/C). In 2008, an Environmental Unit was established, focusing on pollution control and environmental protection. (Daas Moussaab, Ayman Farid, 2020, p. 34)

In 2020, NAFTAL marketed a total volume of 16.1 million tons of petroleum products, as shown in the following table:

Table 2: NAFTAL Achievements in 2023

Product	Achievements 2023
Fossil fuel (million metric tons)	12.1
Jet fuel (thousand metric tons)	636.4
Marine fuel (thousand metric tons)	333.2
Gas (million metric tons)	2.5
Asphalt (thousand metric tons)	401.8
Lubricants (thousand metric tons)	78.1
Special products (thousand metric tons)	5.9
Tires (thousand units)	236.4

***Source**: Official NAFTAL website, Annual Report*

– **Turnover:**

In 2023, NAFTAL's activities generated a turnover of 423.1 billion dinars, representing an increase of 4.57% compared to 2022 (404.6 billion dinars).

– **Investments:**

Investment expenditure in 2023 amounted to 23.9 billion dinars. –

Training:

In 2023, the number of employees who received training in the company's core business activities and other fields (such as human resources, finance, and auditing) reached 9,554 employees.

– **Workforce:**

As of 31 December 2023, the total number of employees reached 32,107. (Official NAFTAL website, Annual Report)

4.2 Case Study of NAFTAL – Fuel Branch of Tamanrasset

NAFTAL – Fuel Branch of Tamanrasset is a commercial branch of the parent company located in the Cheraga district in Algiers. It markets five types of fuel for gasoline and diesel engines as follows:

– Regular gasoline
– Premium gasoline
– Unleaded gasoline
– Diesel
– Liquefied petroleum gas

The efforts made by NAFTAL – Tamanrasset Branch to supply the province with fossil fuel on

time and prevent shortages of this sensitive commodity—which would paralyze the economic sector—have led to a strong focus on effective coordination among supply chain stakeholders, particularly on logistics. This is confirmed by the statistics in the following table:

Table 3: Supply Logistics

Time Period	**Number of Fuel Trucks**
Second half of 2019	4,269
First half of 2020	3,669
Second half of 2020	4,487
First half of 2021	4,895
Second half of 2021	5,647
First half of 2022	7,187

Second half of 2022	7,208
First half of 2023	8,426
Second half of 2023	6,566
First half of 2024	6,805
Second half of 2024	6,415
Total	**65,574**

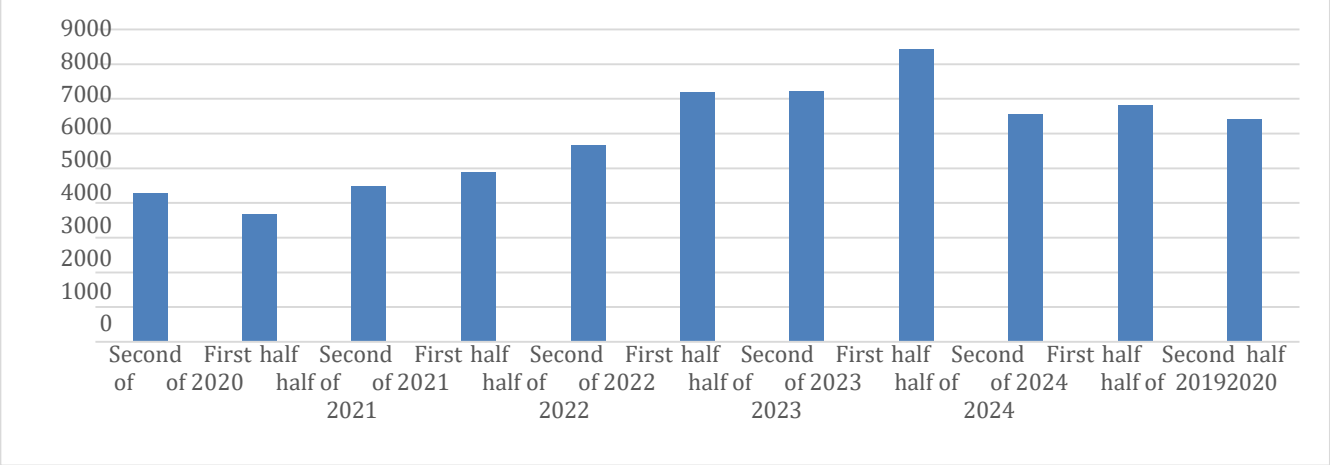
***Source**: Prepared by the researchers based on company documents.*

From Table 3, it is observed that the number of trucks loaded with fossil fuel arriving from the NAFTAL Hassi Messaoud Branch or the NAFTAL Adrar Branch experienced significant growth during recent years, from July 2019 to December 2024, supplying the province with a total of 65,574 trucks.

From Figure 1, it is evident that the number of fuel-loaded trucks increased steadily during this period, reaching its highest level in the first half of 2023, with a total of 8,426 trucks. A considerable rise of 2,146 fuel-loaded trucks, equivalent to 33.45%, is also noted between the second half of 2019 and the second half of 2024.

An exception is recorded during the first half of 2020, when the number of fuel trucks decreased due to the onset of the COVID-19 crisis and the subsequent implementation of lockdown measures.

Figure 1: Development of Supply Logistics



***Source**: Prepared by the researchers based on previous data.*

Fossil fuel is distributed among fuel stations as follows: – 08 in Tamanrasset

05 in In Guezzam

- 02 in Tin Zaouatine
- 02 in Abalessa
- 01 in In Amguel
- 01 in Silet
- 01 in Tazrouk
- 01 in Idles

In addition to these stations, distribution is also extended to economic operators based on demand, including enterprises specialized in construction, public works, and gravel- crushing quarries.

Table 4: Distribution of Regular Gasoline

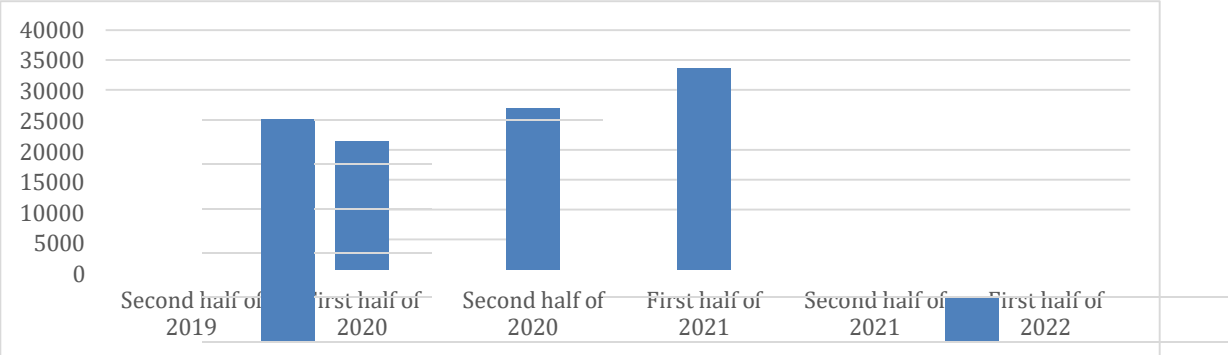
Time Period	**Regular Gasoline Distributed (m^3)**
Second half of 2019	25,473
First half of 2020	21,459
Second half of 2020	26,902
First half of 2021	33,614
Second half of 2021	4,702
First half of 2022	0
Total	**112,150**

***Source**: Prepared by the researchers based on company documents.*

From Table 4 and Figure 2, the quantity of regular gasoline distributed among fuel stations is clearly illustrated, and the following observations can be made:

- In the first half of 2020, the quantity decreased by 4,014 m^3, due to the COVID-19 crisis, which affected nearly all economic sectors. The crisis also negatively impacted the movement of individuals between provinces due to fear of virus transmission, especially at the early stages of the pandemic. The distributed quantities then began to increase steadily during the second half of the same year.
- A significant increase in the quantity of regular gasoline was recorded in the first half of 2021, attributed to the suspension of air travel and complete reliance on road transportation.
- A sharp decline in the quantity of regular gasoline occurred during the second half of 2021, estimated at 28,912 m^3, equivalent to 86.01%, until the quantity reached zero at the beginning of the first half of 2022. This was due to the suspension of distribution of this product because of its harmful effects and its pollutant content, which pose environmental and public health risks.

Figure 2: Development of Regular Gasoline Distribution



***Source**: Prepared by the researchers based on previous data.*

Table 5: Distribution of Premium Gasoline

Time Period	Premium Gasoline Distributed (m^3)
Second half of 2019	5,208
First half of 2020	5,302
Second half of 2020	6,083
First half of 2021	6,613
Second half of 2021	0
First half of 2022	0
Total	**23,206**

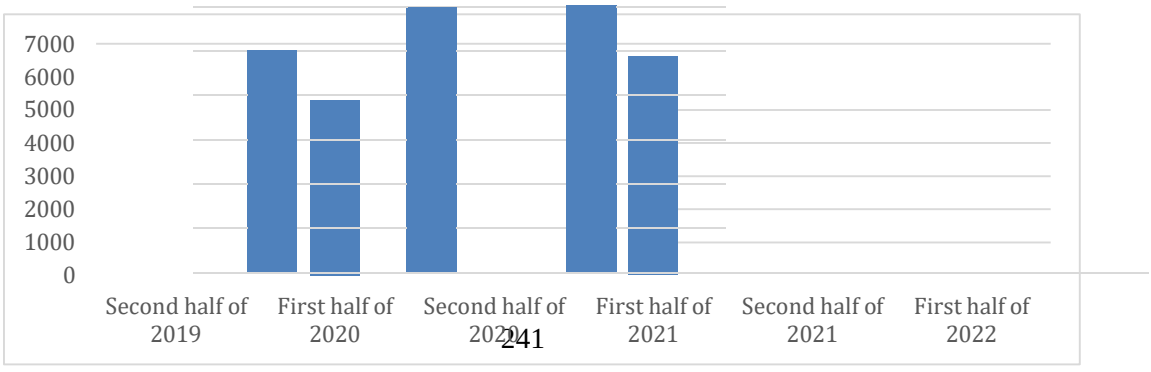
***Source**: Prepared by the two researchers based on company documents.*

From Table 5 and Figure 3, the quantity of premium gasoline distributed among fuel stations is clearly displayed, leading to the following observations:

– A continuous increase estimated at 1,405 m^3, equivalent to 21.25%, is recorded from the second half of 2019 to the first half of 2021.

A complete halt in the distribution of premium gasoline occurred at the beginning of the second half of 2021. This decision is consistent with the government's program aimed at energy transition and the shift toward consuming cleaner fuel types.

Figure 3: Development of Premium Gasoline Distribution



***Source**: Prepared by the two researchers based on previous data.*

Table 6: Distribution of Unleaded Gasoline

Time Period	**Unleaded Gasoline Distributed (m^3)**
Second half of 2019	162
First half of 2020	243
Second half of 2020	369
First half of 2021	1,533
Second half of 2021	47,026
First half of 2022	67,751
Second half of 2022	74,952
First half of 2023	66,555
Second half of 2023	83,619
First half of 2024	64,503
Second half of 2024	99,576
Total	**506,289**

***Source**: Prepared by the two researchers based on company documents.*

From Table 6, the quantity of unleaded gasoline distributed among fuel stations is clearly presented, and the following observations can be made:

– A continuous increase in the distribution of unleaded gasoline is evident, although the quantities and pace of growth remain very small and almost negligible during the period from the second half of 2019 to the first half of 2021.

– A substantial increase in the quantity of unleaded gasoline distributed begins in the second half of 2021, reaching 99,576 m^3 by the end of the second half of 2024. This increase is due to unleaded gasoline becoming the only gasoline type available in the national market following the decision to discontinue the distribution of regular and premium gasoline. This trend is also illustrated in Figure 4.

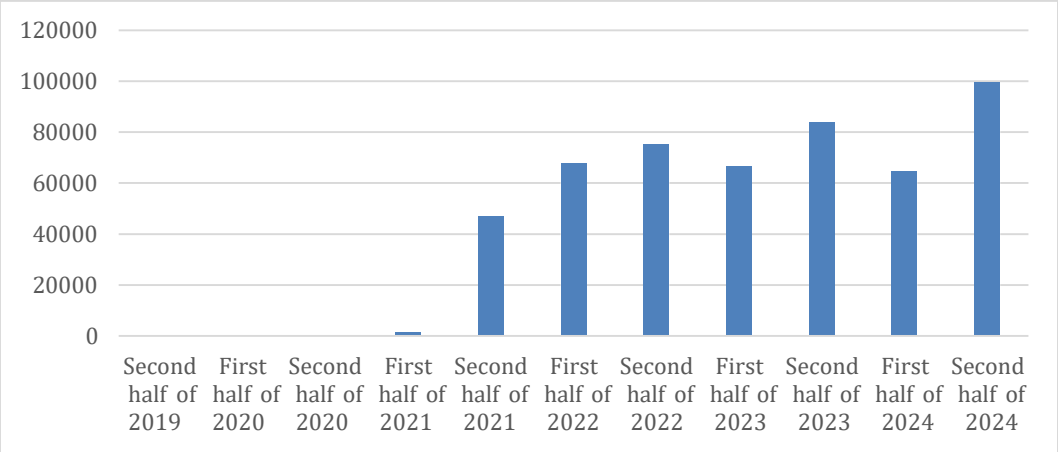


Figure 4: Development of Unleaded Gasoline Distribution

***Source**: Prepared by the two researchers based on previous data.*

Table 7: Distribution of Diesel

Time Period	**Diesel Distributed (m^3)**
Second half of 2019	84,446
First half of 2020	72,047
Second half of 2020	87,791
First half of 2021	90,417
Second half of 2021	100,745
First half of 2022	126,284
Second half of 2022	153,954
First half of 2023	124,011
Second half of 2023	162,054
First half of 2024	120,987
Second half of 2024	180,792
Total	**1,303,528**

***Source**: Prepared by the two researchers based on company documents.*

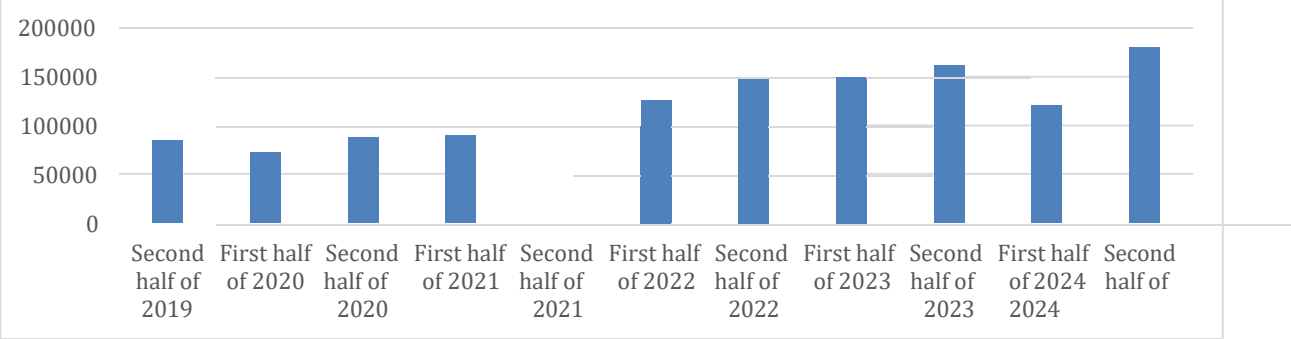
From Table 7 and Figure 5, it becomes clear that the quantities of diesel distributed among fuel stations, public institutions, private institutions specializing in construction and public works, and

gravel-crushing sites throughout the province exhibited fluctuations between increases and decreases. The following observations are noted:

– In the first half of 2020, the quantity decreased by 12,399 m³, due to the COVID-19 crisis, which directly affected investment projects and subsequently led to reduced diesel distribution. The quantity then began to rise during the second half of the same year at a steady rate.

– A significant increase in diesel distribution is observed from the second half of 2020 to the second half of 2024. The total increase amounts to 96,346 m³, equivalent to 53.29%. This considerable rise is attributed to the recovery of economic activity in general, and major investment projects in particular, which rely heavily on utility vehicles, construction machinery, public works equipment, and quarries—all of which operate exclusively on diesel.

Figure 5: Development of Diesel Distribution



***Source**: Prepared by the two researchers based on previous data.*

Table 8: Distribution of Fossil Fuel by Type

Product	**Quantity Distributed (m³)**	**Percentage (%)**
Regular gasoline	112,150	5.77
Premium gasoline	23,206	1.19
Unleaded gasoline	506,289	26.03
Diesel	1,303,528	67.01
Total	**1,945,173**	**100**

***Source**: Prepared by the two researchers based on company-provided data.*

From Table 8, the following observations can be made:

– The largest distributed quantity corresponds to diesel, representing 67.01% of the total fossil fuel distributed across the province of Tamanrasset. This dominance is due to diesel's widespread use in passenger cars, utility vehicles, buses, and particularly in major investment projects involving construction, public works, and road and bridge construction, in addition to its intensive use in operating gravel-crushing plants (quarries).

– The quantity of premium gasoline distributed during the study period is very limited, representing only 1.19% of the total fossil fuel. This is due to the relatively high price of this product compared to regular gasoline.

– The quantity of unleaded gasoline, compared to regular and premium gasoline, is relatively close in proportion. This is because a governmental decision was issued to withdraw premium and regular gasoline from the Algerian market due to their harmful effects on human health and the environment, replacing them with unleaded gasoline.

Overall, these products exhibit a decline in their distributed quantities because they are used on a limited scale, mainly for powering vehicles, particularly private passenger cars.

Table 9: Storage of Fossil Fuel

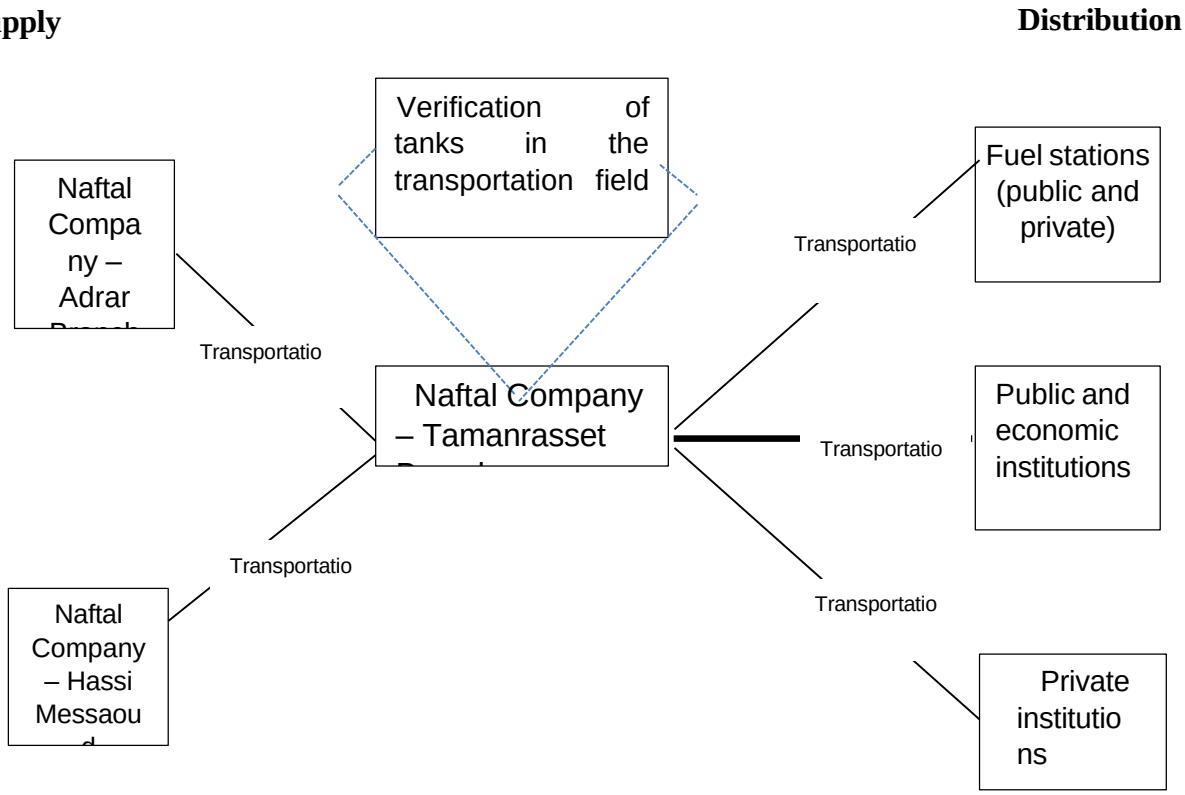
Product	**Stored Quantity (m^3)**
Gasoline	400
Diesel	600

***Source**: Data provided by the company.*

The required quantity of fossil fuel is determined weekly based on expected demand. The province of Tamanrasset is supplied with fuel twice per week while maintaining an initial stock of gasoline (400 m^3) and diesel (600 m^3), in addition to fully distributing the quantities requested. This strategy was adopted by NAFTAL to prevent fuel shortages in the province, as such shortages would lead to a crisis affecting both economic and vital sectors.

Based on the above, an illustrative diagram of the supply chain of NAFTAL – Fuel Branch of Tamanrasset was established as follows:

Figure 8: Supply Chain Model of NAFTAL – Fuel Branch of Tamanrasset



***Source**: Prepared by the two researchers.*

5. Results Analysis:

During the study period extending from July 2019 to December 2024, the following observations are noted:

Supply chain management represents a combination of science and art in managing relationships between suppliers and customers, as well as all intermediaries such as transportation and storage companies, with the objective of reducing costs and maximizing profits.

– Logistics constitutes one of the core components of the supply chain, ensuring the effective management of the flow of goods, information, and energy from suppliers to customers.

– The number of trucks supplying fossil fuel to the province of Tamanrasset reached 65,574 trucks, corresponding to a total of 1,770,498 m³. Most of these trucks belong to SNTR, the company specialized in land transport.

– The province is supplied twice per week with the required quantities of fossil fuel based on expected demand, while maintaining a reserve initial stock of 1,000 m³, consisting of 600 m³ of diesel and 400 m³ of gasoline.

– Diesel constitutes the largest share, representing 67.01% of the total fossil fuel distributed, due to its widespread use in daily activities and major investment projects.

– At the beginning of 2021, a governmental decision was issued to gradually discontinue the distribution of regular and premium gasoline because of their lead content, which is harmful to human health and the environment. These fuels were replaced with unleaded gasoline, which is consumed on a more limited scale, primarily in passenger vehicles.

– Fossil fuel is distributed to fuel stations across the province of Tamanrasset, totaling 21 stations, in addition to distribution to economic operators based on demand, especially those involved in major investment projects, construction, public works, and gravel-crushing sites.

– At times, a positive deviation and at other times a negative deviation is observed between the supplied and distributed quantities of fossil fuel. Overall, the deviation tends toward the negative side, leading to the consumption of reserve stock. This is due to occasional fluctuations or interruptions in the transportation of fossil fuel.

6. Conclusion:

Supply chain management encompasses the activities, operations, and practices required to deliver a final product that meets customer expectations and generates profits for shareholders by providing it in the appropriate time and quantity. Based on the foregoing, NAFTAL can enhance and develop its internal operations to ensure a more efficient flow of products between supply and distribution centers, thereby improving the circulation of fuel and information through:

– Improving logistical operations by enabling contracting with small economic enterprises to ensure local-level transportation, avoiding bottlenecks and disruptions, and achieving optimal flow of operations;

– Increasing stock levels, especially before national holidays and major events, to prevent fluctuations and shortages in the supply of this essential commodity.

References

Books:

– Mohamed Abdel-Alim Saber, *Logistics Management*, Dar Al-Fikr Al-Jami'i, Alexandria, Egypt, 1st edition, 2008.

Theses:

– Abderrahmane Afissa, *A Proposed Model for Designing and Managing the Supply Chain for an Institutional Network: An Applied Study on a Network of Institutions in Algeria*, Doctoral Dissertation, Faculty of Economic, Commercial, and Management Sciences, Department of Commercial Sciences, University of Hadj Lakhdar Batna, 2017/2018.

Articles:

– Adel Ziyadi, Adel Zayyat, "Land Transport Logistics and the Promotion of Algerian Agricultural Export Products," *Al-Manhal Economic Journal*, Vol. 04, No. 03, December 2021.

– Akasem Omar, Laraj Moujahid Nassima, "An Analytical Study of Indicators and Models for Measuring Supply Chain Performance and Effectiveness," *Economic and Administrative Research*, No. 18, December 2015.

– Amro Mostafa Mohamed Hussein, "The Role of Supply Chain Management in Improving the Competitive Position of Business Organizations," *Scientific Journal of Economics and Commerce*, Vol. 49, No. 01, April 2019.

– Daas Moussaab, Ayman Farid, "Strategic Choices and Their Impact on the Financial Structure – Case Study of NAFTAL – Tebessa," *Journal of Research in Financial and Accounting Sciences*, Vol. 05, No. 01, 2020.

– Fares Boubakour, "Logistics as a Strategic and Competitive Asset for Algerian SMEs

– A Field Study of a Group of SMEs in Annaba," *Journal of Financial, Accounting and Managerial Studies*, No. 07, June 2017.

– Ghrid Omar, Khalil Sanaa, "Evaluating the Performance of the Logistics Sector in Algeria According to the World Bank's Logistics Performance Index Methodology," *Journal of Financial and Banking Economics and Business Administration*, Vol. 11, No. 01, 2022.

– Hachrouf Fatima Al-Zahra and Others, "Supply (Logistics) Strategy in International Commercial Operations," *Mediterranean Dialogue*, Vol. 12, No. 13, December 2017.

– Houssam Ahmed Jaber Ahmed, "The Contributions of Supply Chains in Achieving the Requirements of the Blue Economy in Non-Governmental Organizations," *Journal of Developmental Social Service Research*, Vol. 02, No. 01, March 2022.

– Kalbaza Amal, Ben Harrat Hayat, "Transport Logistics and Its Role in Economic Development – A Study of Transport Sector Development Programs in Algeria," *Revue d'Economie et de Management*, Vol. 13, No. 02, 2014.

– Makawi Mohamed Al-Amin, "Logistics and the Challenges of International Competitiveness: The Case of Algeria," *Journal of Finance and Markets*, Vol. 06, No. 01, 2019.

– Zebchi Nawel, Yousfi Rachid, "A Comparative Study of Logistic Performance in Algeria and the United Arab Emirates," *Journal of Strategy and Development*, Vol. 08, No. 15, December 2018.

Websites:

Official NAFTAL Website, Annual Report, https://www.naftal.dz/fr/index.php/rapports-annuels, accessed on 09/11/2025 at 11:14.