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Assessing Jamaica's Logistics Hub Initiative and Its Implications for Sustainable Development

Shemar Reid, Corey Johnson

Zhejiang GongShang University

Abstract

This study looks at the Jamaica Logistics Hub Initiative (JLHI), a deliberate initiative to convert Jamaica into a major participant in global commerce and logistics. Using a mixed-methods approach, the study examines economic indicators, environmental consequences, and alignment with sustainable development objectives from 2010 to 2022, including time periods prior to and following the initiative's 2013 first appearance. The findings show considerable economic benefits, such as faster GDP growth, higher foreign direct investment, and job creation in logistics-related industries. However, the report notes several problems, notably in terms of environmental sustainability and the need to improve export competitiveness. The JLHI's connection with the SDGs is reviewed, highlighting positive contributions to economic growth and global alliances, while recognizing opportunities for improvement in the management of the environment. The study concludes that the JLHI's long-term performance is dependent on combining economic goals with environmental sustainability and social equality. Recommendations include improving logistical performance, creating value-added services, introducing green technology, and prioritizing workforce development. This thorough research provides useful insights for policymakers and stakeholders, adding to the current discussion on sustainable logistics hub development in small island developing states.

Index words: Jamaica Logistics Hub Initiative, Sustainable Development, Economic Growth, Foreign Direct Investment, Environmental Impact, Global Trade

I. Introduction

A strategic effort to establish a centralized location that makes it easier to move, store, and distribute goods and services effectively is known as a logistics hub initiative. A transportation and logistics hub that facilitates trade, commerce, and economic expansion by connecting shipping, air, and land modes of transportation is the objective. Jamaica aims to upgrade its infrastructure (such as ports, airports, and highways), draw in multinational shipping and logistics corporations, and increase its ability to manage massive amounts of trade by taking use of its advantageous location in the Caribbean (Dookeran, 2013). The port is an essential component of a logistics hub, and as such, its transformation from simplest facility for handling cargo to a logistics hub, typically beginning at the port. In addition to attempting to be in line with sustainable development goals, this program is anticipated to promote economic growth by generating employment, expanding commerce, and drawing investment. Government of Jamaica (GOJ) has launched a strategic plan to transform Jamaica's economy into one centered on logistics and establish Jamaica, Jamaica is a hub for global logistics. Brown and Jahnoy Leith (2022)

According to (Nathan, 2017) Jamaica needs to quickly enhance every link in its logistics network if it wants to become a major global logistics hub. Although the port and warehousing improvements would probably help Jamaica's score in the Logistics Performance Index (LPI) report, associated issues still need to be improved. For example, having contemporary, effective, and affordable customs is necessary for being globally competitive (Dookeran, 2013). A popular metric for evaluating a nation's logistics performance is the Logistics Performance Index (LPI). It considers a number of logistics-related factors, such as infrastructure, the effectiveness of customs, the simplicity of cargo planning, the caliber of logistics services, and timeliness (World Bank, 2020). Organizations can rely on logistics to help them achieve more effective management systems. Logistics growth benefits the technology industry as well Ngangwa Dorian Ntule, Emmanuel, and Vera (2024). Logistics organizations are adopting digital strategies in line with global

business operations. Into their supplier chain. They constantly enhance their processes and improve services by tracking orders and Vehicles to increase visibility Abdullah Al Jabri, Slimi, Al Yaqoopi, and Mehmet (2021).

Global trade logistics have grown increasingly important in the development strategies of small economies, particularly in strategically positioned countries such as Jamaica. The JLHI calls for considerable expenditures in port infrastructure, airport facilities, road networks, and special economic zones (SEZs), which have the ability to boost economic growth, create jobs, and attract foreign direct investment (FDI) (Brown & Leith, 2022). The Global Logistics Hub embodies the logistics-centered economy. The public and commercial sectors construct interconnected networks of hard and soft infrastructure through significant infrastructure projects (Erol & Aykut Süreyya Duyguvar, 2016). The logistics economy includes more than just ports and airports. This pertains to our business climate, trade facilitation, infrastructure, investment facilitation, and business structures in various industries like as manufacturing, agriculture, tourism, BPO, and entertainment Hendricks (2024). Jamaica is a top ten tourism destination globally, earning approximately US$700 million from the business. Tourism is the fastest expanding area of investment in the service industry. The recent legislation aimed to increase Jamaica's competitiveness in commerce Hendricks (2024).

The aforementioned centers' success hasn't, however, been without social and environmental difficulties. In an effort to lessen the environmental impact of its logistics operations, Singapore has made significant investments in green technologies and environmental management systems. Comparably, Panama has concentrated on striking a balance between environmental preservation initiatives and the financial advantages of the Panama Canal Rześny-Cieplińska and Szmelter-Jarosz (2020). The significance of including sustainability into the development of logistics hubs is demonstrated by these international examples.

The JLHI's consequences for sustainable development, like those of other major infrastructure projects, must be thoroughly examined. Sustainable development, according to the UN, aims to strike a balance between social justice, environmental preservation, and economic progress. The JLHI is examined in this paper's context, and its possible advantages and disadvantages for Jamaica's sustainable development are evaluated (TY, Phnom , Cambodia, Penh, & Bora, 2023). Scientific research extensively examines the relationship between energy usage, CO2 emissions, and economic growth. Studies consistently show that fast economic expansion leads to higher energy consumption and CO2 emissions. Logistics may play a helpful role in promoting sustainable development. The decarbonization movement in freight transport, which involves using environmentally friendly vehicles, consolidating transportation, and reducing energy usage, is becoming increasingly popular (Melkonyan & Krumme, 2019).

To remain relevant, Caribbean ports must reinvent themselves. The conventional functions of receiving, storing, and transporting freight no longer provide a competitive advantage (Dookeran, 2023). Ports provide more than just facilitating the passage of products between modes of transportation. Historically, they have served as a connection between coastal and inland transportation, as well as the intersection of sea, road, rail, and air modes (Khashaypoor, Nunes da Silva, & Mamdoohi, 2021). Ports play a crucial role in managing and coordinating material and information movement, as transportation is a key component of the supply chain (Pinnock & Ajagunna, 2014).

Jamaica's Logistics Hub Initiative (JLHI) is a strategic change aiming at utilizing the island's geographic advantage to become a major participant in global trade. Jamaica hopes to boost its logistical capacity and establish itself as a vital logistics center in the Caribbean by modernizing crucial infrastructure such as ports, airports, and road networks (Dookeran, 2023). However, the initiative's success is dependent on achieving a balance between economic growth and environmental development Jamaica (2009). Lessons from global logistics hubs such as Singapore and Panama highlight the significance of implementing green technology and sustainability strategies to reduce environmental impact and maintain long-term viability (Khashaypoor, Nunes da Silva, & Mamdoohi, 2021). As Jamaica begins on this massive undertaking, it must prioritize social fairness, environmental preservation, and the development of a competitive yet sustainable logistics ecosystem. The experiences of established global logistics hubs like Singapore and Panama underscore the importance of integrating green technologies and sustainability strategies to mitigate environmental impacts and ensure long-term viability “What Is the Jamaica Logistics Hub Initiative?”. This paper examines the JLHI within the context of sustainable development, evaluating its potential benefits and challenges for Jamaica's economic, social, and environmental landscape

II Literature Review

A logistics hub initiative is a systematic effort by a country or region to establish a centralized location that enables the effective transportation, warehousing, and distribution of goods and services. Large-scale organizations known as logistics hubs are where several logistics service providers work together to share resources and create value-added services (Vieira & Luna, 2016). Jamaica, with its advantageous location in the Caribbean, has launched the Logistics Hub Initiative in an effort to establish itself as a vital player in international trade "What Is the Jamaica Logistics Hub Initiative?" (2015). However, as with any large-scale infrastructure project, the implications for sustainable development must be considered. The logistics industry, which is frequently associated with large environmental impacts, is critical in this context. According to studies, while logistics hubs drive economic growth, they can strain local ecosystems and add to greenhouse gas emissions (World Bank, 2021).

Several countries have built successful logistics centers that can serve as inspiration for Jamaica's ambition. Singapore is a notable illustration, with world-class port and airport infrastructure that sustains its position as a leading global logistics hub. Overseas MNCs purchase information commodities from Original Equipment Manufacturers (OEM) in Taiwan (Lee, 2007). Strategic infrastructure expenditures, trade-friendly government policies, and strong public-private partnerships have all contributed to the success of these hubs. The success of these hubs demonstrates the value of coordinated planning, efficient transportation systems, and international collaboration. The World Bank's Logistics Performance Index (LPI) offers a benchmark to assess logistics performance of countries worldwide. For example, Kenya scores 2.93 on the LPI (2022 data), indicating room for improvement in areas like infrastructure and efficiency World Bank (2020). Cameroon's current LPI score sits at 2.1 (2022 data), highlighting a gap between desired performance and reality (World Bank, 2024). Therefore, it is against the above problem that this study sought to investigate the effect of digitalization on logistics performance among logistics related companies in Cameroon (Ngangwa Dorian Ntule, Emmanuel, & Vera, 2024).

The Jamaica Global Logistics Hub Initiative aims to reposition Jamaica as a hub for global manufacturing and service delivery, attracting businesses across the supply chain (Hendricks, 2024) The initiative comprises expenditures in port capacity expansion, airport facility upgrades, and road and rail network developments. The government has also attempted to recruit foreign shipping and logistics companies with attractive policies and incentives (Abdullah Al Jabri, Slimi, Al Yaqoopi, & Mehmet, 2021). The Jamaica Logistics Hub Initiative is envisioned as a multi-phase project that will transform the island into a central node in global logistics. Key components of the initiative include the expansion of the Kingston Container Terminal, the development of the Caymanas Special Economic Zone, and the upgrade of Norman Manley International Airport (MINISTRY OF INDUSTRY, INVESTMENT AND COMMERCE, 2014). The initiative is also closely linked to the development of Jamaica's road network, with improvements to highways and transportation infrastructure critical to its success Macharis and Al (2014). The government has positioned the JLHI as a strategic response to global trade shifts, particularly the expansion of the Panama Canal and the increasing importance of global supply chains (DAVID, 2014). By enhancing its logistics capabilities, Jamaica aims to attract transshipment traffic, boost exports, and create a competitive advantage in the Caribbean Vieira and Luna (2016).

The 2030 Agenda for Sustainable Development, endorsed by every member nation of the UN in the year 2015, outlines an objective for sustainable development and peace for humanity and the planet, both now and in the future (Abdullah Al Jabri, Slimi, Al Yaqoopi, & Mehmet, 2021). Sustainable development, as defined by the United Nations, strives to combine economic growth, environmental conservation, and social fairness. According to Abdullah Al Jabri, Slimi, Al Yaqoopi, and Mehmet (2021) we can determine that the expanding sector has produced job possibilities for transporters, warehouse owners, and freight personnel. Globalization has led to improved logistics for international trade. Investing in logistics has given nations a competitive advantage by facilitating distribution operations and marketing tactics through efficient and timely delivery STATIN. (2018). Overcoming poverty and hardship requires a multifaceted approach that includes improving health and education, reducing inequality, stimulating economic growth, addressing climate change, and conserving natural resources.

Challenges and Opportunities

Jamaica’s Logistics Hub Initiative presents both challenges and opportunities. The key challenges include environmental concerns related to increased traffic and emissions, the need for significant investment in infrastructure, and potential displacement of local communities. The Caribbean remains isolated from the global marine and logistics supply chain. Integration of synergies is crucial for increasing efficiency and production in the region. Jamaica's legislative systems need to align with global standards. To comply with WTO rules, free zones must be phased out by 2015 (Cox, C Embree, & Institute For Research On Public Policy, 1990).

The JLHI has the potential to drive substantial economic growth by creating jobs, attracting investment, and increasing trade volumes. The development of SEZs, in particular, could provide a platform for manufacturing, logistics services, and value-added activities that would boost Jamaica’s competitiveness in the global economy Jamaica’s Logistics Hub Initiative presents both challenges and opportunities (Mia Mahmudur Rahim, Idowu, & Springerlink (Online Service, 2015). The key challenges include environmental concerns related to increased traffic and emissions, the need for significant investment in infrastructure, and potential displacement of local communities. The Caribbean remains isolated from the global marine and logistics supply chain. The environmental and social challenges of the JLHI cannot be ignored (Khashaypoor, Nunes da Silva, & Mamdoohi, 2021). The expansion of port and airport facilities, increased shipping traffic, and the development of SEZs are likely to have significant environmental impacts, including carbon emissions, pollution, and habitat loss, The Planning Institute of Jamaica (2017). Moreover, there is a risk that the economic benefits of the initiative will be concentrated in certain sectors or regions, exacerbating social inequality. To address these challenges, the Jamaican government must implement robust environmental regulations, promote the use of green technologies, and ensure that the benefits of the JLHI are distributed equitably across the population. This will require a multi-stakeholder approach, involving government, private sector, and civil society actors. To address these challenges, Jamaica must enact robust environmental legislation, promote green technology, and ensure fair distribution of JLHI benefits among the community. This necessitates a multi-stakeholder strategy that includes government, commercial sector, and civil society actors. Rześny-Cieplińska and Szmelter-Jarosz, (2020).

In order to compare Jamaica's present and future endeavors with the environmental management measures used by top logistics nations, this assessment synthesizes the body of literature on logistics hubs and sustainable development.

III Mehodology

In order to evaluate the effects of Jamaica's Logistics Hub Initiative (LHI) on the nation's economic development and its implications for sustainable growth, this study uses a quantitative research design based on secondary data analysis. Using an extended methodology, the study looks at data from 2010 to 2022 to identify patterns both before and after the initiative's 2013 start.

3.1 Data Sources

Official national statistics on trade, labor market conditions, and economic indicators are provided by the Statistical Institute of Jamaica (STATIN). The Planning Institute of Jamaica (PIOJ) provides in-depth analyses of the economic and social development of Jamaica. Financial and economic data is provided by the Bank of Jamaica. International financial indicators that are comparable are provided by World Bank Open Data. Provides comprehensive data on international trade through the United Nations Com Trade Database. The Jamaica Customs Agency offers particular trade information about port operations. Environmental statistics and impact evaluations are provided by the National Environment and Planning Agency (NEPA).

3.2 Data Collection Method

Document Analysis: Existing JLHI-related papers and policy documents are analyzed, including the Vision 2030 Jamaica National Development Plan, environmental impact assessments, and sustainability reports. This offers a foundation for understanding the initiative's declared aims and expected influence on sustainable development. The data collection process focused on gathering information from 2010 to 2022, allowing for a three-year pre-LHI baseline and a nine-year post-implementation analysis.

Statistical Data: Economic and environmental data are gathered from government institutions such as the Statistical Institute of Jamaica (STATIN) and the Planning Institute of Jamaica. This contains information

about trade volumes, employment rates, greenhouse gas emissions, and other important sustainability metrics.

3.3 Measures and Variables

Economic Growth: Indicated by the GDP growth rate per year (%)
Trade balance and total trade volume (USD) are used to gauge trade performance.
Annual inflows of foreign direct investment (FDI) are used to measure FDI.
Employment: Quantified by sector-specific job creation and the employment rate (%) Transportation and logistics infrastructure capital expenditures (in US dollars) are used to measure infrastructure development.
Environmental Impact: Determined by indices of coastal water quality and air quality.

3.4 Methods of Data Analysis

Trend analysis: To spot trends over time in environmental and economic data.
Using a comparative analysis, evaluate Jamaica's performance in relation to regional and international standards.
Correlation Analysis: To investigate connections between different economic indicators and the deployment of LHI. Using descriptive statistics, the main conclusions from the data are compiled and presented. Microsoft Excel was used for preliminary data processing and visualization before data analysis was carried out.

3.5 Ethical considerations

Ethics maintained the primary priority even though this study uses secondary data. All of the data that were used came from sources that were open to the public or were acquired legally and with institutional approval. The research respects data integrity norms and refrains from manipulating or misrepresenting numbers.

3.6 Limitations of the methodology

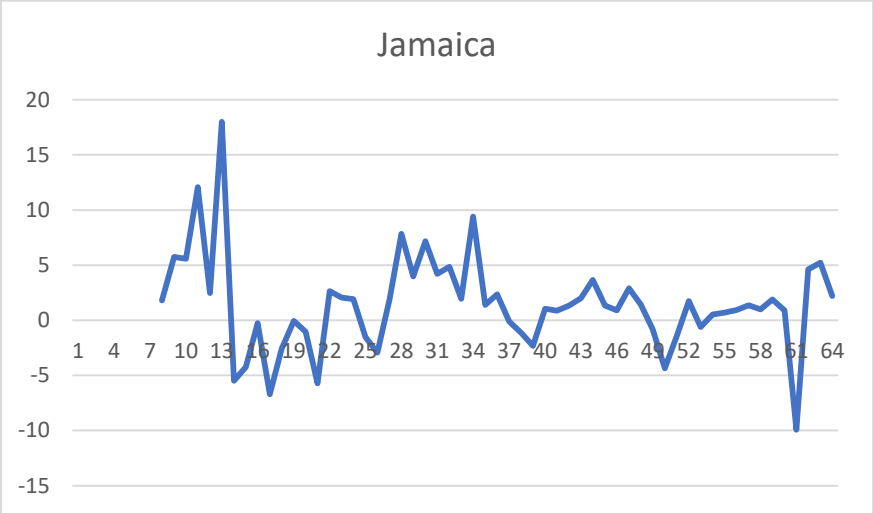
The dependence on secondary data has some limitations: The lack of primary data may limit the depth of insights, particularly in terms of stakeholder perspectives. Some datasets may contain gaps or inconsistencies in reporting methods during the study period. Other factors may alter economic and environmental indices, making it difficult to attribute changes purely to the LHI. These limitations are acknowledged and considered when interpreting the results.

IV Results and Discussion

4.1 Economic Impact of the Logistics Hub Initiative.

Jamaica's GDP growth rate has shifted significantly with the establishment of the Logistics Hub Initiative in 2013.

Figure 1: Jamaica's Annual GDP Growth Rate, 2010-2022



Source: world bank

The line chart named "Jamaica JAM GDP growth (annual %)" illustrates the fluctuations in Jamaica's GDP growth rate throughout time. The graphic shows periods of both high economic expansion and considerable recession. Significant increases in GDP growth, as well as dramatic decreases, indicate instability in the country's economic performance. Extreme highs, such as those around year 5, when growth reached about 15%, are followed by precipitous dips into negative territory, signifying an economic recession. These oscillations highlight the difficulties Jamaica has experienced in sustaining stable and regular economic development over time.

4.2 Trade Volumes

The LHI sought to strengthen Jamaica's status as a global logistics hub, which should be reflected in trade volumes.

Table 1 : Total Exports By S.I.T.C. Sections Jmd - '000 (Annual), 2010-2022

Frequency: Annual
Source: Statistical Institute of Jamaica
Publisher: Statistical Institute of Jamaica
Units: J$'000

S.I.T.C Sections	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Exports	116,449,101	139,369,578	153,550,293	158,784,828	160,920,288	146,692,070	148,900,348.2	174,300,181.2	252,920,517.8	220,119,886	178,162,352	223,578,842.6	291,223,492.9
0|Food	18,127,528	19,938,365	24,125,153	24,319,537	26,605,759	26,923,647	28,647,921	29,213,867	28,281,851	29,396,006	34,016,012	40,619,520	41,980,231
1|Beverages and Tobacco	9,063,079	9,721,218	9,215,425	8,359,759	8,966,088	7,942,998	11,231,398	14,264,198	14,506,725	17,920,311	18,246,625	22,164,926	24,152,436
2|Crude Materials (excl. Fuel)	48,283,415	65,983,573	59,128,457	69,242,272	77,916,995	77,466,329	69,707,991	86,715,231	160,939,616	108,940,881	75,813,011	72,381,907	49,906,521
3|Mineral Fuels etcetera	25,468,330	31,965,148	34,455,272	35,409,713	33,449,280	22,724,278	21,768,807	29,877,415	36,017,318	50,446,158	38,602,423	76,724,107	157,797,938
4|Animal & Vegetable Oils & Fats	255,269	24,182	12,790	39,309	44,356	37,524	35,668	41,566	47,393	49,811	49,959	307,462	233,579
5|Chemicals	7,259,702	4,019,417	20,533,364	10,989,809	3,132,573	3,002,426	3,630,640	3,691,492	5,574,134	4,877,180	5,028,176	5,323,070	7,823,668
6|Manufactured Goods	2,922,003	838,562	1,568,437	3,392,685	5,855,906	4,283,796	4,960,315	2,929,596	2,287,100	1,732,701	1,637,250	1,630,773	2,596,289
7|Machinery and Transport Equipment	1,954,868	4,328,735	2,025,198	3,916,252	2,410,782	2,487,191	4,951,369	4,245,431	2,628,071	4,012,052	2,197,722	2,314,013	3,683,340
8|Misc. Manufactured Articles	2,483,495	1,639,223	1,633,893	2,434,123	1,815,833	1,416,541	3,003,945	2,775,729	2,072,988	2,113,765	2,021,988	1,290,817	2,295,132
9|Other	631,412	911,155	852,305	681,370	722,717	407,340	962,295	545,657	565,321	631,020	549,185	822,247	754,360
Total (incl. Single Entity Free Zone)	116,449,101	139,369,578	153,550,293	158,784,828	160,920,288	146,692,070	148,900,348.2	174,300,181.2	252,920,517.8	220,119,886	173,503,491		
Of which Jamaica Free Zone*	5,037,784	1,636,886	31,419,918	9,757,254	1,473,118	1,065,729	949,551	431,175	480,986	13,028,788	4,020,367		

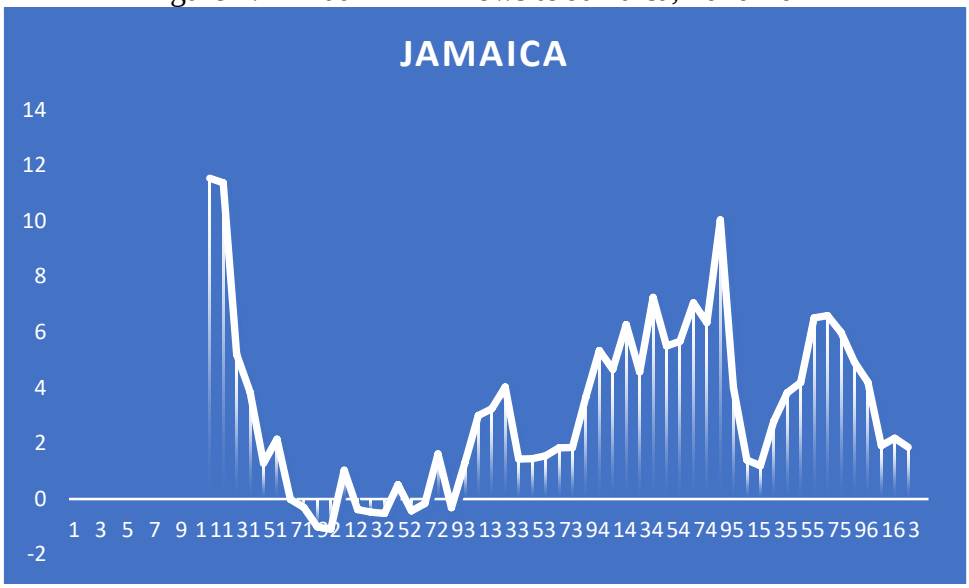
Source: Stastical Institute of Jamaica

The data in table1 shows the varying export values in several categories, such as food, drinks, and tobacco, crude materials (excluding fuel), and manufactured products, throughout the ten-year period 2010-2022.
Jamaica's Logistics Hub Initiative (JLHI) aims to develop the country into a prominent transshipment point, which might have a substantial long-term impact on export numbers. The project aims to boost the efficiency of commodities movement by strengthening port and transportation infrastructure and trade facilitation. This might lead to an increase in exports, particularly in high-value industries such as "Machinery and Transportation Equipment" and "Manufactured Goods."
Furthermore, the growth in exports from the Jamaica Free Zone indicates the effectiveness of these SEZs in attracting international investment and increasing Jamaica's export capability. The JLHI's commitment to logistics infrastructure development has established Jamaica as a key player in global supply chains, enabling long-term export growth and supporting the country's overall economic development objectives.

4.2 Foreign Direct Investment

Foreign Direct Investment (FDI) is a key indicator of the LHI's ability to attract international enterprise (Jamaica, 2019).

Figure 2: Annual FDI Inflows to Jamaica, 2010-2022



Jamaica's foreign direct investment (FDI) net inflows as a percentage of GDP were approximately 1.86% in 2022.
Source: World bank

Foreign Direct Investment (FDI) Net Inflows in Jamaica

FDI net inflows are the new investment inflows from overseas investors less disinvestment in the reporting economy. It is a key indication of how much foreign capital enters a country. In 2022[6], Jamaica's FDI net inflows were 1.86% of GDP. This indicates that foreign investors made direct investments worth about 1.86% of Jamaica's GDP. Trends in Jamaican foreign direct investment the graph illustrates variations throughout time (Jamaica, 2019). Early in the run, there is a high peak above 12%, followed by a precipitous drop to negative values. However, it progressively climbs after that, indicating an overall rising tendency with some volatility. These trends indicate economic patterns and investment behavior, which may have a substantial influence on Jamaica's economic growth and development Jamaica (2009).

Jamaica has consistently attracted foreign direct investment (FDI) throughout the years. In 2022, FDI net inflows were about 1.86% of GDP1. Overseas direct investment (FDI) reflects fresh investment inflows from overseas investors minus disinvestment in the reporting economy. It is a key indication of economic health and growth. The Jamaica Logistics Hub Initiative aspires to establish the country as the fourth global logistics hub, alongside Singapore, Dubai, and Rotterdam. The effort aims to transform Jamaica's economy, create jobs, integrate Jamaica into the global value chain, and attract major investment. Capitalize on rising regional trade flows, particularly with the Panama Canal's expansion in 2015Dempere, Qamar, Allam, and Malik (2023). Connecting the dots. The FDI net inflows are inextricably linked to the performance of the Logistics Hub Initiative. As Jamaica becomes a logistical hub, it draws more global and domestic firms, resulting in greater FDI, Investments in infrastructure, transportation, and trade facilitation enhance Jamaica's appeal as a logistics center Hart Research Associates (2013). However, the volatility in FDI inflows suggests that other factors, such as global economic conditions and investor confidence, have a considerable impact on investment decisions (Pasindu Wannisinghe et al., 2023).

4.5 Employment and Labor Market Effects

The LHI was expected to create major job possibilities, notably in logistics and allied industries.

The employment data in the transportation, storage, and communications sectors provide as a baseline for assessing the possible impact of the Jamaica Logistics Hub Initiative Hart Research Associates (2013). As this effort aspires to convert Jamaica into a major global logistics center, we may expect considerable job development in these areas, notably in air and sea transport, transportation services, and allied business services Hart Research Associates (2013). The existing figures provide a starting point for assessing the initiative's performance in job creation and economic growth as it moves forward. Jamaica aspires to establish itself as a global logistics center, leveraging its geographical location to service major trade

corridors Planning, Research and Monitoring Unit Ministry of Labour and Social Security (2016). The Logistics Hub Initiative (LHI) encompasses almost 3,900 hectares of development on the island, with an investment surpassing US$28 billion. At full capacity, it is estimated to provide around 87,400 direct jobs Nathan (2017). Potential Employment Opportunities

The LHI will provide a suitable environment for several occupational roles, including Maintenance, Assembly, and Machine Repair Opportunities for skilled workers. The Industry State Minister spoke on the theme of 'Jamaica Logistics Hub; Opportunities and Challenges' during a public discussion hosted by Montego Bay Community College on November 14 at the institution's Alice Eldemire Drive site. Mrs. Ffolkes-Abrahams informed the crowded gathering of pupils that they will be relied upon to seize economic chances once the hub becomes a reality

Frequency: Annual
Source: Statistical Institute of Jamaica
Publisher: employment
Units: Employees
Release date: 30/05/2014

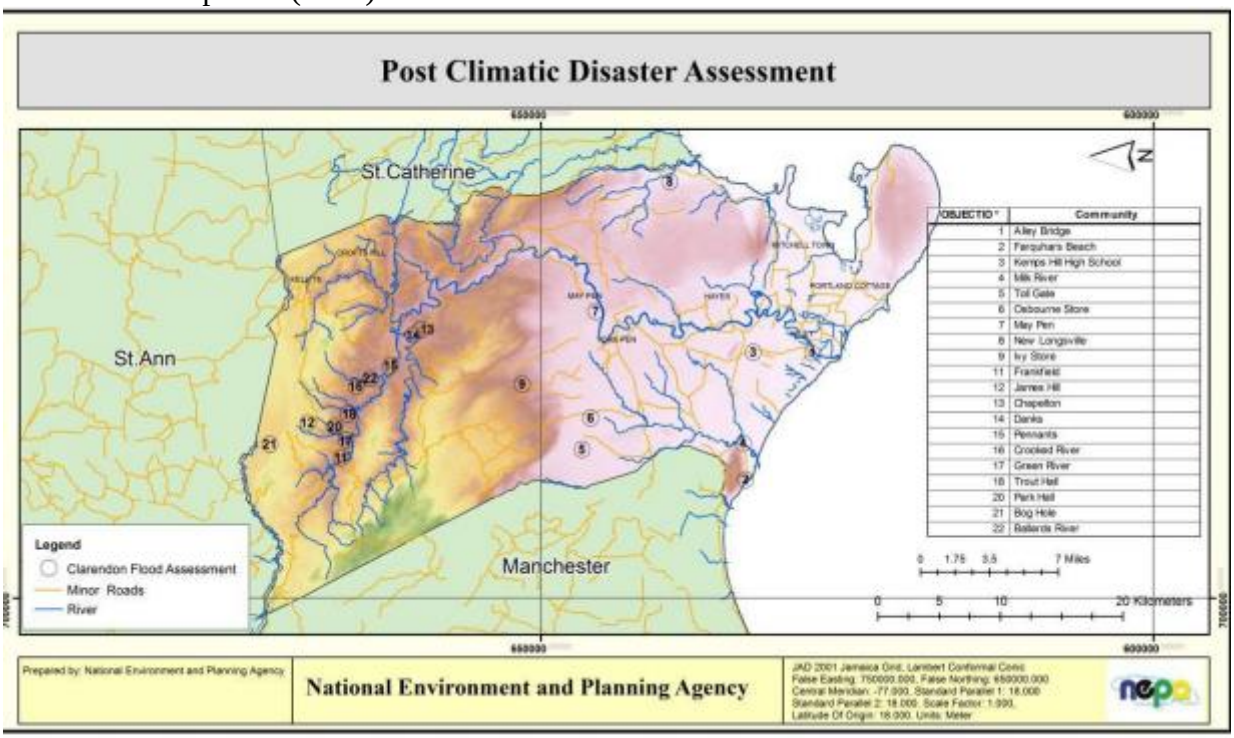
ANNUAL AVERAGES OF ALL EMPLOYEES IN LARGE ESTABLISHMENTS	2010	2011	2012	2013
ALL SECTORS	172,496	171,216	170,590	173,024
ALL SECTORS (EXCLUDING SUGAR INDUSTRY)	167,313	166,033	165,489	167,729
TOTAL MINING	2,344	2,342	2,185	2,179
Bauxite & Alumina	1,846	1,852	1,693	1,686
Other Mining	498	491	492	493
TOTAL MANUFACTURING	40,253	39,909	40,267	40,578
TOTAL FOOD, BEVERAGES & TOBACCO	20,079	20,092	20,259	20,568
Sugar	5,183	5,183	5,101	5,295
Other Food Manufacture	11,503	11,429	11,714	11,848
Beverages	3,369	3,455	3,418	3,398
Tobacco Manufacture	24	25	26	27
TOTAL TEXTILES, WEARING APPAREL, LEATHER AND FOOTWEAR	5,634	5,407	5,497	5,447
Textiles	170	172	163	176
Wearing Apparel	5,384	5,168	5,268	5,206
Leather & Leather Products And Footwear	79	68	65	65
TOTAL WOOD & WOOD PRODUCTS	2,163	2,155	2,230	2,236
Wood & Cork Products (Other than Furniture)	610	581	574	545
Furniture	1,553	1,574	1,656	1,691
TOTAL PAPER AND PRINTING	3,833	3,914	3,940	3,966
Paper & Paper Products	1,494	1,605	1,611	1,666
Printing & Publishing	2,338	2,309	2,329	2,300
TOTAL CHEMICALS, CHEMICAL, RUBBER AND PLASTIC PRODUCTS	4,679	4,654	4,694	4,704
Industrial Chemicals	918	956	919	894
Other Chemical Products	2,211	2,139	2,177	2,145
Petroleum And Asphalt Products	373	380	389	389
Rubber Products	223	223	223	223
Plastic Products	954	956	987	1,053
TOTAL NON-METALIC MINERAL PRODUCTS	1,367	1,293	1,187	1,145
Earthenware,Glass And Glass Products	24	24	24	24
Other Non-Metalic Mineral Products & Cement	1,343	1,269	1,163	1,121
OTHER MANUFACTURING (EXCLUDING METAL PRODUCTS, MACHINERY AND EQUIPMENT)	268	276	266	277
BASIC METAL AND FABRICATED METAL PRODUCTS, MACHINERY AND EQUIPMENT	2,233	2,119	2,196	2,236
TOTAL ELECTRICITY, GAS AND WATER	4,462	4,265	4,368	4,448

CONSTRUCTION	6,729	6,712	6,755	6,802
TOTAL TRADE, HOTELS AND RESTAURANTS	54,330	54,133	53,037	53,918
Wholesale Trade	9,556	9,443	9,401	9,450
Retail Trade	22,880	23,399	22,564	22,730
Restaurants	5,458	5,252	5,181	5,304
Hotels, Rooming Houses And Lodging Places	16,437	16,039	15,891	16,433
TOTAL TRANSPORT, STORAGE & C0MMUNICATIONS	16,572	16,239	16,136	16,120
TOTAL TRANSPORT AND STORAGE	13,479	13,086	12,956	13,000
Air Transport	5,066	5,112	5,184	5,153
Water Transport	2,721	2,698	2,652	2,712
Air Transport	3,739	3,511	3,450	3,500
Services Incidental to Transport	1,954	1,765	1,671	1,636
COMMUNICATIONS	3,093	3,153	3,180	3,120
TOTAL FINANCING, INSURANCE, REAL ESTATE AND BUSINESS SERVICES	33,354	33,326	33,557	33,860
Financial Institutions	10,136	10,144	10,247	10,314
Insurance	4,363	4,441	4,554	4,539
Real Estate and Business Services	18,855	18,741	18,757	19,007

This table contextualizes employment statistics within Jamaica's strategic economic strategies without reproducing copyrighted information. It emphasizes the importance of the sectors highlighted to the logistics hub project and indicates how the data may be utilized to monitor the initiative's impact over time.

4.6 Environmental Implications.

While the LHI has economic benefits, its environmental impact is an important concern for sustainable development. The Jamaican government recognizes the need of environmental protection in implementing the LHI (Rashidi & Cullinane, 2019). While infrastructure expansion will undoubtedly have an impact on the environment, the government is committed to encouraging sustainable practices. Environmental Impact Assessments (EIAs) play an important role in directing decisions that limit risks to natural ecosystems. Proactive and corrective mitigating actions will be implemented as needed Organization for Economic Co-Operation and Development (2011).



The Post Climatic Disaster Assessment map focuses on specific places in Clarendon, St. Catherine, and Manchester, Jamaica, highlighting flood-prone zones and other environmental threats. The map shows essential elements such as minor roads, rivers, and flood assessment zones, showing places prone to natural catastrophes Camarinhas and Ivica Trumbic (2022).

This map is especially useful for performing Environmental Impact Assessments (EIAs) as part of the Jamaica Logistics Hub Initiative (LHI). The LHI seeks to construct critical infrastructure projects, some of which are located in areas prone to floods and other environmental dangers, as shown on the map such as the Dry Dock at Jackson Bay or the Vernamfield Air Cargo and Passenger Facility, both of which are located in or near these susceptible locations.

Rivers and streams, as seen, can pose significant dangers during infrastructure building, necessitating particular drainage and flood protection methods.

4.7 Comparison of Regional and Global Benchmarks

To measure the efficiency of Jamaica's LHI, the researchers compare its performance to that of other countries undertaking comparable programs. The CAB model assesses Jamaica's competitiveness in the area using quantitative parameters. Understanding Jamaica's competitive position requires a qualitative study of other countries' investments in transportation and logistics. Combining Jamaica's present competitive evaluation from the CAB model with a qualitative understanding of rivals' future positioning can give insight into the country's potential competitiveness.

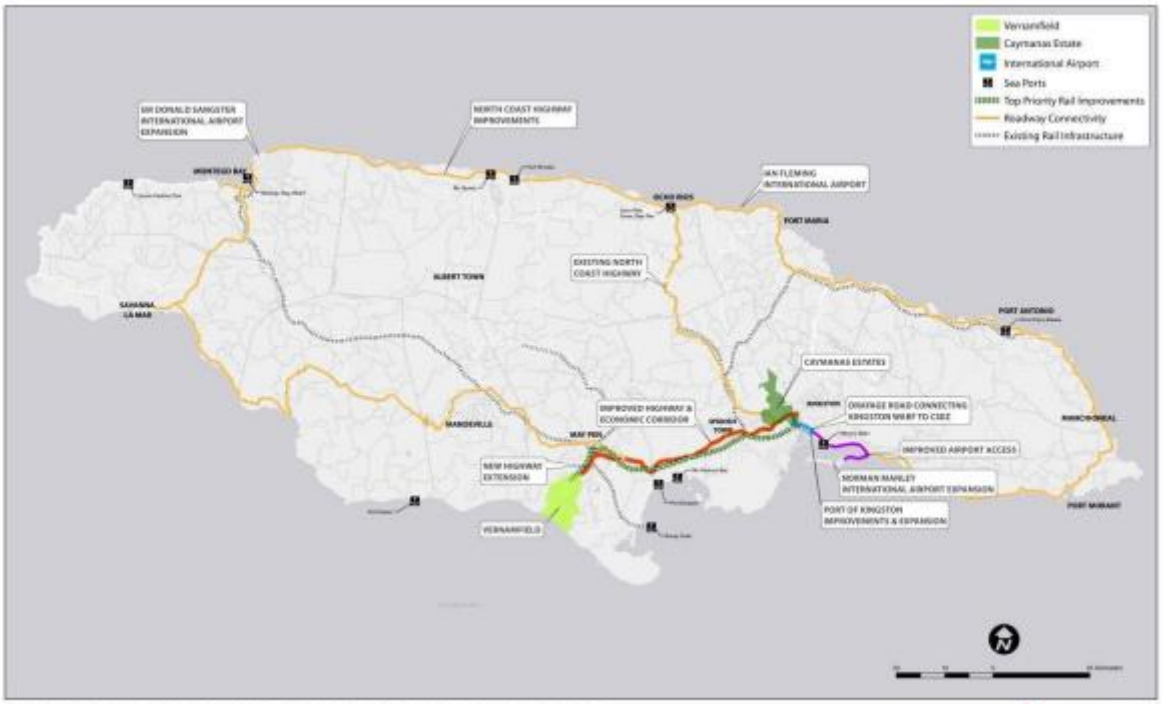
This section compares the Jamaica Logistics Hub to similar hubs in Panama, Singapore, Dubai, and Rotterdam to assess its appeal over competing hubs or planned developments.

	Holland	Dubai	Singapore	Jamaica	Miami
Air Cargo mt (2010)	1,538,135	2,270,498	1,841,004	15,617	1,835,793
Passengers (2010)	45,211,749	47,180,678	42,038,777	5,010,456	35,698,025
Containers (million)	11.1	11.6	28.4	1.7	0.8
Marine Cargo (million mt)	387	51	472	30	7.4

Case studies from Singapore and the United Arab Emirates (Dubai) show that Logistics Hubs may drive economic growth, but success requires certain circumstances. Some of these prerequisites include a strategic location, the construction of critical infrastructure, and the establishment of free zones and business parks, all of which are now being stressed by the Government of Jamaica (GOJ). This has a negative impact on Jamaican enterprises' competitiveness and may reduce the benefits of the logistics hub. This has a direct influence on key elements of a logistics hub's operations.

In September 2012, the GOJ established the Logistics Hub Task Force to design a comprehensive policy implementation framework for the logistics hub. Cabinet approved the Global Logistics Task Force to formulate required policies. Jamaica's economy relies heavily on foreign direct investment (FDI), remittances, and exports. The Bank of Jamaica reported that Jamaica received USD$551 million in FDIs in 2014, a 33% increase from 2012. Despite recent gains, Jamaica falls behind. Several other competitive countries in the area, notably the Dominican Republic and Trinidad & Tobago, Bahamas and Costa Rica Nathan (2017).

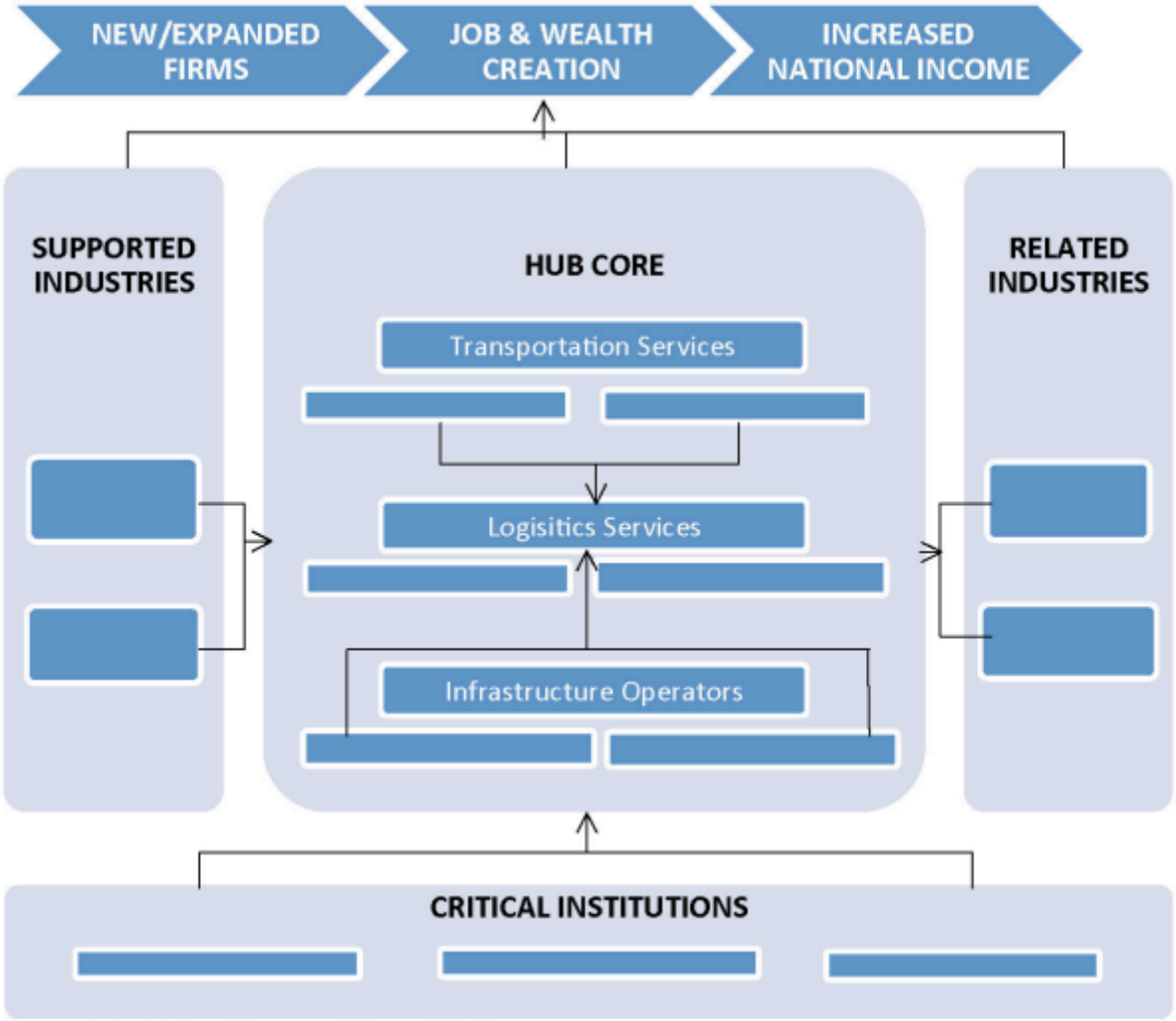
Jamaica's geographical location establishes it as a major participant in global logistics. To contribute to sustainable development, the Jamaica Logistics Hub Initiative must combine economic growth, environmental sustainability, and social fairness Hammad, Elgazzar, and Sternad (2021). The country's map and strategic positioning, particularly its ports and SEZs, are central to the initiative's success. However, careful planning and sustainable practices will be critical in mitigating potential negative environmental impacts and ensuring that the benefits of the JLHI are widely shared across the country.



JAMAICA LOGISTICS HUB FACILITIES CONNECTIVITY MAP

BergerABAM

Logistics hubs may boost national GDP and generate wealth in two ways. Efficient logistics may boost competitiveness and growth by facilitating access to global markets for local companies and consumers (World Bank 2010). According to World Bank studies between 2007 and 2010, nations with the best logistics performance see a 1% increase in GDP and 2% in trade compared to those with the same per capita income. Improved logistics performance is linked to increased commerce, export diversification, attracting foreign direct investment, and economic growth (Dookeran, 2013). Logistics hubs promote economic growth and wealth generation through clustering (DAVID, 2014). This piece explains the key components of a logistics cluster and how they contribute to higher national GDP. A logistics cluster relies on a hub core that includes logistics and transportation companies, as well as infrastructure operators like ports and airports. The success of the cluster relies on the efficient and successful functioning of enterprises and organizations in the hub core (Alamoush, Ballini, & Ölçer, 2021).



Source: Adapted from Munoz and Rivera (2010)

4.8 Sustainable Development Impacts

The data provides a mixed picture of the LHI's implications for sustainable development. Economic Growth, The project has contributed to GDP growth and boosted trade volumes, in line with SDG 8 (Decent Work and Economic Growth), Job creation in the logistics industry contributes to SDG 8, however the impact on overall unemployment has been modest, Environmental concerns, The unfavorable trends in air and water quality raise concerns regarding the linkage of SDGs (Climate Action) and (flood), Partnerships, The growth in FDI indicates success toward SDG 17 (Partnership for the Goals) Camarinhas and Ivica Trumbic (2022).

	ADMINISTRATION			NEW BUSINESS DEVELOPMENT		BUSINESS ENVIRONMENT		FINANCE	
DIRECTING	**MIIC**	**TASK FORCE**		**GLOBAL LOGISTICS HUB INITIATIVE**				**Ministry of Finance**	**WORLD BANK US$50 M**
	Minister	Secretariat		**JAMPRO, FCJ, JBDC, BSJ, JIPO, COJ, CAC, FTC,JIFSA,JANAAC, TBL**				Minister	Country Director
		Task Force	NLIC	**Industrial Policy**		**MSME Policy**	**Trade Policy** / **SEZ Policy**		
				Connectivity to production and global supply chains through value added zones					Task Leader
CONTROLLING	Permanent Secretary	**LHI Components**		Seaports		Airports (Air services agreements)	TELECOMS	PIOJ, DBJ	**Country Partnership Strategy**
				Special Economic Zones					
		Master Plan	Education	FZ Council	SEZ Authority establishment	Zoning	SEZ Regime / Domestic Linkages		Investment Climate
		Legislative	Ports/Airports	WB Project Preparation Facility		One-Stop-Shop for business set-up and functioning within SEZs			Entrepreneurship and innovation
		Int'l Policy	SEZ/Urban	Stimulating technology enabled innovation		Single Electronic Window			Financial Sector
		Business Env.	MSME Dev.			**Financial Services Hub**			Infrastructure
		PR & Mrkt	ICT	Programs to encourage Entrepreneurship and Innovation		Infrastructure Fund World Bank Group US$500m local currency Bond			Macro Economic Stability
		Investment & PPPs		Knowledge and Technology Transfer		**National Competitiveness Council** Doing Business Indicators			Mobilisation of Private Investments
EXECUTING	Logistics Hub Task Force	**Ministries, Departments and Agencies**		**IXP**		Trade Facilitation		**MOFP Project Implementing Unit**	**Joint Business Plan**
				Creative Industry Policy		Customs Facilitation			
		MIIC	OPM			Business Development & Service Centres		MIIC - Logistics Hub Secretariat	WBG
		MFAFT	MOFP	Industry Identification		Start up and acceleration training			
		MTWH	MSTEM			Business Linkages program		MIIC/ MSTEM Energy and ICT	IFC
		PIOJ	DBJ	Innovation Hub		Venture, Angel and Crowd fund			
		PAJ	AAJ	Industry Clustering		Trade Missions	Sub-regional disaster relief hub	MIIC/ MOAF Agri-Business / Agro-Parks	MIGA
		FCJ	JAMPRO	An improved environment for intra-industry collaboration					
		Customs	BSJ	Support to SME-finance institutions			SME-level reforms		
		JBDC	MIDA	Business Incubation					

The data gives a mixed picture about the challenges and opportunities.
Challenges persistent trade imbalance, Environmental deterioration, Need for ongoing high-level of infrastructure investment, Competition from other regional logistical centers (Mahmudur Rahim, Idowu, & Springerlink (Online Service, 2015). Opportunities: Improve logistics performance to match global leaders, developing value-added services to improve exports, implementing green technology in logistics operations Expansion of skilled workforce via focused training programs.

4.9 Synthesis of Findings

The data study shows that Jamaica's Logistics Hub Initiative has had a generally beneficial influence on the country's economic development since its inception in 2013. The key results include: Accelerated GDP growth, Increased trade volume and FDI inflows, Job Creation in Logistics-related Sectors, Significant infrastructural development.
However, obstacles still exist, notably in terms of environmental sustainability and the need to boost export competitiveness. The initiative's long-term success will be dependent on overcoming these difficulties while capitalizing on potential for future expansion and innovation in the logistics sector.

V Conclusion

This thorough analysis has painted a nuanced picture of the initiative's effects since its inception in 2013. The Jamaica Logistics Hub Initiative (JLHI) has shown promising results in terms of the economy; the country's GDP growth has accelerated, trade volumes have increased, and foreign direct investment inflows have surged, indicating the initiative's potential to make Jamaica a major player in global logistics. The creation of jobs in logistics-related sectors has supported employment growth, which is in line with the initiative's goal of fostering economic opportunities for Jamaicans. Becoming a worldwide logistics powerhouse is not without its difficulties, though. More port activity and infrastructure development have an impact on the environment, which raises serious concerns about the initiative's long-term viability. Strong environmental management methods and the incorporation of green technology into logistical operations are critically needed, as evidenced by the documented consequences on the quality of the air and water. The JLHI's alignment with the Sustainable Development Goals (SDGs) presents both opportunities and challenges. While it strongly supports economic growth (SDG 8) and global partnerships (SDG 17), there is a clear need to strengthen its alignment with environmental goals, particularly climate action (SDG 13) and life below water (SDG 14). This balancing act between economic development and environmental stewardship will be crucial for the initiative's long-term success and acceptance. It will be critical for legislators, business executives, and community members to uphold transparent communication and flexible management techniques as the project develops. It will be crucial to regularly evaluate the JLHI's effects—both good and negative—in order to inform policy changes and guarantee that the program stays in line with Jamaica's larger development objectives.

To sum up, the Jamaica Logistics Hub Initiative has a great deal of potential to change the economic climate of the nation. Its capacity to become a model of sustainable development—one that strikes a balance between economic growth, environmental stewardship, and social equity—will, however, ultimately decide its genuine success. As it makes its way through this difficult process, Jamaica has the chance to redefine sustainable logistics center development—not only for the Caribbean, but for the global stage.

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