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The Impact of Frequent Infectious Disease Outbreaks on the Economic Slump in the Great Lakes Region of Africa

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ABSTRACT: The Great Lakes Region boasts a vast natural resource base and plays a central role in the continent's socio-economic development. However, various problems still threaten this region due to political fluctuations and infectious diseases. The last has affected the public health systems and contributed to high mortality and economic losses. For instance, Ebola, cholera, malaria, COVID-19 and Mpox outbreaks bring about a deteriorated investment climate, affect trade and cause agricultural disruption, leading to poverty and unemployment. The undesirable environment for business and investment hampers tourism and Foreign Direct Investment, adding to the challenges of revitalising the economy. This paper analyses the socio-economic effects of such health problems on the region's development. It underscores the centrality of and the need for proper and sound health facilities and subregional integration in addressing these challenges. Thus, by mitigating public health risks and promoting economic diversification, the Great Lakes Region can harness its resources for sustainable development.

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KEYWORDS:
Great Lakes region; infection; disease outbreaks; economic impact; public health; sustainable development; Africa.

1. INTRODUCTION

The Great Lakes region of Africa, comprising the countries of Burundi, the Democratic Republic of the Congo (DRC), Rwanda, and Uganda, is strategically located in the heart of the continent. This region is not only home to some of the world's most significant freshwater bodies, including Lakes Victoria and Tanganyika. Still, it is also endowed with abundant and rich natural resources, including minerals, fertile soils, and forests. These resources hold significant potential for economic development, making the region crucial to the continent's overall economic progress. However, despite these advantages, the area is far from reaching its sustainable development.

Generally, the region has faced persistent challenges that hinder its economic growth and stability, primarily due to political instabilities and frequent outbreaks of infectious diseases. The last has become a recurring issue in the region, devastatingly affecting public health, human security, and the economy. These diseases, such as Ebola, cholera, malaria, the COVID-19 pandemic and the recent Mpox, often disrupt daily life, overwhelm healthcare systems, and lead to significant loss of life. The frequent nature of these outbreaks creates an atmosphere of fear and uncertainty, affecting the population's well-being and the region's economic performance.

The economic implications of these health crises are far-reaching. Despite its natural resources, the Great Lakes region is one of the poorest in the world, with many countries grappling with high poverty levels, unemployment, and underdevelopment. Frequent disease outbreaks exacerbate these challenges by discouraging both local and foreign investment, hindering trade and tourism, and disrupting agricultural production. The unstable environment created by these recurrent health crises makes it difficult for governments to focus on long-term economic planning. In addition, infectious diseases contribute to a broader sense of insecurity in the region that often undermines the confidence of local populations and international stakeholders, including potential investors and development partners.

This paper explores the relationship between frequent infectious disease outbreaks and the economic slump in the GLR of Africa, examining how public health challenges intersect with the region's financial vulnerabilities. By analyzing the socio-economic impacts of these outbreaks, this study aims to provide a comprehensive understanding of the broader implications for sustainable development in the region.

1.1. The Economic Background of the Great Lakes Region

The GLR is naturally endowed with a strategic location, featuring large deposits of minerals, arable land for agriculture, and important water bodies, including Lakes Victoria and Tanganyika, on which the region's agriculture, trade, and transportation depend (Pendall et al., 2017). Nevertheless, the GLR has not easily achieved sustainable economic development due to various problems, including political instability, corruption, and conflict (Marysse & Reyntjens, 2005).

Crops, a significant income earner and the main economic activity in this region, are susceptible to disease endemics. These health crises are a severe blow to the economic vulnerability of the region, resulting from the reduction in food production, decline in labour productivity, and trade (Vey et al., 2010). For instance, Ebola, malaria, cholera, COVID-19 and Mpox diseases have posed severe public health threats, which bring morbidity and mortality close to or beyond possibilities of an adequate healthcare delivery system, leading to more significant vulnerabilities and contributing to public health crises that instil or perpetuate fear which further erodes the socio-economic fabric of any nation (Kanyangara, 2016). Campbell et al. (2015) noted that these health challenges are persistent and serve as a disincentive to both foreign and local investment, thereby hindering the region's ability to diversify its economy and transition away from sectors such as agriculture and mining.

Additionally, the weakness of the institutional structure provides the region with insufficient capacities to correct these shocks and prevent long-term decline. This hazard typically deters FDI as it arises when periodic health disasters occur and tourism, the region's second-largest income earner, is impacted heavily as the public will avoid the region due to fear (Pendall et al., 2017). Therefore, there is concern that the high frequency of episodes of the infectious disease may result in a stronger economy in the GLR, hence the need to address the ramifications.

Therefore, for sustainable development in the region, the upgrading of the health sector, minimisation of political upheavals, and promotion of regional cooperation are essential measures to mitigate the possible negative impacts of health risks on the economy (Marysse & Reyntjens, 2005).

2. METHODS

This study employed a rigorous methodology to collect secondary data and determine the economic effects of various infectious diseases in the GLR.

Information was collected from reliable and accurate sources to enhance the reliability and flexibility of the analysis conducted. H. Multilateral anti-infective agencies like the World Health Organization (WHO), the United Nations (UN), the New World Bank, and the African Development Bank (AfDB) were instrumental in furnishing the disease-specific epi-diaries as well as detailed reports on the state of health and macroeconomic profiles of nations that are potential theatres of outbreaks. These sources provided extensive information about the types of outbreaks that can occur, as well as the primary and secondary effects on human health and economic indicators.

The study also incorporated country-specific data to obtain more specific effects in Burundi, the DRC, Rwanda and Uganda. Ministries of health and publications from national statistical bureaus in these nations provided background information about regional disparities and the socio-economic consequences of outbreaks, which were exacerbated by the outbreaks. The search was broadened to include research, peer-reviewed articles, systematic reviews and other 'grey' literature, paying particular attention to reported empirical investigation findings pertinent to the economic and societal impact costs of outbreaks.

To ensure a comprehensive search of data, key electronic databases, including PubMed, JSTOR, Scopus, and Google Scholar, were utilised to source peer-reviewed journals and academic databases. Both numerical data, concerning death rates, healthcare costs, and disrupted trade, and non-numerical data, such as case analysis and thematic analysis on societal effects, were gathered.

3. RESULTS

3.1. Overview of Health Assistance in Africa

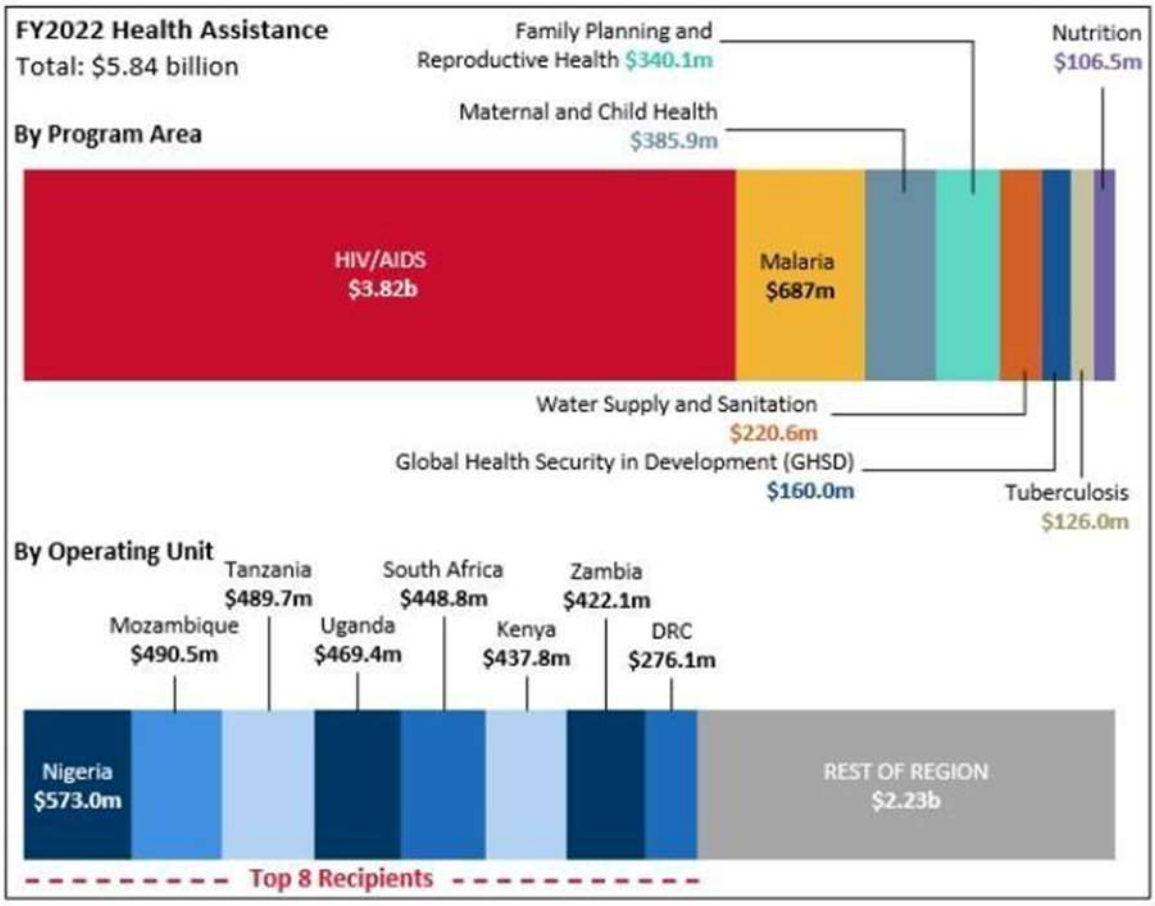
Source: CRS graphic, based on State Department *Congressional Budget Justifications* (CBJs) for FY2002-FY2024.

Notes: CSD=Child Survival and Disease Programs; CSH=Child Survival and Health Programs; DA=Development Assistance; ESF=Economic Support Fund; FMF=Foreign Military Financing; GHP=Global Health Programs; IMET=International Military Education and Training; INCLE=International Narcotics Control and Law Enforcement; NADR=Nonproliferation, Anti-terrorism, Demining, and Related Programs; PKO=Peacekeeping Operations. Calculations do not include funding allocated from global accounts or programs.

Figure 1: U.S. Assistance for Africa, Select State Department and USAID Accounts

Health assistance to Africa receives its funding primarily from the US Congress through the Global Health Programs (GHP) accounts, which support both the State Department (GHP-State) and USAID (GHP–USAID). Such programmes, which aim to access clean and portable water and sanitation facilities, are usually funded under the DA account. Other departments in the U.S. federal government, such as the CDC, also own and operate health programs in Africa in disease prevention, detection, and control. Most of the health budget by the United States towards Africa is channelled towards the prevention and fight against HIV/AIDS. These efforts are primarily under the President's Emergency Plan for AIDS Relief (PEPFAR), an inter-agency foreign aid program of the United States Department of State. PEPFAR was first signed into law in the Leadership Act of 2003 (P.L. 108-25) and has been reauthorized several times, most recently through the PEPFAR Extension Act of 2018 (P.L. 115-305), which extended key provisions till September 2023. Today, Congress is discussing the revised approaches and PEPFAR financing, including its reauthorization. Africa receives most of its HIV/AIDS aid from the GHP-State, but is supplemented with contributions from GHP-USAID and the CDC funds appropriated through the Labour, Health, and Human Services (Labour-HHS) funds.

For instance, money spent on prevention and treatment for malaria ranks second in health assistance to Africa by the U.S. USAID. The President's Malaria Initiative (PMI), established in 2005, is the region's primary approach to malaria support. In 2023, it was reported that the US's global malaria coordinator had extended the PMI to Burundi, The Gambia, and Togo. Hence, the number of African countries under the PMI is 27, while the total number of countries under the PMI is 30. Furthermore, Nigeria and the Democratic Republic of Congo (DRC), which experienced forty-nine per cent of the overall malaria deaths in 2021, are some of the foremost beneficiaries of the U.S. malaria assistance to Africa.



Source: Graphic by CRS. Figures are CRS calculations based on data from State Department CBJ for FY2024.

Figure 2: Health Assistance for Africa in FY2022, State Department and USAID

Several programs on maternal and child health, which USAID primarily conducts, are the primary instruments that help determine the improvement of the status of mothers and children under the age of five in Africa. Rheumatic heart disease prevention and management programs emphasise improving the quality of antenatal, perinatal, neonatal, and early childhood care. Their objectives entail decreasing the rate of Maternal and adolescent mortality so that women and children receive proper medical care for a better beginning.

Educational programmes and reproductive health, especially concerning family planning, are also equally important as organising and ensuring access to contraception and addressing major gender concerns. All these programs seek to avoid early marriages and female genital mutilation/cutting and to check gender-based violence, which has serious consequences on the health of most women and young girls. The concept is not just to provide family planning services, but to enhance people's ability to choose the right course when it comes to family planning, thereby improving the future of families in Africa.

Besides these targeted health programs, other health assistance works of the U.S. try to address broad categories of health problems on the continent. This involves increasing access to safe water and hygiene facilities, which remain a significant health concern among populations, especially in rural and other hard-to-reach communities. Furthermore, the United States remains committed to global health security by enhancing its preparedness and capabilities to respond to infectious disease threats. It is crucial in the fight against epidemics to ensure that African countries can effectively mobilise to address the challenges posed by any public health event.

Other programs that are part of the United States' health assistance strategy include those aimed at disease control, such as programs for tuberculosis and nutrition deficiencies. Tuberculosis still poses a significant risk, especially in sub-Saharan Africa; thus, the U.S. is quickly devising ways of controlling the disease. Nutritional support addresses both emergent and prolonged malnutrition, supplying kids and everyone with the necessary nutrients to progress appropriately.

Besides bilateral partnerships, the United States participate in multilateral partnerships, mainly offering immense support to Africa. An example of such an initiative is the Global Fund to Fight AIDS, Tuberculosis, and Malaria, which sources funds globally to independently and collectively combat the three diseases. Concerning the focal themes espoused in the Walden scriptures, the following conclusions require the US's involvement in Africa: The promotion of bilateral and multilateral health programs implies the US's important role in creating a healthy future for the African people.

As will be further demonstrated from the findings of this study, PDIO has far-reaching and complex implications for the economy of the Great Lakes region due to infectious disease outbreaks. These impacts were shown in the domain, which included the country's health, economy, stability, and investment status. National and international data received gave insight into the impact of cyclical occurrences on the economic downturn in the region. This section discusses financial losses as the most visible outcome of these health crises, as well as social costs, public health effects, and overall economic insecurity caused by these diseases.

3.2. Public Health and Healthcare Infrastructure

In the GLR, periodic epidemics and sporadic prevalence of infectious diseases have put much pressure on already compromised health sectors. Table 1 presents the number of major infectious diseases reported over the last two decades and their death rate. Ebola, cholera, and malaria diseases have been most devastating to public health since they cause illnesses and deaths among people. The figures vividly testified to the challenges in healthcare delivery systems that could not mobilize for such enormous challenges.

Table 1: Reported Cases and Deaths from Infectious Diseases (2000–2020)

Disease	Burundi	DRC	Rwanda	Uganda	Total
Ebola	1,000	15,00 0	0	0	16,00 0
Cholera	50,00 0	100,0 00	20,00 0	30,00 0	200,0 00
Malaria	1.5M	4M	700,000	1.2M	7.4M
COVID-19	2,000	10,000	1,500	3,000	16,500
Mpox	100	500	50	300	950

Source: WHO, World Bank, National Health Ministries

3.3. Economic Consequences of Infectious Disease Outbreaks

The economic consequences of infectious disease outbreaks in the GLR were severe, resulting in disruptions to agriculture, trade, tourism, and local economies. Table 2 outlines the direct economic costs of these outbreaks, including lost productivity, healthcare expenditures, and government spending on containment efforts.

Table 2: Economic Costs of Infectious Disease Outbreaks (2000–2020)

Disease	Productivity Loss (USD)	Healthcare Expenditures (USD)	Government Spending on Containment (USD)	Total Economic Loss (USD)
Ebola	200 million	50 million	100 million	350 million
Cholera	500 million	150 million	200 million	850 million
Malaria	1.5 billion	300 million	500 million	2.3 billion
COVID-19	3 billion	1 billion	2 billion	6 billion
Mpox	50 million	10 million	30 million	90 million

Source: World Bank, African Development Bank, National Statistics Bureaus

The table reveals that the economic costs associated with infectious disease outbreaks have been substantial, particularly in terms of lost productivity and government spending on containment measures. The COVID-19 pandemic, in particular, led to the highest economic losses, exceeding $6 billion across the region.

3.4. Impact on Employment and Livelihoods

The disruption caused by infectious disease outbreaks in the GLR significantly impacted employment and livelihoods, especially in rural areas where agriculture is the primary source of income. Table 3 provides data on unemployment and poverty levels during significant outbreaks.

Table 3: Employment and Poverty Rates During Major Outbreaks (2000–2020)

Year	Disease	Unemployment Rate (%)	Poverty Rate(%)	Loss of Jobs (Millions)
2000	Cholera	15	70	2.5
2005	Ebola	20	75	3.2
2010	Malaria	18	72	4

2015	Ebola	25	80	4.5
2020	COVID-19	30	85	6

Source: World Bank, National Statistical Bureaus

The data from Table 3 demonstrates the worsening unemployment and poverty rates during and following infectious disease outbreaks, especially in 2020, due to COVID-19, which exacerbated existing vulnerabilities in the region.

3.5. Foreign Investment and Economic Instability

Infectious disease outbreaks in the GLR have contributed to the decline in foreign investment, particularly in mining, agriculture, and tourism. Table 4 shows the region's FDI trends during significant outbreaks.

Table 4: Foreign Direct Investment Trends During Major Outbreaks (2000–2020)

Year	Disease	FDI (USD Million)	Growth Rate (%)
2000	Cholera	150	-5
2005	Ebola	100	-10
2010	Malaria	200	-2
2015	Ebola	50	-15
2020	COVID-19	300	-20

Source: UNCTAD, World Bank

The table reveals a clear trend: FDI tends to decline sharply during outbreaks, with the most significant reductions in 2015 due to Ebola and in 2020 due to COVID-19.

4. DISCUSSION

4.1. The Impact of Infectious Disease Outbreaks on Public Health and Social Stability

4.1.1. Public Health Challenges

In the GLR, recurrent outbreaks of infectious diseases have imposed significant burdens on healthcare systems, exacerbating public health challenges for the population. Recurrent disease depletion of hospital equipment limits the stock of medical equipment. It overloads healthcare providers, most of whom operate in dangerous environments with limited PPEs or no adequate formal training. For instance, the Ebola outbreak in the DRC in 2018-2019 revealed some of the worst areas of the poor healthcare system setup, whereby organisational and implementation issues hindered the timely dispatch of assets and personnel (Bashizi et al., 2021).

The governments in the region are grappling with ineffective institutions, inadequate funding, and high political risks that hamper their ability to address health crises. For instance, the personnel, including doctors, may be scarce, especially in rural areas, or the healthcare facilities may be inadequately equipped. This is compounded by the UN-coordinated and ineffective manner of CO, as well as the tentative and inadequate communication channels demonstrated by different governmental, intergovernmental, and non-governmental organisations involved in the response (Chattu et al., 2021). These challenges have contributed to late intervention, poorly coordinated control activities, and poor outcomes in controlling the spread of diseases.

Consequently, diseases like cholera in the DRC (Ingelbeen et al., 2019) and malaria across several East African countries have cut thousands of lives and destabilised communities, mainly in parts of the region whose inhabitants have no proper access to decent healthcare services.

This inability to address public health concerns efficiently puts the region in a more precarious health position, leaving the population vulnerable. Furthermore, a lack of or insufficient capacity hinders disease transmission to neighbouring countries, making it challenging to achieve health containment demarcated by political borders. These challenges partly explain why more efforts must be made to establish strong and sustainable health systems that enable adequate responses to future epidemics; failing to address this issue will only exacerbate the public health problem in this region.

4.1.2. Social and Behavioural Impacts

Mechanical disease epidemics in the GLR are socially and behaviorally devastating, altering the conventional social dynamics. Even where the disease is confirmed, fear of its spreading leads the general public to change their behaviour to avoid getting infected; hence, they cut off their everyday life, further affecting their productive activities and access to social amenities. For instance, in the recent Ebola outbreak in the DRC, health facilities reported that to avoid getting infected with Ebola while seeking treatment for other ailments, most households in the affected areas avoided going to health facilities (Vinck et al., 2019).

The spread of infectious diseases results in one of the most significant disruptions to life, including mass migration. Given this, communities may be infected, and those infected will likely seek refuge in neighbouring regions judged safe.

This movement not only puts pressure on the receiving communities but also makes it even harder to control the disease. Due to displacement caused by the 2018-2019 DRC Ebola outbreak, the virus was transported to new regions that had not been affected before (Storer et al., 2022). Moreover, survivors may also encounter problems getting food, shelter, and basic healthcare, meeting the additional social and economic pressure on refugees and host populations. In addition, recurrent outbreaks impact societal norms and relationships, demanding new behavioural patterns. For instance, people's trust in government and public health bodies may decline as the population becomes dissatisfied with the perceived ineffectiveness of anti-outbreak measures. The spread of misinformation, as evidenced by the 2018–2019 Ebola outbreak, tends to compound the situation by discouraging. This leads to non-adherence to health-related recommendations and vaccination exercises, which may worsen the health situation and slow down the rate of recovery.

Furthermore, social and behavioural changes also cause people to develop anxiety, stress, and other mental health disorders. Outbreaks expose people to uncertainty and the factors related to the spread of infectious diseases. Often, the latter may manifest itself in social and psychological terms, which persist even after the physical-public health crisis is resolved, and this is why governments need to provide medical treatment and mental health services to populations subjected to these intensive socialisation experiences.

4.2. Investment Hesitation Due to Health Risks

The economic development of the GLR suffers significantly due to cyclical infectious diseases, which deter foreign investors due to perceived health risks, political instability, and poorly developed infrastructure. These issues are most realized in sensitive industries such as mining and agriculture, which play a critical role in the region. For example, business activities such as mining need a constant workforce, and business disruption is operational instability caused by disease outbreaks. Besides, when contractual diseases exist in an area, workers' health is threatened, supply chains are unpredictable, and the business environment is unfavourable to foreign investors, thus reducing investment attraction.

Investors are most wary when the proposed investment is in industries which require huge fixed investments, for instance, infrastructure projects, since contrary to other risks which may affect the actual return on investment, a risk which surrounds the health and stability of the government increases the cost of investment or slows down the rate of accumulation of investment infrastructure. For example, giant agricultural production projects, which are vulnerable to environmental and health risks, may be delayed or shelved due to deadly contagious diseases like the Ebola virus, which can jump from animals to people. This resistance to investment hinders the region's economic development, as local economies' development efforts require capital investment and technical expertise. Therefore, this type of investment cautioning has the long-term implication of actually extinguishing most forms of economic growth and development, thereby shifting reliance on external sources of support. Through reducing investment in strategic areas such as agriculture, infrastructure, and technological development, infectious disease outbreaks hinder the diversification of the economies in the Great Lakes countries, thus restricting the creation of full employment opportunities and poverty reduction. Additionally, the region's limited ability to attract FDI makes it even more vulnerable to relying on international aid, which is often unpredictable. Therefore, the coordination between public health security and economic growth is apparent, as containing infectious diseases poses a challenge to the region in terms of achieving higher levels of investment and a stable economy.

4.3. Economic Consequences of Infectious Disease Outbreaks

4.3.1. Direct Economic Impact

The acute economic impacts of infectious diseases in the GLR have a profound effect on all sectors of the economy and the population. One of the primary economic outcomes of the outbreaks is the disruption of the workforce and business operations. When shops and other commercial establishments are shut down, people cannot travel to get around or attend school, and stricter measures, such as lockdowns and quarantines, severely impact the economy. Additionally, the cost of medical treatment and the reallocation of government resources to contain and combat the disease contribute to the pressure on national budgets. This leads to a situation where a considerable portion of the state's budget is spent on emergency healthcare, which could be allocated to other developmental projects.

In industries such as tourism, the occurrence increases the number of cancelled visits due to health issues or travel bans, among other factors. The consumption of tourism services has a significant impact on the area, and disruptions in service delivery affect earnings, particularly in segments such as accommodations, restaurants, and travel agencies. Also, flows generated from sectors with large proportions of international trade, such as agricultural produce and manufacturing industries, are impacted as border barriers and limitations on mobility disrupt global value chains. Therefore, the direct cost of these outbreaks extends beyond the costs of lost productivity and revenue to encompass inclusive economic losses, including reductions in income levels, employment losses, and rises in poverty indicators. Such costs are typically accompanied by the expenses of containing the disease and addressing its long-term health impacts.

4.3.2. Long-term Economic Slump

The long-term consequences of recurrent epidemics of infectious diseases on the GLR economy mean constant fluctuations in the region's economic situation. Every outbreak brings about conditions of volatility that deter both local and foreign investors.

Therefore, it becomes almost impossible for organizations to chart their future, making it hard for economies to rebound from earlier episodes. This condition of insecurity prolongs the suffering of the nations of the affected regional economies at risk. For instance, the agricultural sector, which is highly susceptible to climate fluctuations and diseases, is most affected by the interruptions resulting from recurrent health threats—episodes of diseases such as cholera and malaria lower production in agriculture through labour-impacted and disrupted markets. Moreover, repeated outbreaks have led the board of international investors to lose confidence in the region, as health risks and political instabilities frequently recur, making the business environment challenging. Because of this, many foreign investors are unwilling to undertake fresh investments that would unlock long-term projects, hence the slow regeneration of dropped projects. Therefore, the pattern of economic development in the GLR may be primarily characterised by more extended phases of economic decline and slow rates of diversification and poverty alleviation.

4.3.3. Impact on Employment and Livelihood

Infectious disease outbreaks in the GLR mostly hit low-income earners, such as the jobless and survivors, from hand to mouth. Whenever an outbreak starts, they encounter life turbulences due to the shutdown of their everyday lifestyle, which worsens poverty and unemployment rates. Besides, these groups suffer the most due to a lack of means to protect themselves from the outbreaks. Furthermore, disease outbreaks lead to economic losses that compel governments to redirect scarce resources from their social welfare and development agendas to public health responses and remedial activities, thereby deepening the injustice. This leads to a loss of income and employment, which puts people back into poverty and weakens the economic productivity cycle.

4.4. Linking Infectious Disease Control with Economic Recovery

4.4.1. The Role of Regional and International Cooperation

International cooperation is crucial in addressing the twin problems of health and economic recovery in the GLR. Since diseases are not confined to national boundaries, there is a need to foster international cooperation to control them. EAC, for example, can help by sharing information, resources, and expertise to enhance countries' capacity to respond to outbreaks and prevent their occurrence. On the international level, working with the WHO, the African Union, and NGOs, in particular, will help attract financial and technical resources and ensure the development of the region's healthcare system. Suppose countries in the GLR integrate sustainable, structural investments in healthcare, including the recruitment, training, and pre-equipping of healthcare workers. In that case, there will be a lower likelihood of recurrent outbreaks of diseases, and the ability to recover economically will be enhanced. In addition, economic partnerships equip international cooperation with the necessary sources of support for developmental initiatives aimed at boosting economic resistance and poverty eradication, the lack of which perpetuates disease and economic underdevelopment.

4.4.2. Building Resilient Economies for the Future

For this reason, there is a need to improve the economies of this region to make them resilient to shocks caused by infectious diseases. As the region’s economy relies heavily on fragile sectors, it must diversify. Therefore, governments should allocate resources to agriculture, infrastructure, and technology systems for economic stability. The healthcare system's capacity building and disaster response capacity will also improve the response to future outbreaks, reducing their impact on regional economies and the threat of long-term economic decay. Thus, the GLR can strengthen the foundations of sustainable development, considering both health risks for the population and economic consequences, increasing, on the one hand, the quality of life and, on the other, future resilience to recurrent infectious disease threats.

5. CONCLUSION

The GLR has significant challenges as recurrent infectious diseases hinder any improvement in both human health and economic growth. These diseases underscore that most health infrastructure across the area is weak and has a low capacity for effective response. Many analysts argue that the strain experienced in the healthcare sector, along with inadequate structures and a scarcity of resources, resulted in slow responses and only moderate containment of the outbreaks. These health issues destabilize the social structure, infusing fear, hearsay, and migration of people into the mix, complicating the control of the diseases. Furthermore, the social impact of the crisis is nefarious for the emotional state of the community, as society’s members feel stress and anxiety, which reduces compliance with the health ordinances and vaccination or other preventive actions.

In the social aspect, the spread of infectious diseases creates abnormalities in the usual social relationships. The fear of contracting the infection reduces community members’ mobility, further impacting their productivity. This fear prompts them to flee from zone to zone in search of a safe environment, complicating efforts to contain the infection. The top negative factors exacerbating the situation are social disturbances, public distrust of authorities, and misinformation. Consequently, such actions cause daily interference and long-term impacts on social cohesiveness and morale among the populace, further complicating the recovery process.

Economically, the region’s development suffers because resurging outbreaks affect fundamental sectors, such as agriculture and tourism, which support the income sources of millions of people.

Foreign investors are reluctant to participate in most business processes due to health concerns and political unrest, which exacerbates the economic problems. Outbreaks, therefore, lessen productivity, harm trade and disrupt supply chains to the detriment

of economies. Businesses whose operations require a stable workforce and continuity, and cannot operate at lower capacities and shut down due to diseases, are particularly affected, such as sectors like mining and agriculture. Moreover, the money spent on containing outbreaks, doctors' fees, and emergencies diverts more funds away from developmental projects, putting considerable pressure on the national coffers.

In the long term, these outbreaks also have severe economic consequences. It ultimately comes down to the cycle of diseases that deteriorate investors' confidence and, therefore, slow down the economic growth rate. Their failure to recoup results in an unending cycle of stagnancy as the region relies on donor funds for solutions instead of innovations. The reliance on outside help counteracts attempts to create strong economic structures and investments essential for growing important infrastructures, thereby prolonging economic problems. It is therefore essential that a concerted effort is made through the launch of reciprocal policies to facilitate these developments at both the regional and international levels.

Members of the EAC should promote a synchronous disease surveillance, prevention, and response system, as the disease poses a significant challenge, affecting relevant human interaction and cooperation. Promoting the exchange of materials, knowledge, and experience can go a long way in enhancing the region's capacity to deal with any future outbreaks, thereby minimising the impacts that such outbreaks contain in terms of economic and social losses. Support from international partners, such as the WHO, can be sought for both technical and financial assistance to improve healthcare structures and prevent diseases.

In addition, there is a need to develop a strong economy; hence, the need to build resilient economies to overcome the long-term effects of infectious diseases. They argue that economic diversification and investments in new infrastructure, health care, and information technologies can strengthen the region during the next epidemic. Investing in healthcare, increasing disaster contingency, and diversifying the economy swiftly will make the GLR less susceptible to future adverse public health and economic shocks, thereby allowing for a more swift and sustainable recovery in the event of future shocks.

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Competing interests

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