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FOOD SECURITY IN TRINIDAD AND TOBAGO OVER THE PAST TEN
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ABSTRACT

Food security is a serious issue that affects the economic, social, and health well-being of people and entire countries. This study looks at Trinidad and Tobago's food security condition from 2012 to 2022. In the study, the challenges to national food security are examined, along with suggested solutions. 48 respondents were polled using a questionnaire as part of the study's methodology to learn about their opinions on the nation's food security. The findings show that Trinidad and Tobago had a variety of issues with guaranteeing food security during the research period. These problems include poverty, noncommunicable diseases, dependence on imported food, and climate change. The article also discusses possible remedies that have been implemented to deal with these issues, such as sustainable agricultural practices, support for small-scale farmers, and increased access to wholesome foods. Overall, this research study sheds light on the country's attempts to achieve food security as well as the state of food security in Trinidad and Tobago between 2012 and 2022. The study underlines the necessity of addressing the nation's issues in order to guarantee that every citizen has access to enough, safe, and nourishing food. The results of this study can be used to direct actions and policy decisions aimed at reducing food insecurity in Trinidad and Tobago and other countries dealing with analogous issues.

Keywords: Agriculture, Trinidad & Tobago, Challenges, Food security, Nutrition, Imports, and Climate change.

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INTRODUCTION

According to university lecturer, Dr. Mark (Gibson), “Food security (is) a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” As human survival depends on access to wholesome nourishment, it becomes very important for countries to seek to achieve food security. A country that achieves food security stands to benefit in the areas of economic growth and job creation, elimination of poverty, trade possibilities, increased global security and stability, and improvement of health and healthcare. (“Global Food Security”) For an exceptional view of food security, Finland has achieved this and has reaped the relevant rewards. (Long) stated that, “Finnish people have the highest level of food security in the world according to the Global Food Security Index 2022.” Finland's prosperity and development may be attributed to its high degree of security, as it has the top ranking on the world food security index.

Food insecurity is characterized by a family's economic and social situation in which access to enough food is limited or unclear, according to the U.S. Department of Agriculture (USDA). The Caribbean and Small Island Developing States are not immune to the global concerns of food security and hunger. Realizing the challenges involved in creating food security is essential. These include things like the expanding population, rising food prices, and climate change. If the food is not handled properly in this situation, food insecurity might develop. A review of previous relationships with food security reveals that the Caribbean has been reliant on imports of foreign commodities. This dependency has resulted in several issues, including the prospect of food insecurity in the Caribbean. According to the World Bank, only three Caribbean states

(Guyana, Belize, and Haiti) produce more than half of the food eaten in the region. (Turnbull) Food security has been a primary emphasis for its improvement because of its reliance on imports rather than sustainable food growth. Despite this, the Caribbean is still being impacted by outside influences that jeopardize people's livelihoods and ability to meet basic needs. These external issues, together with other environmental concerns, have played a significant influence in establishing a danger of food insecurity and heightening the desire to become food secure in the Caribbean and Trinidad & Tobago. With people selling off their assets and using their savings to meet basic needs concerning trends are seen. (Writer). The crisis has emerged as greater, placing the Caribbean at risk of becoming food insecure, based on the islands' coping capabilities. As the Caribbean grapples with this issue, the threat to food is seen in Trinidad and Tobago, which imports food from further afield. Keith Rowley, Prime Minister of Trinidad & Tobago, remarked in an article by (Javeed) that:

What we have been doing is looking for our food supply far away around the world when in fact there are possibilities to find a food supply next door with our effort significant aspects of our investment and our transportation but there are some missing links.

The Prime Minister raised concern about the issue, and suggestions for reducing the effect of food security were made showing its importance. It was noted that the government of Trinidad and Tobago must take food production and security seriously since farmers and residents are suffering as a result. (Newsday) Ensuring that these concerns are addressed, solutions for sustainable ways to cope may help to secure the future of food security in Trinidad and Tobago.

Rationale

This study is critical in promoting and highlighting a shift in the way Caribbean people think about food and food security. It is required since it is difficult to provide adequate food for a country's population as well as the entire planet. With an increasing population, this explains why food security is such a concern for all countries, developed or emerging. In this context, it assists people in understanding obstacles and promotes awareness of the concerns that we confront as Small Island Developing States (SIDS). In terms of food, it is advantageous for the Caribbean to discover sustainable solutions that will be helpful in the future and for future generations. Furthermore, the critical component of this research is not solely based on the fact that we all need food to sustain our daily lives, but it is about proving that the Caribbean requires constant physical, social, and financial access, availability, and sustainability for enough safe, affordable, and nutritious food for a healthy population. Although food security is a global issue, there is a huge need for this research since it impacts the Caribbean much more severely owing to our geographical location, relationships with other nations, and a variety of other variables. The Caribbean's economic, social, environmental, and cultural aspects render it subject to food insecurity concerns such as poverty, increasing natural disasters, and a lack of sufficient care. Recognizing that, as a Caribbean native and geography student, it is critical for this study to take place in order to expand awareness about food security not only for me, but also for future and present generations.

Thesis Statement

Thesis Statement: Despite efforts to address food security in Trinidad and Tobago, significant challenges persist due to a variety of factors such as climate change, agricultural inefficiencies, and economic barriers; however, solutions such as increased investment in sustainable

agriculture and policies that promote equitable access to food offer a promising path towards improved food security in the country.

Parameters

This analysis is based on data from the previous ten years, from 2012 to 2023. Food security developments in Trinidad and Tobago and the Caribbean at large occurred during this time period, including policy implementation at the national level. This time also considers the issues posed by the COVID-19 epidemic. The 2015 United Nations Zero Hunger target must be emphasized when discussing policy implementation. This gradually contributed to a decrease in food insecurity beginning in 2017 and continuing to the present. More initiatives were put in place in Trinidad and Tobago, such as the National Food Production Action Plan 2012-2015, which was intended to help with food security. These efforts were not futile but with the Covid-19 pandemic, food security became threatened once again. This danger, combined with climate change, has caused cause for concern, since heightened weather occurrences experienced over the specified years have left the Caribbean susceptible and have contributed to Trinidad and Tobago's food security concerns. While this initiative focuses on food security in Trinidad and Tobago, it also mentions the Caribbean as a whole.

Objectives

This study examines and highlights:

The Caribbean islands, with a focus on Trinidad and Tobago, face existential food security difficulties, with some remedies already implemented or recommended. The precise goals of this study are to identify and comprehend the causes of food insecurity: This goal entails investigating the variables that lead to food insecurity, such as poverty, a lack of market access,

and natural catastrophes. Evaluating the effects of food insecurity on individuals and communities: This goal includes researching the health, economic, and social effects of food insecurity, as well as how it impacts people, families, and communities. Developing and accessing interventions to increase food security: This goal entails investigating and testing various food security solutions, such as food aid programs and agricultural development initiatives. Examining the relationship between food security in Trinidad and Tobago and other worldwide concerns: This goal entails investigating how food security is related to other global challenges such as climate change, population increase, and war. Examining the link between food security and sustainable development: This goal entails investigating approaches to attain food security in a sustainable manner, considering environmental, economic, and social aspects.

Significance of study

Food systems is the “collaboration of all steps involved in food creation including, production, processing, distribution, consumption, and waste management.” (Haugen) Here this system may have various difficulties because of the intricacy of origination and the numerous ways that an event or series of events can have rippling and systemic effects. The results created would produce a better understanding of food security and its challenges as it relates to Trinidad and Tobago. The research would become more relevant in the future since it may be utilized to enhance personal knowledge, raise public awareness about an issue that is seldom discussed at the ground level, and contribute to a line of academics for future scholars. Furthermore, the ideas developed should dispel the myth that food security is merely about having food; rather, it is about something deeper that impacts everyone if solutions are not found. (Walton and Mason) stated “Knowing the overall numbers of people facing food insecurity does not give a complete picture, as the intensity of food insecurity differs between populations.” This would help bridge

the gap in understanding food insecurity in the Caribbean and how to manage it after extensive study.

Methodology

Mixed methods were used in data collection for this study. Primary sources were used in the research process which included newspaper reports to gain information on Trinidad and Tobago and to get first-hand insight from the relevant authorities on issues concerning food security. This was accessed from newspaper sites like *Trinidad Newsday*, *Trinidad Express* and other Caribbean/ global newspapers. A quantitative research technique will be employed, and data from a sample of the population will be collected via a self-administered questionnaire. The study will employ a random sampling approach to choose volunteers from the Trinidad and Tobago population. The sample size will be 50 people drawn from various locations and demographics to guarantee that it is representative of the population. In this research secondary sources were highly used. The secondary documentation was of other literature reviews, articles and journals that were analysed on the topic previously, academic books, reliable blogs, and other commentaries with critical reviews. These sources were crucial in the creation of the research like *Trinidad Express* as it provided a plethora of information on a variety of food security topics, such as regulations, agricultural methods, environmental concerns, and economic variables affecting food supply and access.

Data utilization

Throughout this study, mixed method research was the recommended strategy. According to Cameron, "In general, mixed methods research represents research that involves collecting, analysing, and interpreting quantitative and qualitative data in a single study or series of studies that investigate the same underlying phenomenon." The use of quantitative data was essential for

this research because statistical data was used to better examine bigger quantities of data supplied for the territory of Trinidad and Tobago and the wider Caribbean. This data was beneficial for identifying patterns, connecting linkages, and creating predictions based on the data that was discovered. To add, qualitative data was also used with relation to quantitative data to further describe the data that was analysed. By using both quantitative and qualitative research a broader lens was looked at and interpreted to produce the relevant information that was needed on issues concerning food security in Trinidad and Tobago.

Chapter Outline

This study consists of four main chapters which would be discussed in depth throughout the course of the study.

Literature Review

The first chapter would consist of impactful; scholarly work from various documentation sources taking into the consideration the parameter, objectives and methodology.

Results

This second chapter includes images, graphs and tables that would be referenced throughout the study while also giving brief descriptions.

Discussion

The third chapter would include a discussion of the results found from the questionnaire giving other detailed information and interpretation.

Conclusion

This fourth chapter summarizes all the main points proving that the thesis statement was agreed to be true and factual.

Work Cited/Bibliography

Appendix

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CHAPTER ONE- Literature Review

A great deal of literature currently exists on different dimensions of food security regionally and around the world. This chapter will highlight and review the literature on this topic, especially those relevant to general information on food security and those focusing on the Caribbean and Trinidad and Tobago.

The Food and Agriculture Organization (FAO) provides a great deal of general information through reports, books and their website on global perspectives concerning food security and insecurity. This international organization has published on the state of food security and nutrition, connections to food security and poverty and the impact of climate change on food security around the world. The FAO's How to Feed the World in 2050 report is very valuable for this research as it provides background information on food security, historical perspectives on the global demand for food and gives an insight into what the food security situation may be like in the future given global challenges. While such a source is excellent in providing a foundation for understanding important issues concerning food security, it does not necessarily concentrate on the Caribbean experience and so by placing emphasis on Trinidad and Tobago, this study will help to add to the literature on food security in the region.

Furthermore, "Food security and the Caribbean: Implications for small island states," by (Burnley and Ali), analyses food security in the Caribbean, particularly in small island republics like Trinidad and Tobago. According to the authors, climate change, increased food prices, and restricted agricultural resources are all factors that contribute to food insecurity. They also look at the consequences of food insecurity, such as malnutrition and social instability.

Burnley and Ali's study addresses a research gap by concentrating on food security in the Caribbean. According to the authors, tiny island governments have unique food security challenges, such as limited land resources and vulnerability to natural disasters. They provide potential solutions such as improving agricultural infrastructure and promoting sustainable farming practices. Overall, Burnley and Ali's 2014 research adds considerably to the corpus of information on food security in the Caribbean. The authors emphasize the need of understanding regional circumstances when developing strategies to fight food insecurity by examining the challenges faced by small island republics such as Trinidad and Tobago.

In their 2013 essay, "The Global Food Crisis and Its Implications for Trinidad and Tobago," (Rubenstein and Clancy) examine how the global food crisis impacts the country's capacity to feed its population. Because of their reliance on imported food, the authors argue that Trinidad and Tobago are particularly vulnerable to price volatility and supply chain disruptions in the worldwide market. The article asserts that the global food crisis has had a substantial influence on Trinidad and Tobago's economy and social well-being. Rising food prices, in particular for low-income households, can induce inflation and reduce household purchasing power. Food shortages, according to the authors, may worsen socioeconomic inequities and unrest. It underlines the need of understanding the greater context of Trinidad and Tobago's food security challenges. The authors argue that to solve the nation's food security challenges, local measures such as increasing food sovereignty and domestic agricultural output may be necessary. This study highlights the impact of global factors on regional food systems, making a substantial contribution to the body of research on food security in Trinidad and Tobago. By exploring the consequences of the global food crisis on Trinidad and Tobago, the authors emphasize the need of developing locally tailored solutions to alleviate food insecurity.

(Baker and Williams) investigate the issues and constraints to food security in the Caribbean region, with a focus on the long-term implications. The book is divided into four sections: understanding food security in the Caribbean, food and nutrition policy, food production and supply, and food security and the environment. In the first section, the authors address the key ideas and frameworks for understanding food security in the context of the Caribbean. The limitations of traditional definitions of food security are examined, and it is suggested that a more comprehensive strategy is needed to account for the complexities of food access, availability, and consumption. The second section assesses the effectiveness of existing initiatives and finds any gaps or issues. It is also concerned with food and nutrition policy in the Caribbean. The authors argue that increased policy coordination and sectoral interaction are required to tackle this challenge. The latter part of the book delves into the Caribbean's food supply and production issues, covering themes such as agricultural productivity, land tenure, and access to credit and markets. To ensure that food reaches people in need, the authors argue that more investment in agriculture and agribusiness, as well as enhanced supply chain management, are required. Finally, the fourth portion of the book analyses the environmental consequences of food security in the Caribbean. According to the authors, climate change, natural disasters, and environmental degradation pose severe threats to food security in the region, and that more emphasis should be placed on the development of sustainable and resilient agricultural systems. It is valuable for understanding food security in the Caribbean since it provides a thorough evaluation of the region's key problems and difficulties. The book discusses food and nutrition policy, food production and supply, and the environmental aspects of food security. It is an excellent resource for researchers and policymakers seeking to appreciate the complexities of food security in the Caribbean due to its breadth of coverage. Baker and Williams (2015) provide

a comprehensive and insightful study of the concerns and issues facing food security in the Caribbean. Policymakers, scholars, and practitioners working in agriculture, nutrition, and food security may find the book extremely useful.

The book by Clay and Schaffer adds to the literature on food security in Trinidad and Tobago by focusing on the development of sustainable food systems to enhance nutrition and reduce food poverty. The book provides a comprehensive summary of the country's major concerns and challenges, including poverty, market access, climate change, and environmental degradation. The book contributes to the body of knowledge on food security in Trinidad and Tobago by focusing on the development of sustainable food systems to improve nutrition and reduce food insecurity in the country. The book delves into the country's major concerns and challenges, such as poverty, market access, climate change, and environmental degradation. Another advantage of the book is its use of actual evidence to back up its arguments. The authors give a complete understanding of the country's issues and prospects using a range of data sources, including surveys, interviews, and case studies. They also provide clear and concise explanations of the key subjects and ideas discussed, making the book accessible to a wide readership. Overall, the book is a valuable resource for academics, politicians, and practitioners interested in addressing Trinidad and Tobago's food security and nutrition issues. Its emphasis on sustainable food systems, as well as its use of scientific data, making it an extremely useful tool for anyone looking for evidence-based answers to these complex questions.

(Mohamed's) work "Food security and small island developing states: An analysis of the challenges and opportunities facing Trinidad and Tobago" contributes to the corpus of knowledge on food security in Trinidad and Tobago. The author analyses the country's numerous food security challenges and opportunities, as well as how these issues relate to larger global

issues such as climate change and economic globalization. The study is particularly useful in examining the specific challenges that little island developing nations such as Trinidad and Tobago face in achieving food security. Mohamed underlines the importance of understanding the local environment and considering the perspectives and concerns of people affected by food insecurity. Furthermore, the author recommends various potential solutions to these difficulties, including growing local food production, promoting sustainable agriculture practices, and implementing policies that prioritize food security as a critical component of sustainable development. Overall, Mohamed's study provides a useful and extensive assessment of the issues surrounding food security in Trinidad and Tobago, highlighting the significance of a multifaceted approach to addressing these difficulties. The study will be of interest to researchers, policymakers, and other stakeholders working to improve food security and sustainable development in the region.

(De Souza's) essay "Food security: An all-inclusive plan" provides a current perspective on food security in Trinidad and Tobago. The author contends that a comprehensive plan that includes sustainable agriculture practices, financial aid for small-scale farmers, and expanded access to affordable nutritious food for all populations is required. The article highlights the various concerns confronting Trinidad and Tobago, such as climate change and the impact of imported food on local agriculture. This article is useful for the study subject because it gives a contemporary viewpoint on the condition of food security in Trinidad and Tobago, as well as ideas for achieving food security in the country. The article highlights Trinidad and Tobago's distinct difficulties and gives insight into the solutions offered to overcome them. The source is likewise open to the public, making it understandable and relatable to a wide spectrum of consumers. One important flaw in this judgment is that it does not consider any limitations or

drawbacks to the author's arguments and ideas. The essay, for example, does not address potential impediments to implementing the proposed all-inclusive policy, such as political and economic concerns, as well as a lack of resources and infrastructure. Furthermore, the evaluation does not look into any potential author biases or opposing opinions on food security in Trinidad and Tobago.

The book "Agricultural research for development and food security in the Caribbean: past, present, and future" by Swallow and Kerr provides an in-depth assessment of the Caribbean's agricultural research industry and its impact on food security. The authors go into the region's agricultural research history, development, and present state of affairs. They argue that research is vital to enhancing agricultural productivity, aiding small farmers, and ensuring Caribbean food security. This book is relevant to the subject because it provides a thorough examination of the role of agricultural research in achieving food security in the Caribbean. It discusses the region's agricultural research history, current situation, and prospects. The book is written by subject matter experts, lending credibility to the information. One potential limitation of this source is that it may focus on the entire Caribbean region rather than just Trinidad and Tobago, which may limit its applicability to the research subject. The review detailed the book's content and relevance to the study problem; however it did not address any shortcomings. Because the book has a broader Caribbean viewpoint, potential flaws include a restricted focus on specific challenges and solutions related to food security in Trinidad and Tobago. Furthermore, because the book concentrates on agricultural research, it may overlook other important factors influencing food security, such as economic, social, and political problems. It may also be useful to examine if the book presents an accurate picture of the role of agricultural research and

technology in addressing food security, as well as whether it analyses potential negative implications such as environmental harm or resource inequality.

The FAO research "The State of Food Security and Nutrition in the World 2019" gives a thorough review of the global state of food security and nutrition. The research examines a wide range of food security challenges, including hunger, malnutrition, and food insecurity. It also assesses progress in meeting the Sustainable Development Goals for food security. This source is valuable for the study subject because it provides a global perspective on food security and nutrition that can be utilized to compare Trinidad and Tobago. In addition, the report contains information and figures that may be utilized to contextualize the country's food security situation. However, given the study is not primarily focused on Trinidad and Tobago or the Caribbean region, its relevance to the research question is restricted. Furthermore, while the article provides a global overview, it may not address Trinidad and Tobago's specific food security challenges and solutions. Based on the review provided, no obvious gaps were detected. However, it is important to realize that the FAO report provides a global perspective on food security and nutrition, and while it may contain relevant information, it may not address Trinidad and Tobago's specific challenges.

In addition, (Nath, Agapitova, and Ekanayake) investigate the impact of the COVID-19 pandemic on food security in Trinidad and Tobago. Using household-level data, the authors explore changes in food security indicators before and throughout the outbreak, as well as the determinants that contribute to food insecurity during the pandemic. The analysis shows that the pandemic has had a significant impact on food security in Trinidad and Tobago, with an increase in the number of households experiencing food insecurity. The authors identify many factors that contribute to food insecurity during the outbreak, including income loss and disruptions in food

supply systems. The research also underlines the need of social protection measures in mitigating the pandemic's impact on food security. Overall, this paper adds to the research by offering a current perspective on the impact of the COVID-19 outbreak on food security in Trinidad and Tobago. The study's findings and recommendations are critical for policymakers and practitioners dealing with food insecurity during pandemics. However, the study only looks at Trinidad and Tobago and does not compare it to other small island developing states, which might indicate a research void.

The study "Food insecurity and the risk of obesity among young children in Trinidad and Tobago" by (Barrow, Gaskin, and Walker) examines the relationship between food insecurity and the risk of obesity among Trinidad and Tobago's early children. In three low-income locations, the researchers performed a cross-sectional examination of 541 children aged 2 to 5 years old, as well as their professions. Food insecurity was shown to be highly associated with an increased risk of juvenile obesity, even after controlling for potential confounding factors such as age, gender, and home income. The article is relevant to the research subject because it underlines the negative impact of food insecurity on the health of young children in Trinidad and Tobago. The findings of the study underscore the need of addressing food insecurity as a public health priority in order to reduce the incidence of childhood obesity in low-income neighbourhoods. The research also provides insight on the relationship between food insecurity and obesity in Trinidad and Tobago. However, because the study's sample size was limited, the findings may not be generalizable to other groups. Furthermore, the study did not investigate the underlying mechanisms by which food insecurity may contribute to obesity, which might be an area for future research.

(Mahabir, Gulliford, and Taylor) investigated the prevalence of hypertension and diabetes mellitus in a rural population in Trinidad. The authors collected data using a cross-sectional survey and determined that the prevalence of hypertension was 35.9% and the prevalence of diabetes mellitus was 13.6%. The research highlights the need of early detection and management of noncommunicable diseases (NCDs) in Trinidad and Tobago. This article is important to the research subject because it sheds light on the high prevalence of NCDs, particularly hypertension and diabetes mellitus, in Trinidad and Tobago. The study's concentration on rural populations underscores the need of tackling NCDs outside of metropolitan areas. However, because the study was largely focused on one rural community, the findings cannot be applied to the entire country. Furthermore, the study did not look into the underlying causes of the community's high frequency of NCDs, which would have provided further insight into the issue.

(Morton's) study "Climate Change and Food Security in the Caribbean" explores the potential impact of climate change on food security in the Caribbean region. According to the author, climate change might have major implications for food production and security in the region, particularly in tiny island developing countries like those in the Caribbean. The essay examines how rising temperatures, shifting rainfall patterns, and extreme weather events may impact agriculture, animals, and fisheries. This article is relevant to the issue because it explores the potential impact of climate change on food security in Trinidad and Tobago, a small Caribbean Island developing state. The author examines the challenges that climate change poses to agriculture in the region and suggests adaption strategies. The source is published in a well-known peer-reviewed journal, providing credibility to the offered study. The essay, on the other hand, is exceedingly brief and does not provide a full assessment of the issue. Additional

research investigating the effects of climate change on food security in Trinidad and Tobago would be beneficial to supplement this source.

All these relevant literatures have highlighted where food security lies with Trinidad and Tobago and by extension the Caribbean giving a greater understanding.

CHAPTER TWO- Results

A random sample of 48 respondents in Trinidad and Tobago were used to better understand where individual believe they are at as it relates to food security. Here is where various perspectives are seen and are acknowledged.

Most individuals were not aware of what was food security before the questionnaire. (See fig. 1)

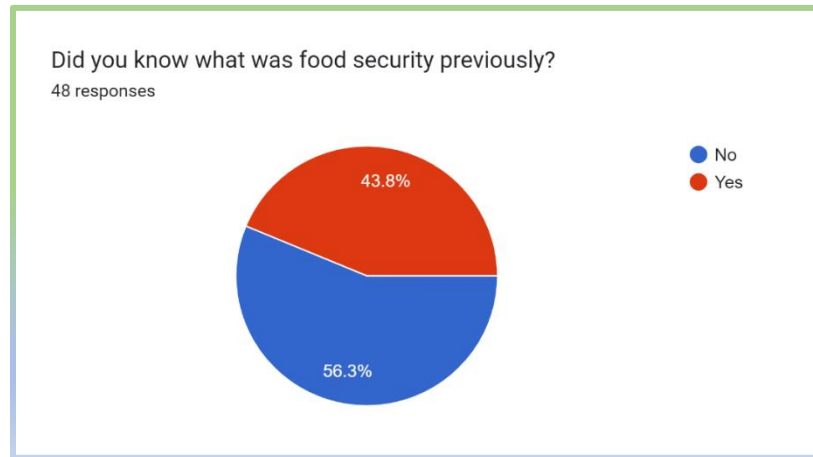


Figure 1: Graph from Nerissa Charles showing the percentage of individuals who knew what food security was before the questionnaire.

Most individuals considered themselves to food secure. (See fig 2.)

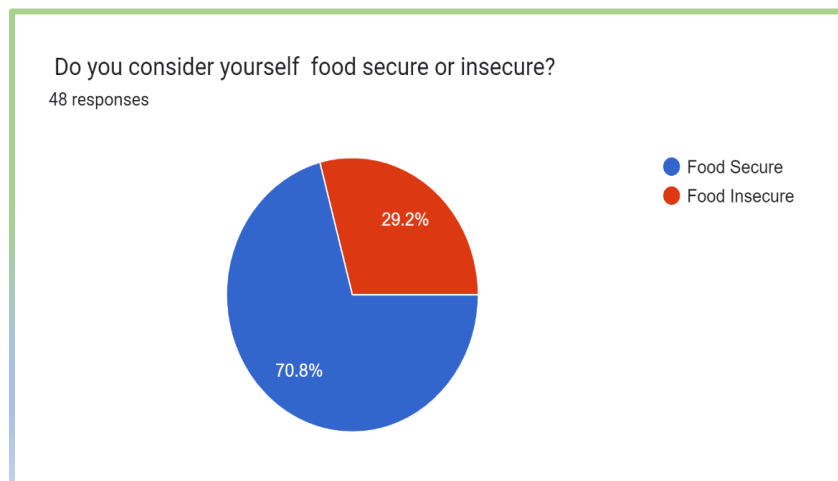


Figure 2: Graph from Nerissa Charles questionnaire showing the percentage of individuals who consider themselves both food secure and insecure.

Most individuals have access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. (See fig. 3)

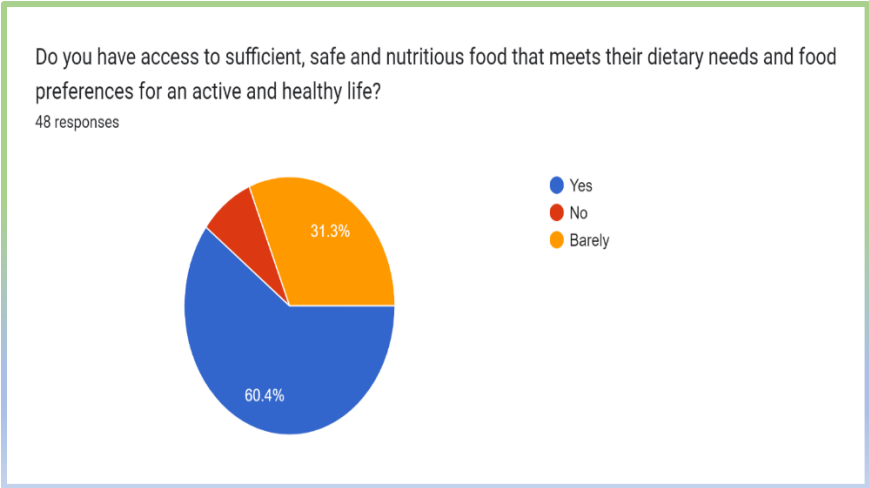
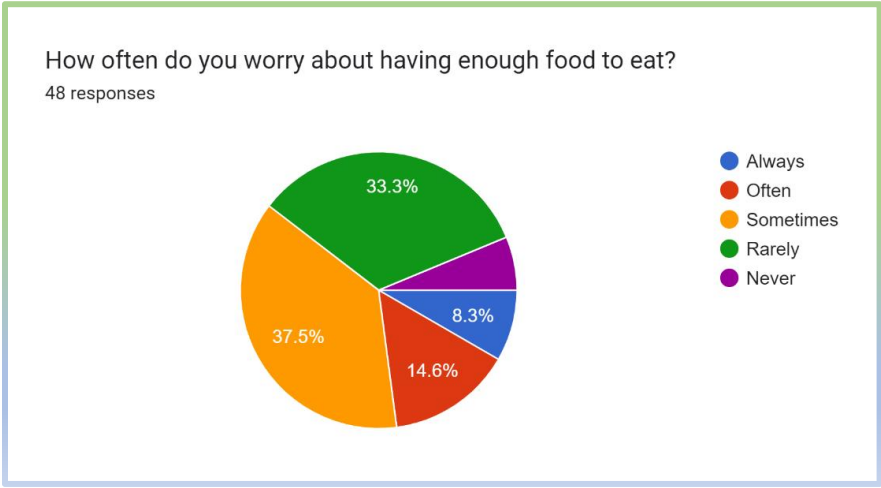


Figure 3: Graph from Nerissa Charles questionnaire showing the percentage of individuals who have access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Most individuals would only sometimes have enough food to eat. (See fig. 4)



Most individuals were not affected by the Covid-19 with regards to access to food with a close percentage of who were affected. (See fig. 6)

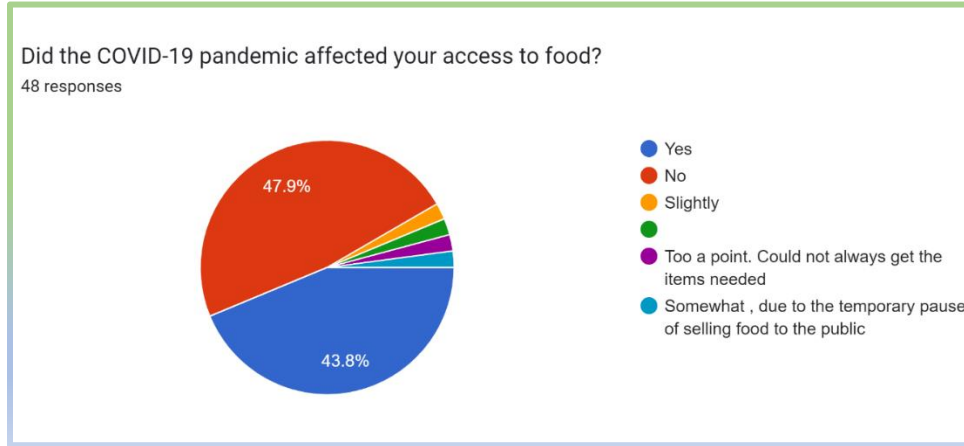


Figure 6: Graph from Nerissa Charles questionnaire showing the percentage of individuals who the COVID-19 pandemic affected your access to food.

Most individuals had to skip meals or eat less because you couldn't afford to buy food. (See fig. 7)

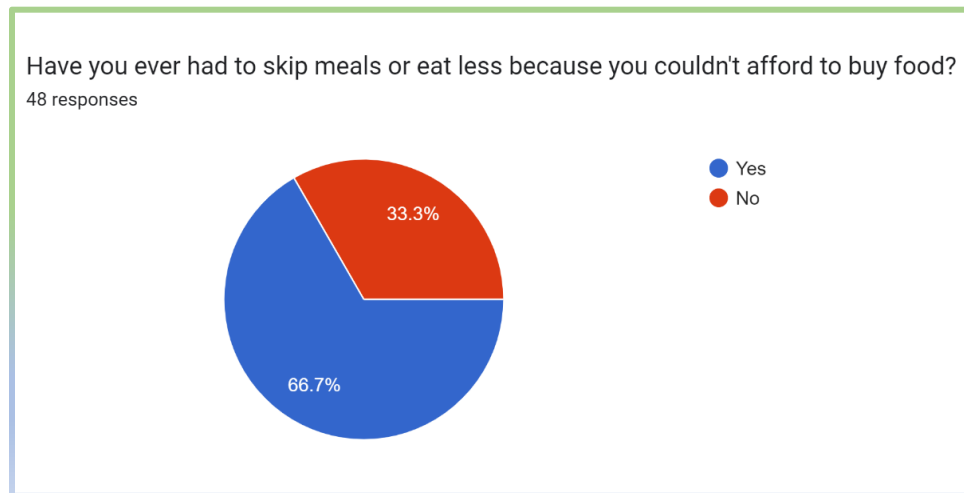


Figure 7: Graph from Nerissa Charles questionnaire showing the percentage of individuals who have had to skip meals or eat less because you couldn't afford to buy food.

Most individuals have never utilized government assistance programs like food cards to help with food costs. (See fig. 8)

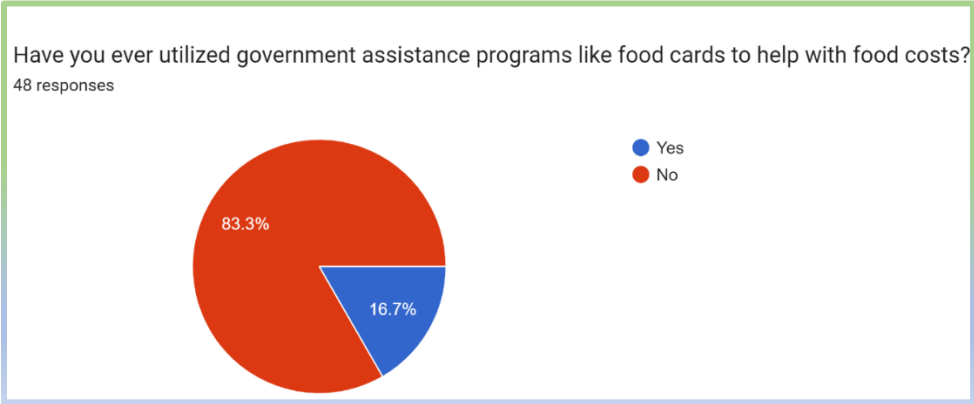


Figure 8: Graph from Nerissa Charles questionnaire showing the percentage of individuals who have never utilized government assistance programs like food cards to help with food costs.

Most individuals do believe that climate change have an impact on the food we eat. (See fig. 9)

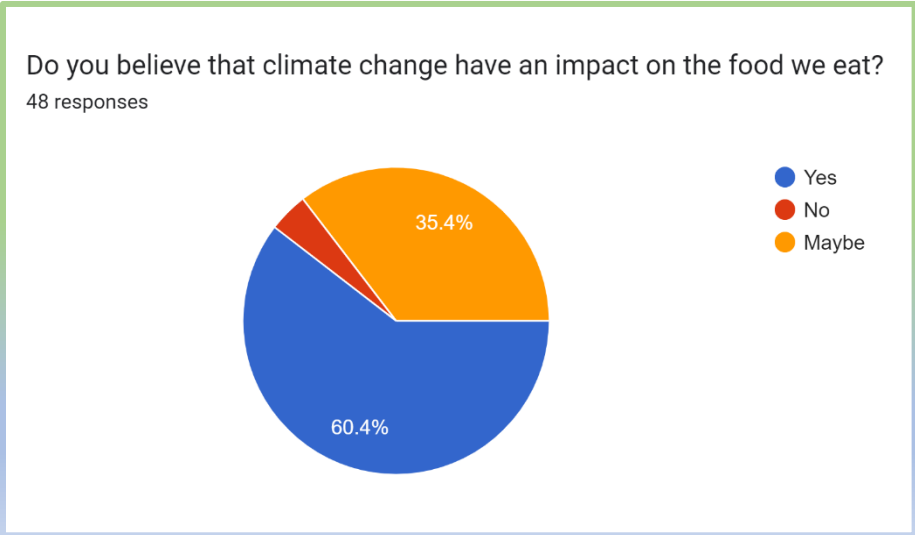


Figure 9: Graph from Nerissa Charles questionnaire showing the percentage of individuals who believe that climate change has an impact on the food we eat.

Table 2: See appendix for table.

Table 2 from Nerissa Charles questionnaire showing participants responses for the question of What do you think can be done at the local, state, or national level to address food insecurity?

Most individuals believe that agriculture and a reduction in prices would aid in food security.

(See fig. 10)



Figure 10: Word cloud from Nerissa Charles questionnaire showing the percentage of individuals who gave suggestions on what can be done at the local, state, or national level to address food insecurity.

Table 3: See Appendix for Table.

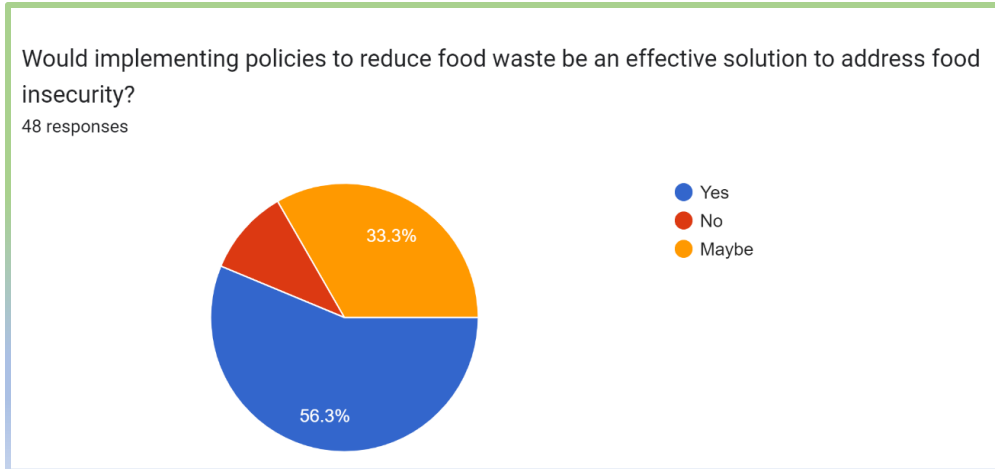


Figure 12: Graph from Nerissa Charles questionnaire showing the percentage of individuals who think implementing policies to reduce food waste be an effective solution to address food insecurity.

Most individuals found that schools provide free breakfast and lunch to all students to address food insecurity. (See fig. 13)

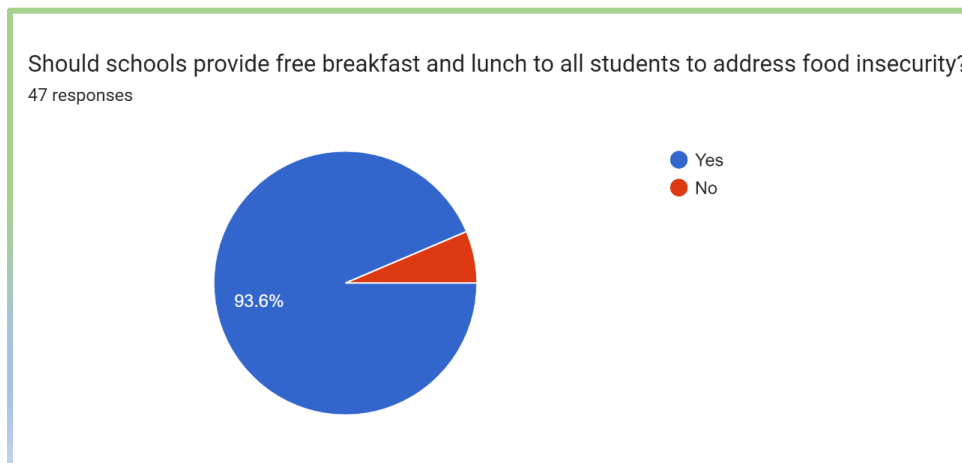


Figure 13: Graph from Nerissa Charles questionnaire showing the percentage of individuals who believe that schools provide free breakfast and lunch to all students to address food insecurity.

Most individuals found that healthier food should be more accessible in their area. (See fig. 14)

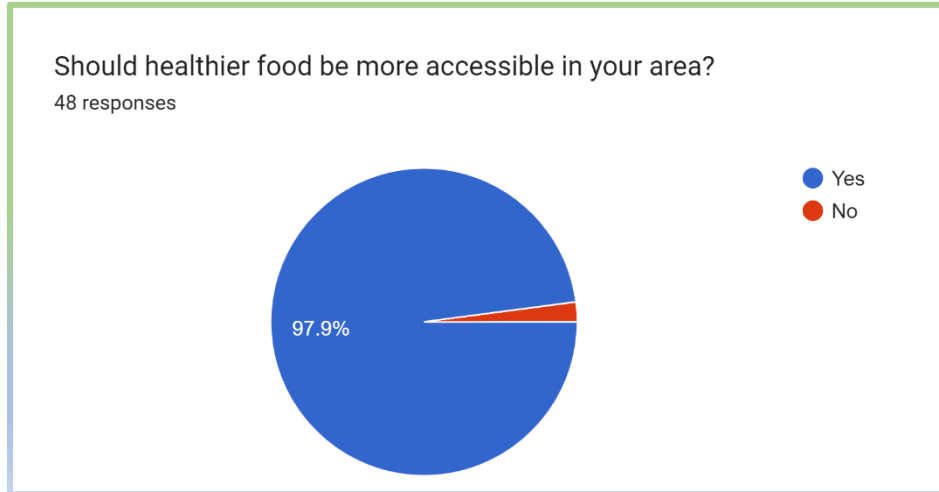


Figure 14: Graph from Nerissa Charles questionnaire showing the percentage of individuals who think healthier foods should be more accessible in their area.

Most individuals who responded were from the south region of Trinidad.

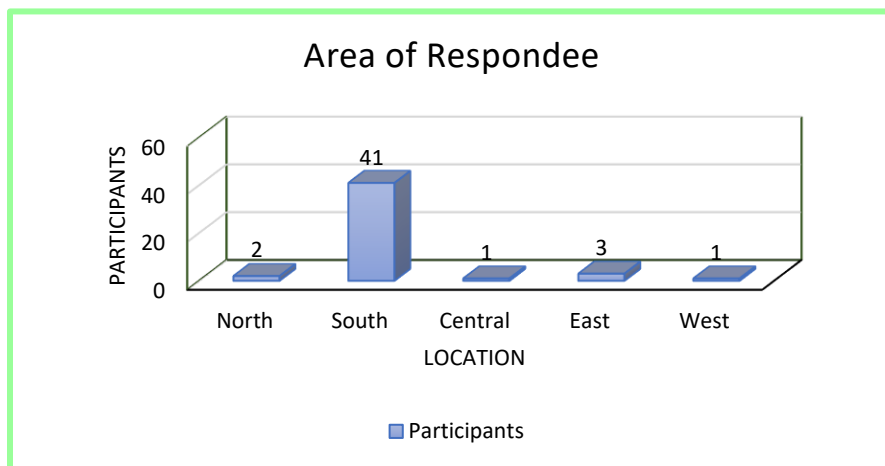


Figure 15: Graph from Nerissa Charles questionnaire showing the various areas of responder's location in Trinidad.

CHAPTER THREE- Discussion

Trinidad and Tobago, a twin-island republic in the southern Caribbean, and between 2012 and 2022, the country experienced several challenges, including the COVID-19 pandemic, economic insecurity, and climate change. Despite being a net food importer, Trinidad and Tobago has made significant progress in recent years to enhance its food security. The government has implemented several policies and initiatives to increase agricultural productivity and improve food delivery networks. However, the country is still dealing with a few difficulties, including low agricultural productivity, limited access to land, and reliance on imported food. Here, this discussion would showcase things such as economic, social, and environmental factors, in addition to emphasizing the many measures that have been tried to address these concerns. The goal of this is to provide an overview of individuals perspective of Trinidad and Tobago's food security condition and to identify possible future growth areas. Following the administration of a questionnaire to 48 people, several difficulties were emphasized for a more in-depth view, as well as ideas for solutions that were addressed throughout.

To begin, the questionnaire was used to better understand the condition of food security in Trinidad and Tobago. Firstly, it was based on whether participants recognized what food security was before interacting with the questionnaire, as seen in Fig. 1. In this survey, 56.3% of participants said they had no idea what food security was, while 43.8% said they did. This revealed that even though most people eat every day, more than half were unaware that food security is a major issue both globally and in their local nation. This stresses the importance of allocating greater resources to food education and food security to counteract it. By focusing on seminars, advertisements, and outreach programs, many individuals may be made more aware of

the issues that are faced within the country of Trinidad and Tobago as it relates to food. In Fig. 2, to ensure individuals knew what their status was as it relates to food security, the question was asked where they saw themselves. 70.8% of the participants saw themselves as food secure while the other 29.2% were insecure. This implies that most individuals see themselves as relatively food secure. Although it is positive that most called themselves food secure, which is a step ahead for those who participated as it relates to food, it must be noted that a true understanding must have been established to know which category to choose based on personal characteristics. Here, education on the topic would be utilized as well. In Fig. 3, it was important to use the definition to ask the participants if they have access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life to see if they truly knew what it meant to be food secure or insecure. 60.4% said a strong yes while 31.3% stated barely and another 8.3% stated no. These statistics indicated that most had a basic understanding of what it truly meant to be food secure ruling out the doubt from Fig. 2. These numbers also showcased that most individuals had access to food making them secure while others were barely or not having enough access to food making them insecure. As shown in Figure 4, the question was whether it was enough to have access to food, or if it was necessary to have enough food to sustain a healthy diet. 37% of respondents stated that they sometimes had enough food, while another 33.3% rarely had enough to eat. This indicated that while most respondents considered themselves food secure, there was still some level of food insecurity, as having enough food to fit dietary needs was an issue. This may be due to high food costs, which may prevent individuals from being able to purchase the food they need. To combat this issue, investing in community and homegrown gardens could help provide additional food for individuals. This would allow communities to access more food without relying solely on large supermarkets.

Furthermore, this investment in agriculture could also aid in improving food security. As shown in Table 1 and Figure 5, the question asked during the research was about the challenges related to the cost of food and its impact on maintaining a healthy diet. The open-ended question captured various opinions, and the highlighted keywords included "too expensive," "negatively impacted," "affected drastically," "alternated to unhealthier foods," and "very challenging." This indicates that the cost of food is a major issue in Trinidad and Tobago, and the underlying issues that caused the increase in food costs must be addressed. This can be achieved by reducing the reliance on imported food and investing in the country or the Caribbean's own agriculture sector. This would enable people to buy healthier foods at a lower cost and reduce their reliance on unhealthier, cheaper foods that may cause non-communicable diseases later in life.

Moreover, Figure 6 highlights the discussion of whether COVID-19 affected individuals' ability to access food. 47.9% of respondents stated that the pandemic did not affect their ability to access food, while 43.8% stated that they were affected, and others were neutral in their response. These statistics demonstrate that half of the participants were affected, while the other half were not. This implies that the reliance on imported food slowed down the process of individuals accessing food. If most or all food were created within the Caribbean and Trinidad and Tobago, the number of those affected would have been lower. This also stresses the importance of the country manufacturing its food to sustain itself. Figure 7 asks more questions to gauge the level of food insecurity among participants. In this question, 66.7% stated that they had to skip meals or eat less due to not being able to buy food, while another 33.3% did not have to. This indicates that due to the various factors highlighted in the research, such as the high cost of food, individuals had to restrict when they would eat their next meal, displaying a level of food insecurity. Regarding solutions, an open-ended format was used to better understand what

other individuals think could be done to address food insecurity. The main words and phrases highlighted in Figure 10 were to invest in agriculture and home gardens, increase affordable foods, and provide more funding to local farmers. Responses like these indicated that participants have a good understanding of the solutions that could be made. If all these recommendations and solutions are discussed and considered, each community would be able to do its part in becoming food secure, as most are aware of what is needed to be done. In Figure 11, an open-ended question was asked to gain a solution on whether increasing the availability of fresh and healthy food options in "underserved" areas would help to address food insecurity. The purpose of this question was to gain different perspectives, and most participants answered yes. However, two statements were highlighted: "No area is undeserved" and "Everyone deserves food," indicating that most individuals believe that food should be available to everyone, regardless of their background. This displays that most participants of the survey have hope for food security. In Figure 12, a solution was proposed, with 56.3% of respondents agreeing that more stringent policies regarding food should be put in place as an effective solution. This is a great consideration for addressing food insecurity. In Figure 13, respondents were asked about the initiative of free breakfast and lunch in Trinidad and Tobago, and 93.6% agreed that this would address food security. This shows that many believe this initiative is needed. In Figure 14, 97.9% of respondents agreed that healthier foods should be more accessible in their area of residence. This implies that better community initiatives should be put in place as it relates to healthier foods and agriculture to address the concerns of most of the participants. Finally, it is important to note the origin of the respondents, as different areas may have different views. In Figure 15, most responders were from the Southern part of Trinidad, indicating that several

initiatives should be placed to eradicate food insecurity and spread the word of ways to become food secure.

To add, various restrictions were observed throughout the investigation, which may have influenced the outcomes. These constraints include data availability, sample size, time constraints, and data subjectivity. These constraints must be acknowledged in order to improve the validity and reliability of the results. To address these restrictions, a range of data sources, including collaboration with local groups and experts to acquire access to relevant information and resources, should have been utilised. Ensuring that the sample is representative of the population by choosing an appropriate sample size, as well as detecting and dealing with data subjectivity using appropriate analytic procedures, will assist enhance the study's outcomes.

CONCLUSION

In conclusion, ensuring food security is essential for the development and prosperity of every nation, but Trinidad and Tobago, like other Small Island Developing States, has a variety of challenges in this regard. The nation's reliance on food imports, as well as external problems like climate change and rising food prices, endanger food security. Initiatives that support fair access to food and sustainable agriculture, however, have the potential to improve the situation. This study emphasizes the need of altering Caribbean residents' perceptions of food and food security as well as increasing awareness of the problems faced by Small Island Developing States. To secure food security in Trinidad and Tobago and the Caribbean for future generations, it is crucial to invest in long-term solutions. The parameters of the analysis are based on data from the past 10 years, taking into consideration food security changes in Trinidad and Tobago and the Caribbean, such as national policy execution and the impact of the COVID-19 epidemic. The literature review conducted in this study has provided extensive research on the topic of food security in Trinidad and Tobago and the Caribbean. The review has highlighted the challenges faced by the region in achieving food security, including issues related to climate change, agricultural inefficiencies, and economic barriers. The review has also shown how crucial it is to achieve food security since it not only guarantees that there is an adequate supply of healthy food but also has a big influence on economic development, poverty reduction, and international security and stability. The literature analysis has also highlighted the necessity for long-term solutions to the Caribbean food security problem, notably in Trinidad and Tobago. It has offered illustrations of effective methods for ensuring food security, such as the Finnish model, and recommended tactics that may be put into practice, such as increasing investment in sustainable

agriculture and laws that support fair access to food. Given that many people are ignorant of the problems the nation faces, the questionnaire revealed the necessity for more funding to be dedicated to food security and education. In Trinidad and Tobago, the high cost of food forces many individuals to choose less healthy, less expensive diets, which can lead to non-communicable illnesses later in life. Half of the participants' access to food was impacted by COVID-19, showing how crucial it is for the nation to produce its own food to survive. To increase food security, decrease dependency on imported food, and offer more food for individuals, it may be beneficial to invest in community and family gardens. To guarantee that people have access to enough, safe, and nutritious food that satisfies their dietary needs and preferences for an active and healthy life, the nation must address the root causes of the increase in food prices. This study has been successful in identifying and understanding the causes of food insecurity, evaluating its effects on people and communities, developing, and utilizing interventions to increase food security, looking at its connections to other global issues, and investigating sustainable means of achieving food security. The importance of this study rests in its contribution to a deeper comprehension of Trinidad and Tobago's food security issues, as well as in its ability to increase public awareness and guide future studies in this field. The report also emphasized that food security is about tackling fundamental concerns that harm everyone if they are not addressed. We expect that by doing this research, we will be able to bridge the gap in understanding food insecurity in the Caribbean and contribute to the development of long-term solutions to this worldwide problem. This research adds to a better understanding of food security and its role in attaining sustainable development by shining light on the intricacies of the food system and the issues encountered by communities. Finally, tackling food insecurity needs a collaborative effort from all stakeholders, including governments, non-governmental

organizations (NGOs), farmers, and consumers. We can strive towards a future where everyone has access to safe, nutritious, and culturally acceptable food, and where food security is no longer a cause of existential concern for Caribbean people via sustained research and action.

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APPENDIX A

Attached below is the questionnaire that was used for the analysis of individuals in Trinidad and Tobago as it relates to Food Security: Challenges and Solutions.

Food Security Challenges and Solutions

Food security (is) a situation that exists when all people, always, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Thesis Research! Please answer all to the best of your ability and THANK YOU!

1. Did you know what was food security previously?

Mark only one oval.

No

Yes

2. Do you consider yourself food secure or insecure?

Mark only one oval.

Food Secure

Food Insecure

3. Do you have access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life?

Mark only one oval.

Yes

No

Barely

4. How often do you worry about having enough food to eat?

Mark only one oval.

Always

- Often
- Sometimes
- Rarely
- Never

5.

How does the cost of food impact your ability to maintain a healthy diet?

6. Did the COVID-19 pandemic affected your access to food?

Mark only one oval.

- Yes
- No
- Other:

7. Have you ever had to skip meals or eat less because you couldn't afford to buy food?

Mark only one oval.

- Yes
- No

8. Have you ever utilized government assistance programs like food cards to help with food costs?

Mark only one oval.

- Yes
-

No

9. Do you believe that climate change have an impact on the food we eat?

Mark only one oval.

- Yes
 No
 Maybe

10. What do you think can be done at the local, state, or national level to address food insecurity?

Check all that apply.

Option 1

11. Do you think that increasing the availability of fresh and healthy food options in 'underserved' areas would help to address food insecurity? Why or why not?

Check all that apply.

Option 1

12. Would implementing policies to reduce food waste be an effective solution to address food insecurity?

Mark only one oval.

- Yes
 No
 Maybe

13. Should schools provide free breakfast and lunch to all students to address food insecurity?

Mark only one oval.

- Yes
- No

14. Should healthier food be more accessible in your area?

Mark only one oval.

- Yes
- No

15. What area are you from in Trinidad/ Tobago?

APPENDIX B

Attached are the views placed by the respondents from the questionnaire that were analysed within the results.

Table 1:

How does the cost of food impact your ability to maintain a healthy diet?

Participants	Responses
	It's expensive
	I don't have one
	Yes it does
	There is a negative impact due to food costs being so high
	Some foods are too expensive in order to maintain a healthy and balanced lifestyle.
	It makes it harder
	It very challenging coming from a household with one stream of income. There are times when you can only afford staples and barely any vegetables and fruits.
	Fast food is cheaper than groceries now
	I am able to eat however i cannot maintain the proper diet balance.
	In this economy the prices for food are increasing each and everyday which makes it hard to keep up or maintain a healthy diet therefore we would rather buy fast food to make it easy on us.
	"Healthy" food prices vary especially vegetables and based on the budget I have I may be inclined to acquire an "unhealthy" food choice like a gyro from a street vender or royal castle.
	It's expensive
	The higher food prices go, the less likely it is to afford all the components of a healthy diet
	Severely
	Because of the high prices of some of the vegetables and fruits in local markets this

	would sometimes result in me reducing the amount of times I buy these product
	It sometimes makes it difficult to purchase some foods because it's too expensive
	Buy less healthy foods due to the cost.
	Challenging
	Because of alternatives alternatives may not always be effective
	Very expensive
	Not able to purchase
	I make wise, financial and economical purchasing decisions with regards to my diet. So I am not impacted
	Highly affected
	I cannot afford it
	Healthy foods are to costly, therefore it would allow the average person as myself to purchase it
	When the healthier foods are expensive you tend to eat unhealthy
	Being unemployed and trying to eat healthy is a great challenge because the few healthy items that I do have access to is very expensive.
	Insufficient funds. Price of item/s too expensive
	Negatively I don't eat as often sometimes
	It is really expensive to maintain a healthy diet
	Expensive
	Healthy food prices are very high.
	I prioritize to ensure food bill is secured above anything else.
	Draws you more to the junks
	Drastically
	It has a negative impact on my diet as I am unable to purchase healthy food at times as it is very expensive to eat healthy.
	Limits what you can and cannot buy
	It impacts my ability to maintain a healthy diet because of how expensive things are getting, and that makes me go with the cheaper option that mite not be as healthy as the expensive one.
	A lot

	A lot
	It affects it to a great extent since the prices may be very high at times and I'd tend to purchase something cheaper that is oftentimes more on the unhealthy side.
	Yes
	High cost restricts access to healthier items
	Most of the healthier foods are very expensive and mostly imported and with the rise of food prices it's difficult so resorting to cheaper unhealthy food is easier
	High cost of living has made it difficult to maintain a healthy lifestyle. Due to high prices we are unable to purchase the necessary food to maintain a healthy diet.

Table 2

What do you think can be done at the local, state, or national level to address food insecurity?

Participants	Responses
	Nothing
	Nothing
	Provide grants
	Have more food drives
	Give out food rations
	Drop in product prices and food assistance to those who can't afford
	Addressing poverty: Food insecurity is often linked to poverty, so addressing poverty can be an important step in reducing food insecurity. Governments can implement policies that support economic growth and job creation, and increase access to affordable housing and healthcare.
	Reduce cost, grow things locally, increase salaries
	Educate people to grow and maintain there own food in communities
	Dropping prices
	Stop raises food prices
	Have monthly food drives to provide those in dire need and the person/s should be selfless and not biased and (in terms of them keeping certain foods for themselves and their friends)

	Invest in agriculture
	At the national level, reducing inflation can help make food more accessible and affordable
	I think that the government should promote local agriculture to reduce food import bills, as well as encourage citizens to grow their own food by means of a home garden to promote household food security.
	There can be more local food drives to help families that are in need
	Give persons more access to government assistance programs or do food drives in areas
	Investment in food and agriculture
	Provide more incentives in the agriculture sector
	Better policy implementation
	Most home gardens
	Unsure
	Invest more in local farming
	They have to charge one affordable price across the country
	Drop food prices
	Advertise on the subject
	Ensure proper handling of food at all times. Code ethics must be adhered to. Those who refuse to follow proper protocol must be severely dealt with - imprisonment or fine or both.
	The cost of food prices can be lowered in order for persons to have access to afford food.
	Fundraiser
	Plant more!
	I'm not sure
	I think that the government can put measures in place so that healthy food prices decrease and unhealthy food prices remain at a affordable level so that we can always eat healthy.
	Better funding to the local farmers to produce local food products.
	Implement home gardens
	More agriculture and farming done locally
	Identify ways in which prices can be reduced/figuring out the lowest buying

	avenue from suppliers so food wouldn't be as expensive
	Continue to build the local food manufacturing sector
	Greater promotion of farmers market, encourage supermarkets etc to lower costs
	Assist farmers financial so more local organic foods can be produced which should be sold cheaper so consumers can afford and purchase more goods and have a healthier lifestyle
	I believe that more funding should be placed in the agricultural sector so we can produce our own food
	They should lower prices to allow people to afford more food.

Table 3

Do you think that increasing the availability of fresh and healthy food options in 'underserved' areas would help to address food insecurity? Why or why not?

Participants	Responses
11 individuals	Yes
	Yes because they need it
	It can assist if the food is both available and affordable
	It depends on the cost of the persons on the area can afford it
	Not necessarily. They may be available, but it can be a bit costly for some.
	Yes, then maybe people who live in those areas can not only function better as a community but also they can improve themselves in order to make a wider impact on society.
	No. Availability does not equate to accessibility.
	No because it will be expensive and persons won't be able to afford it
	No. Giving to those in need cant be seen as insecurity
	No because some people will still not be able to afford it
	Firstly, no area is undeserved. Secondly, yes ,

	however if the area does not appreciate it , it should be discontinued and provided for an area in more need of healthy options.
	I believe it would as people would now see the healthy options as available instead of a once in awhile delicacy.
	Yes to due to the fact that it will be easier to obtain than having Togo the distance out of there area.
	Yes, because then diseases that are linked to not geing food secure would be reduced.
	Yes, everyone is deserving of food
	Alot of citizens can have access to food quality and security
	It definitely will because those people in underserved areas are the ones in need
	Yes it will as persons will have access to healthier options whereas they had little to none before.
	Yes because farms
	Yes it would increase but if it's not affordable the majority of the population in that area would not be able to afford
	It may & may not, increasing the availability is one thing but at what cost
	Yes because they are the most affevted group
	Yes, since people there won't have access to much sustinence than others located in deserved areas.
	No, because the poorer members of the population would not be able to afford
	Yes because everyone deserves food.
	Yes because then people will now have the access to more nutritious foods
	Yes it will provide a nutritional option to them
	Yes. When there is more access more individuals will have the opportunity to become food insecure and even if they wouldn't be able to afford it initially, knowing that it's the healthier option would help them identify ways in which they would be able to purchase it
	Not really because if someone cannot afford to purchase the item, it still is going to be useless to that individual.

	No, cause fresh and healthy is expensive
	No
	Yes because everyone would be impacted.
	Yes because it spreads awareness
	I don't think it would help because some people are barely able to have the basic necessity for their home due to job loss during the pandemic. Some people also has a low income salary with large families to feed.
	Yes, increasing the availability of fresh and healthy food options in underserved areas can help to address food insecurity. This is because many people who are food insecure live in areas known as food deserts, where access to healthy and affordable food is limited.