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The Migratory Phenomenon in Latin America and its impact on Food Security

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Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the variables Migration, Food Security and Latin America. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the period 2017-2022 by Latin American institutions, achieving the identification of 65 publications. The information provided by this platform was organized through graphs and figures, categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors on the proposed topic is referenced through a qualitative analysis. Among the main findings made through this research, it is found that Brazil, with 27 publications, was the Latin American country with the highest scientific production registered in the name of authors affiliated with institutions of that nation. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material related to the study of Food Security conditioned to the migratory phenomenon in Latin America was Environmental Sciences with 24 published documents, and the most used Publication Type during the period indicated above were Journal Articles with 71% of the total scientific production.

Keywords: *Food Security, Migratory Phenomena, Latin America.*

1. Introduction

Since the beginning of this century, Latin America has become one of the most significant geographical continents, based on the intricate and dynamic aspects of its socioeconomic factors, public policies and the environment. Based on this premise of the changes in these economies, a phenomenon known as the migratory effect is highlighted, which is

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characterized to transcend national borders, changes communities and this effect brings with it profound implications for the food security landscape of this geographical region. In this context, we seek to point out the impact of the migratory effect in Latin America and how it generates long-term consequences on food security.

One of the characteristics that has long been the focus of attention in migratory patterns in this region is how inhabitants migrate from the countryside to the city or seek to improve their socioeconomic conditions in international countries. These patterns are reflected by the factors of poverty and inequality faced by each country, the current political instability and environmental impacts, which drive people to move to other cities in order to improve their quality of life

The nexus between migration and food security stems from the close relationship between these two variables, which reflects that for both communities of origin and destination. Likewise, in the areas of origin, the phenomenon of migration promotes the abandonment of the agricultural sector and other agricultural sectors, which would reflect for the economies of this region a substantial decrease in food production, which would cause contradictory effects and cause vulnerability to food security. The opposite is true in the destination areas, as this phenomenon represents an influx of people, which would have negative effects on local production systems, since resources would be deficient and could not counteract the demand for food present due to the overpopulation of the destination area, which could have a harmful effect on food insecurity for both migrants and local personnel.

Finally, as communities face the consequences of environmental degradation, migration emerges as a coping mechanism, further intertwining environmental factors with the nexus between migration and food security. Successfully addressing the complexities of migration and its impact on food security is not an easy task for Latin America, which requires the intervention of comprehensive policies to improve the quality of life in the region and thereby mitigate the effects of migration. These comprehensive policies would require the leaders of each Latin American country to implement development policies that balance the need to manage migration with efforts to transform agricultural resilience in the areas most affected by this phenomenon. The union of governments and government entities should consider mitigating these effects as a priority and developing new inclusive policies that are based on the interconnection of economies and ecosystems.

The effects of migration and the profound implications of ensuring food security in Latin America is not an easy task to carry out, it is important to know the different causes and consequences of these two variables, it is challenging to recognize the effects that this holistic approach adopts, therefore it is of vital importance to safeguard the well-being of migratory communities and ensure the internal food security of each region. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables Migration, Food Security and Latin America, as well. Such as the description of the position of certain authors affiliated with institutions, during the period between 2017 and 2022.

2. General Objective

To analyze, from a bibliometric and bibliographic perspective, the preparation and publication of research papers in high-impact journals indexed in the Scopus database on the variables Migration, Food Security and Latin America during the period 2017-2022 by Latin American institutions.

3. Methodology

This article is carried out through a research with a mixed orientation that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study of the variables Migration, Food Security and Latin America. On the other hand, examples of some research works published in the area of study mentioned above are analyzed from a qualitative perspective, based on a bibliographic approach that allows describing the position of different authors on the proposed topic. It is important to note that the entire search was carried out through Scopus, managing to establish the parameters referenced in Figure 1.

3.1. Methodological design

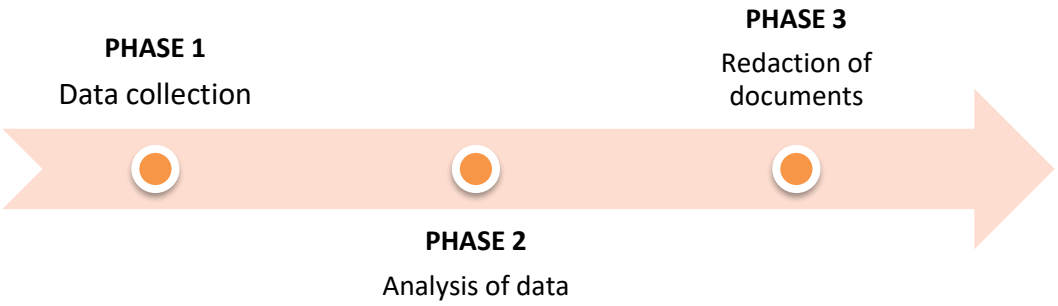

Figure 1. Methodological design

Source: Authors' own creation

3.1.1 Phase 1: Data collection

Data collection was carried out from the Search tool on the Scopus website, where 65 publications were obtained from the following filters:

TITLE-ABS-KEY (migration, AND food AND security) AND PUBYEAR > 2016 AND PUBYEAR < 2023 AND (LIMIT-TO (AFFILCOUNTRY , "Brazil") OR LIMIT-TO (AFFILCOUNTRY , "Mexico") OR LIMIT-TO (AFFILCOUNTRY , "Colombia") OR LIMIT-TO (AFFILCOUNTRY , "Chile") OR LIMIT-TO (AFFILCOUNTRY , "Peru") OR LIMIT-TO (AFFILCOUNTRY , "Ecuador") OR LIMIT-TO (AFFILCOUNTRY , "Costa Rica") OR LIMIT-TO (AFFILCOUNTRY , "Paraguay") OR LIMIT-TO (AFFILCOUNTRY , "Nicaragua") OR LIMIT-TO (AFFILCOUNTRY , "Honduras") OR LIMIT-TO (AFFILCOUNTRY , "Bolivia") OR LIMIT-TO (AFFILCOUNTRY , "Venezuela") OR LIMIT-TO (AFFILCOUNTRY , "Panama") OR LIMIT-TO (AFFILCOUNTRY , "Argentina")

- Published documents whose study variables are related to the study of the variables Migration, Food Security and Latin America.
- Limited to the period 2017-2022.
- Limited to Latin American countries.
- Without distinction of area of knowledge.
- No distinction of type of publication.

3.1.2 Phase 2: Construction of analytical material

The information collected in Scopus during the previous phase is organized and then classified by graphs, figures and tables as follows:

- Co-occurrence of words.
- Year of publication
- Country of origin of the publication.
- Area of knowledge.
- Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, the results of the previous results are analysed, resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. Results

4.1 Co-occurrence of words

Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.

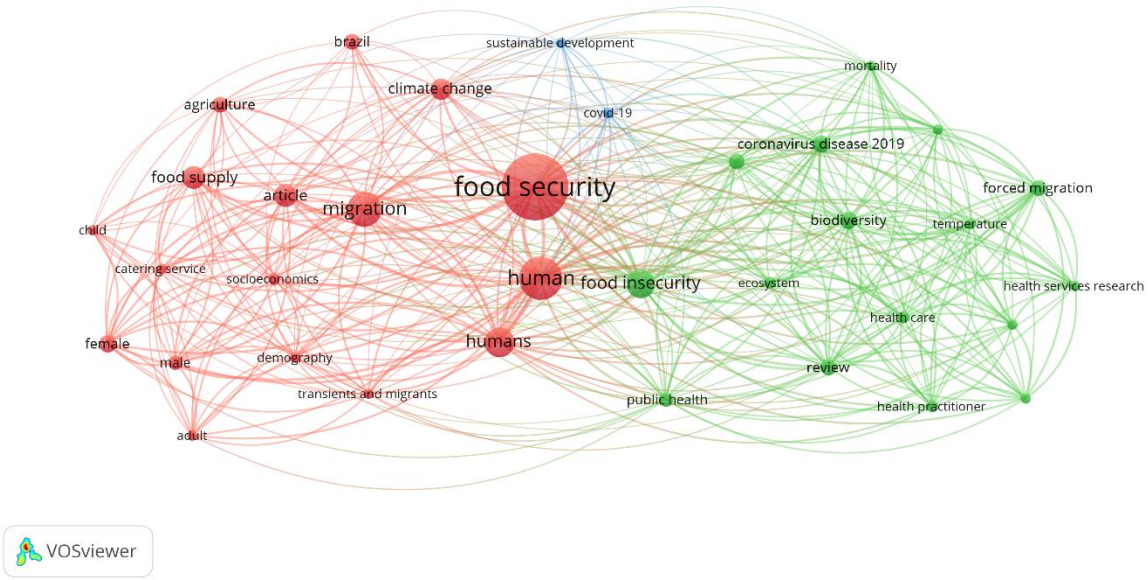

Figure 2. Co-occurrence of words

Source: Authors' own elaboration (2023); based on data exported from Scopus.

Food safety was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Migration is among the most frequently used variables, associated with variables such as Innovation, Agriculture, Food Insecurity, Environmental Monitoring, Sustainable Development, Treatment of Immigrants, Biomass, Latin America. Latin America, despite its rich agricultural diversity, faces persistent challenges in terms of food security. Poverty, economic inequality, and extreme weather events contribute to the vulnerability of communities, affecting their ability to ensure consistent and adequate access to nutritious food. This food insecurity, in turn, has a direct impact on the migratory decision-making of affected populations. Migration stands as a survival strategy for those who face limitations in accessing basic foodstuffs. Communities affected by food insecurity often see mobility as a way to escape scarcity and seek

opportunities that can improve their living conditions. This phenomenon reflects the close relationship between lack of food security and human mobility.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year of publication.

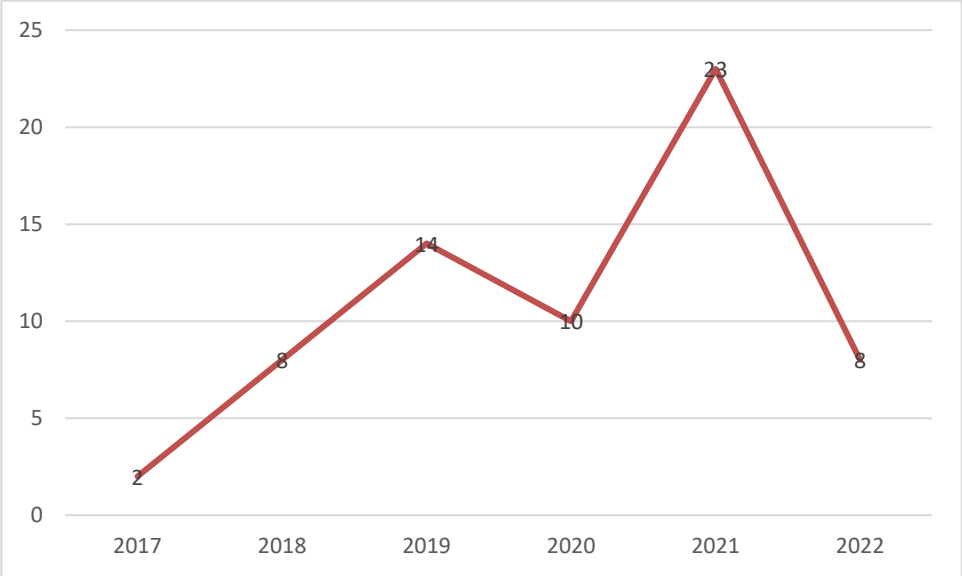

Figure 3. Distribution of scientific production by year of publication.

Source: Authors' own elaboration (2023); based on data exported from Scopus

Among the main characteristics evidenced through the distribution of scientific production by year of publication, the number of publications registered in Scopus was in 2021, reaching a total of 23 documents published in journals indexed on this platform. This can be explained by articles such as the one entitled "Fate of B Trichothecenes in Rice and Parboiling Process as a Mitigation Strategy" This study was designed to evaluate these two critical safety issues in the rice supply chain. First, the occurrence of DON and its acetylated derivatives, 3-ADON and 15-ADON, was evaluated in different subgroups of commercial rice. Subsequently, the migration dynamics of DON during parboiling were investigated in rice samples from lowland and upland cultivars. These two main objectives were designed to increase the understanding of the risk of rice contamination by trichothecenes and, subsequently, to enable the proposal of a mitigation strategy. The VA-MSPD trichothecene determination method proved to be reliable and efficient in assessing rice contamination, with recoveries between 73.4 and 117.4%. Approximately 43.3% of commercial samples, randomly obtained from the local market, tested positive for DON and/or 15-ADON with a contamination level below LOQ (0.50 µg.kg-1). The subgroups of brown rice and parboiled brown rice showed the highest incidence, 66.7% and 83.3%, respectively. During parboil migration studies, milder conditions in the gelatinization step decreased the migration of DON into the starchy endosperm.(Borba, 2021)

4.3 Distribution of scientific production by country of origin.

Figure 4 shows how the scientific production is distributed according to the nationality of the authors.

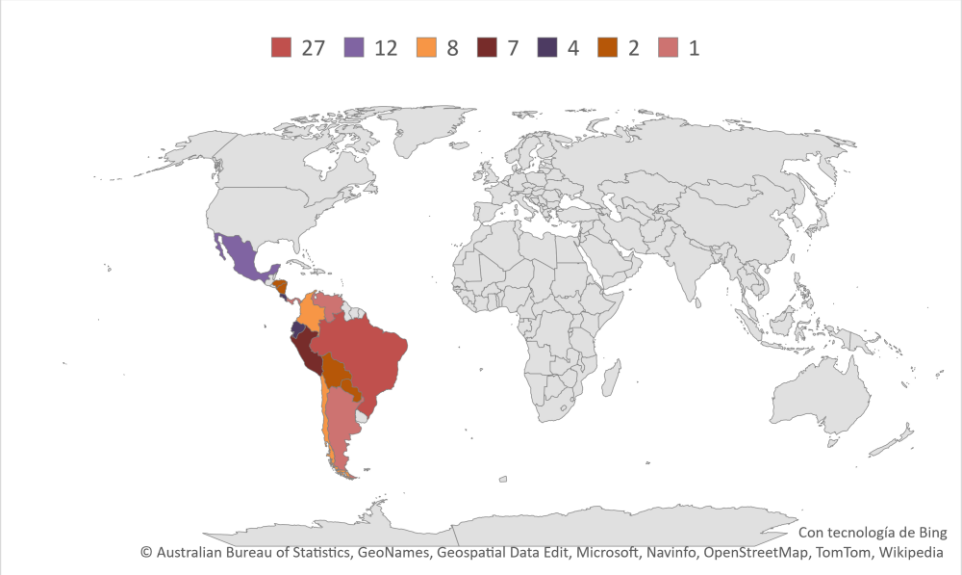

Figure 4. Distribution of scientific production by country of origin.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

Within the distribution of scientific production by country of origin, records from institutions were taken into account, establishing Brazil as the country of this community, with the highest number of publications indexed in Scopus during the period 2017-2022, with a total of 27 publications in total. In second place, Mexico with 12 scientific documents, and Colombia occupying the third place presenting to the scientific community, with a total of 8 documents among which is the article entitled "Food insecurity in pregnancies linked to state social enterprises in the city of Cali, 2-2019" The objective of this study is to describe the situation of food security and associated factors in pregnant women linked to state social enterprises in the city of Cali. Methods: A cross-sectional analytical study was conducted in 257 pregnant women. The data were analyzed with the Chi2 test or Fisher's test, in addition, the logistic regression model was applied to the variables with lower statistical significance at p 0.05. Results: 1.4% of pregnant women were food insecure, statistical tests showed that they did not live in their own home (0R 2.6: 95% CI 1.4-4.7), being displaced or migrating (OR 1.98; 1.1-3.9), not having a support network (OR 2.2; CI 1.4-3.3) and obesity (OR 4.15; CI 1.61-10, 69) are factors related to food insecurity, in addition to having one's own income even lower than the current legal minimum wage. a protective factor (OR 0.08; CI 0.02-0.36). Conclusions: Obesity, homelessness, being a migrant or displaced, and not having a support network are determinants associated with food insecurity in pregnant women(Albarracin, 2021)

4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the distribution of the elaboration of scientific publications based on the area of knowledge through which the different research methodologies are implemented.

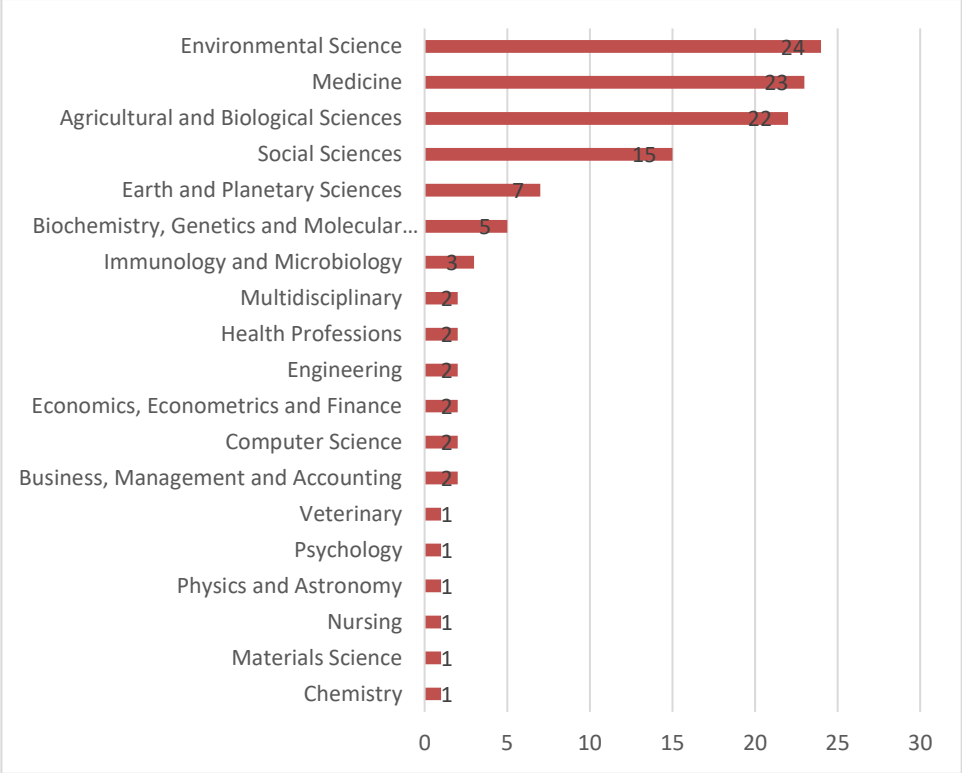

Figure 5. Distribution of scientific production by area of knowledge.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

Environmental Sciences was the area of knowledge with the highest number of publications registered in Scopus with a total of 24 documents that have been based on its Migration, Food Security and Latin America methodologies. In second place, Medicine with 23 articles and Biological Sciences and Agriculture in third place with 27. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by Environmental Sciences entitled "Analysis of complex political problems: a critical review of the literature" This study presents a cross-sectional bibliographic review of the different concepts developed to address these challenges, along with their origins, thematic focus, theoretical approaches and recent developments, with the aim of identifying their points of contact and critically analysing their strengths and research gaps. . The results are expected to support academic debate and provide a heuristic framework for research, while calling for further theorizing and the development of evaluation methods and case studies beyond the traditional geographic approach.(Milhorance, 2022)

4.5 Type of publication

In the following graph, you will see the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.

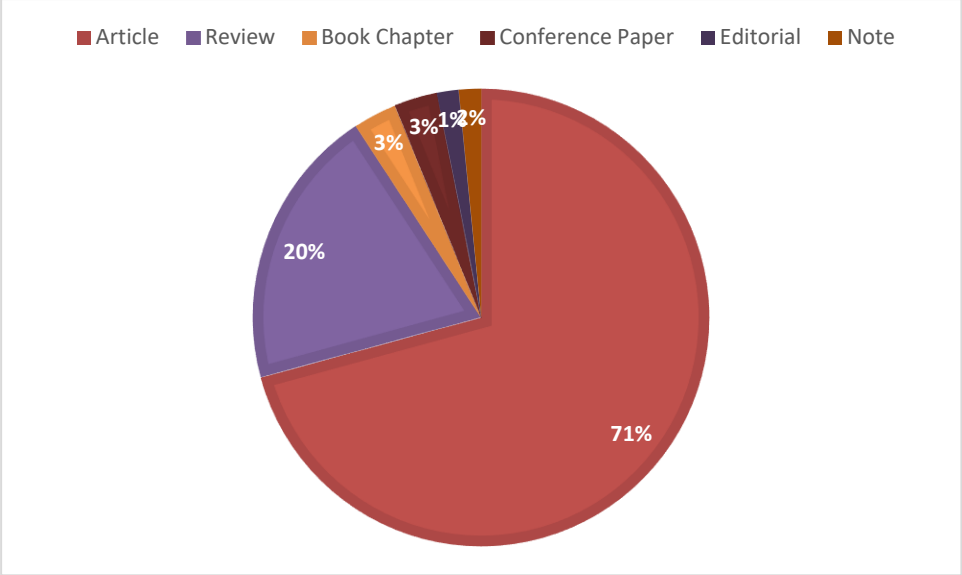

Figure 6. Type of publication.

Fountain: Authors' own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was the one entitled Journal Articles with 71% of the total production identified for analysis, followed by Journal with 20%. Chapter of the Book are part of this classification, representing 3% of the research papers published during the period 2017-2022, in journals indexed in Scopus. In this last category, the one entitled "Impacts of meander migration on Amazon riparian communities using Landsat time series and cloud computing" stands out In this study, the migration of river meanders was detected using Landsat 5-8 data from 1984 to 2020. A per-pixel Water Surface Change Detection (WSCDA) algorithm was developed to classify regions subject to erosion and sedimentation processes by applying temporal regressions to the water index, called the Modified Normalized Water Difference Index (mNDWI). The WSCDA ranked meander migration with omission and commission errors lower than 13.44% and 7.08%, respectively. The number of riparian communities was then mapped using high spatial resolution SPOT imagery. A total of 369 communities without road access were identified, most of which live in stable regions (58.8%), followed by areas of sedimentation (26.02%) and erosion (15.18%). In addition, we identified that larger communities (>20 houses) tend to live in more stable locations (70%) compared to smaller communities (1 to 10 houses) at 55.6%. A theoretical model was proposed to illustrate the main impacts of meandering migration on communities, related to flooding, mobility change and food security. This is the first study to explore the relationship between meander migration and riparian communities at the basin level, and the results support the identification of vulnerable communities to improve local planning and floodplain conservation.(Nagel, 2022)

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was established that Brazil was the country with the highest number of records published in the Migration, Food Security and Latin America variables, with a total of 27 publications in the Scopus database. In the same way, it was possible to establish that the application of theories framed in the area of Environmental Sciences, were used more frequently in the intricate dance between migration and food security in Latin America, we found a convincing narrative of adaptation, challenges and the urgent need for comprehensive solutions. Migration, driven by a multitude of factors, has emerged as a transformative force

reshaping landscapes, both social and agricultural, across the region. The migration phenomenon in Latin America is intertwined with broader challenges, from economic inequalities to environmental degradation. However, within these challenges are opportunities for innovation and collaboration. Recognizing the interconnectedness of these issues is crucial for the development of sustainable solutions that address the root causes of migration while strengthening food security. The nexus between migration and food security requires a shift from unilateral solutions to collaborative strategies at the regional level. Latin American nations must come together to formulate and implement policies that address migration challenges while reinforcing agricultural sustainability. By fostering regional cooperation, governments can create a framework that recognizes shared responsibility for the well-being of migrant populations and the communities they join. Amid the complexities of migration and its knock-on effects on food security, a human-centred approach is paramount. Policies must be designed with a deep understanding of the diverse needs, aspirations and vulnerabilities of migrant populations. Empowering individuals and communities through education, vocational training, and inclusive economic opportunities can contribute to the creation of resilient societies capable of addressing the challenges posed by migration.

In conclusion, the migratory phenomenon in Latin America requires nuanced and holistic responses. It requires moving away from traditional siloed approaches and adopting integrated, multidimensional strategies that recognize the intricate interplay of factors that shape the region's socio-economic and agricultural landscapes. By interweaving policies that prioritize environmental sustainability, human well-being, and regional collaboration, Latin America can navigate the complexities of migration, ensuring a safer and more prosperous future for all.

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