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AGRO-FOOD VALUE CHAINS AND TERRITORY: A SCIENTOMETRIC REVIEW

Cadeia de valor agroalimentares e território: uma revisão cientométrica

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ABSTRACT
Addressing the relationship between territory and value chain is one of the ways to understand the promotion of sustainable territorial development. Numerous research has been carried out in this regard, in different sectors and fields of research. However, the specific contributions of value chain and territory approaches to discussions on territorial development is still a research gap, as the link between them is not yet well developed. To fill this gap, we reviewed the international literature on agri-food and territory-based value chain. A scientometric analysis of the scientific papers in English indexed in the Web of Science database was performed. Main results show that work on agri-food value chain and territory has grown over the years. It was also possible to identify three distinct periods in terms of researched subjects. Seven research domains stood out, highlighting the contribution of different aspects of the territorial dimension in studies comprising agri-food value chains and effects on development. Results also indicate most studies are conducted by researchers in European countries, mainly Spain, Italy and France, but also countries like Mexico and Russia. Despite the rising number of studies and the large diversity of themes, there is a lack of theoretical consolidations to link agri-food value chains and territory.

Keywords: territorial development, value chain, scientometric analysis, literature review.

RESUMO
Abordar a relação entre território e cadeia de valor é uma das formas de compreender a promoção do desenvolvimento territorial sustentável. Muitas pesquisas foram realizadas a esse respeito, em diferentes setores e campos de pesquisa. No entanto, as contribuições específicas das abordagens da cadeia de valor e território para as discussões sobre desenvolvimento territorial ainda é uma lacuna de pesquisa, pois a ligação entre eles ainda não está bem desenvolvida. Para preencher essa lacuna, revisamos a literatura internacional sobre cadeia de valor de base agroalimentar e território. Realizou-se uma análise cientométrica dos artigos em língua inglesa indexados na base de dados Web of Science. Os principais resultados mostram que o trabalho sobre cadeias de valor de base agroalimentar e território tem crescido ao longo dos anos. Foi possível identificar ainda três períodos distintos em termos de assuntos pesquisados, de acordo com a adesão e interesse na temática. Sete domínios de pesquisas se sobressaem, em que se inserem diferentes aspectos da dimensão territorial para contribuir para estudos de cadeia de valor de base agroalimentar e seus efeitos em termos de desenvolvimento. Além disso, os resultados indicam a predominância de países da Europa em termos de publicação sobre o tema, principalmente Espanha, França e Inglaterra, além de países como México e Rússia. Apesar do crescente número de estudos e da grande diversidade das temáticas, observa-se ausência de uma consolidação de pesquisas que estudem e abordem formas como cadeia de valor de base agroalimentar e território estão ligados.

Palavras-chave: desenvolvimento territorial, cadeia de valor, análise cientométrica. revisão de literatura.

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1. INTRODUCTION

The predominant industrial development model in the current socioeconomic context is in search of greater volume and productivity. However, this type of production is linked to an unsustainable system, since it is based on a high level of consumption, generating negative socio-environmental consequences (Silva et al., 2019). In this regard, policies around the world have revealed the growth of concern about the impacts caused by current methods of production, which seek to extract raw materials and transform them into finished products, resulting in environmental impacts, among other kinds of impact. This linear production form, from extraction to production and waste, needs to be reconsidered (Cosenza et al., 2020). In agricultural production it is no different: studies have been developed to try to position itself in face of traditional forms of production, trying to relocate or reconnect agro-food-based value chains to the territory (Mantino & Vanni, 2018; Thomsen, 2016; Torres-Salcido et al., 2015).

For Donovan *et al* (2015), the goal of adopting the value chain as a way to achieve development goals is to generate results for all those involved, improve economic performance, and even reduce poverty. Agri-food value chains have enabled people to lift themselves out of poverty through endeavors that involve government, civil society, farmers and agribusinesses in order to develop them, considering the sustainability tripod (Donovan et al., 2015; FAO, 2014).

The development of sustainable agri-food value chains can be considered as an alternative for lifting millions of families in developing countries out of poverty (FAO, 2014). Agri-food production represents a major part of the economy of developing countries and it has a direct relationship with the environment and climate. The difficulty of controlling and maintaining the quality of agri-food products demands ways of organizing the entire value chain, either through contracts, regulations, certificates, among others (FAO, 2014). There is a growing tendency in the demand for value-added foods in developing countries. Therefore, there is a tendency to study agrifood-based value chains and production itself from different perspectives. For example, through the development of more stringent standards for food quality and safety, or through the growth of niche markets, such as organic, and also through concerns about the availability of agricultural raw materials (Donovan et al., 2015).

Although there are opportunities and threats in the current context of agrifood production, it is worth noting that agri-food production was affected by the globalization process and insertion in global chains, in a way that there is an increasing geographical distance between food producers and consumers (Aubry & Kebir, 2013). The agri-food value chains have been undergoing changes, resulting in a greater distance from their function of providing food, also, being increasingly restricted to the producer the function of providing raw materials for the industry, and the industry to process and provide food. Thus, representing a growing distance between food activities and agricultural production (Ilbery et al., 2005). As a result, there is a disconnection between agriculture and consumers' food (Ilbery et al., 2005; Lamine, 2015) and also a disconnection between agriculture and the environment (Lamine, 2015).

Globalization and the division of activities worldwide has affected producers in different ways, and thus, has affected different stages of development under different aspects in each country, region, place or territory (Coe et al., 2004; Coe & Hess, 2013; Hess, 2009; Parrilli et al., 2013; Yeung & Coe, 2015). This scenario instigated the need to reconnect, rethink and create opportunities that are not restricted to international trade as a form of producing and distributing this production, becoming

effective as ways to achieve development, inclusion and sustainability (Aubry & Kebir, 2013; Bowen & Mutersbaugh, 2014; Cembalo et al., 2013).

Short supply chains (Aubry & Kebir, 2013; Ilbery et al., 2005; Mundler & Laughrea, 2016), regional distribution centers (Izumi et al., 2010), and sustainability of value chains (Berti & Mulligan, 2016; Cembalo et al., 2013; FAO, 2014; Lamine, 2015) have been constituted as alternative forms of production and supply that reconnect transactions with the places where the transacted goods are produced (Hesse, 2010a). Forms of organization of production have been diversifying themselves according to regional specificities, such as edaphoclimatic, cultural, social, and economic conditions, thereby allowing the development of new ways to explore the local social, economic and cultural reality. This trend has aimed to value local aspects as a form of sustainable development, especially for the population in rural areas. The main axis of debate are the short forms of production in the food sector (Batalha, 2021).

Batalha (2021) also highlights the coexistence of two methods of production, one with a more local tendency, while the other is increasingly internationalized and interdependent through global value chains. This simplifying coexistence masks the existence of a multiplicity of production formats emerging within the territory (Gasselin et al., 2020). The emergence of these more local or alternative modes of production arise in a context in which globalization has not been sufficient to standardize modes of production. It was also responsible for some limitations, especially from the environmental, demographic, and health points of view, which are sought to be overcome through these alternative modes of production (Gasselin et al., 2020).

These aspects, as well as the dichotomy between global and local, arouse interest for the understanding of territorial development, because the concept of territory is related to that of social and economic construction and "the territorial qualifier encompasses all conceptions of development, whether economic, regional, local, political, social, human or sustainable" (Druciaki, 2017, p. 36). The link between sustainable development and territory has been a result of the insertion of the pillars of sustainability at the local level (Angeon et al., 2006), aligned with the need for food production to overcome hunger and obesity through sustainable actions throughout agri-food production (Batalha, 2021).

The main advances of agri-food value chain and territory are still unclear, despite their recognized importance. Therefore, the contribution of the value chain approach and its relationship with territory approaches is still a gap to be researched. For this to be filled, the aim of this study was to review the international literature that connects agri-food value chains to territory through a scientometric analysis of scientific papers indexed in the bibliographic base Web of Science.

In the next section, the methodological course of the research will be specified. The third section presents the results in terms of bibliometric, diachronic and synchronic analysis of the papers found. And, finally, the conclusions and suggestions for future research are presented.

2. METHODOLOGICAL PATH OF SCIENTOMETRIC ANALYSIS

A bibliometric survey was carried out in the Web of Science database, where only scientific papers written in English were selected, to focus on publications that form the international scientific knowledge on the subject and avoid language bias in the keyword analysis (Malanski et al., 2022). The search was made without a time cutout[1]. The first year in which there was a publication that met the selected requirements was in 1999.

The bibliometric analysis was performed in three steps (Figure 1), according to PRISMA (Preferred

Reporting Items for Systematic Reviews and Meta-Analyses) instructions (Moher et al., 2009): a) delimitation of the query; b) off-topic papers excluded; c) scientometric analysis of the selected papers (Malanski et al., 2021), better detailed as follows:

The first step was to build the database by searching for scientific papers in the Web of Science platform. In order to do this, the Agrovoc Thesaurus, which is the reference thesaurus in agricultural sciences, was used to verify standardized keywords for the two main terms: "agri-food value chain" and "territory".

Conceptually speaking, in a broad sense, the value chain aims to fulfill market demands. Thus, this is a concept that can be applied to different sub-sectors that make up a country's economy (FAO, 2014). The value chain consists of a sequence of interdependent and related activities for the supply of a product or service that encompasses different stages, starting with conception, then, production and, finally, distribution, to meet the final consumer (Crescenzi, Pietrobelli & Rabellotti, 2014). For Trienekens (2011) the value chain is formed by the transformation and transaction steps that happen within and between different companies that are vertically integrated. This happens because they are "a network of horizontally and vertically related companies that aim/work together to provide products or services to a market" (Trienekens, 2011, p. 59). Specifically, as noted by Malanski et al., (2022), the concept of agri-food value chain involves companies and roles that are employed to produce different food products.

Although there are distinct definitions with conceptual overlaps (FAO, 2014), the concept and approach of value chain fit the objectives proposed in this research. Hence, value chain was the broad concept adopted to conduct the research, and agri-food the specification of which type of chain was of interest to this research.

Although the interest in this scientific paper is related to *value* chain, the exclusive use of this term restricted the results, given that papers do not always use this specific term or its close variations (FAO, 2014; Malanski et al., 2022). We, then, chose to search in the general context of different forms of production organization, to filter based on reading the title, abstract, and keywords. The variations that could appear for value chain, such as: agrifood/agrofood system, agri food/agro food system, agrifood/agrifood industry, agri food/agro food industry, both in plural and singular, were included through the symbol "*" (asterisk), which represents words that can be used in singular or plural, or the character "?" (question mark), that replaces a letter in the word in the search, for example.

Despite the conceptual variations between the different approaches, there are overlaps between value chain and the others (FAO, 2014), which justifies performing a broad search on the subject. We also observed that by including the word "territorial", to capture the different variations that could arise related to territory, territorial development and territoriality, relevant results for this study appeared, and it was also included in the search.

The query used to identify the scientific papers was (("value chain*" OR "global value chain*" OR "global production network" OR "food chain*" OR "agr*food system*" OR "agr*food system*" OR "agr*food industr*" OR "agr* food industr*" OR "global commodity chain*" OR "short food supply chain*" OR agr?business OR agroindustr*) AND ("territor*")). The use of the characters "*" and "?" allowed the capturing of possible variations in the writing of these words, thus expanding the possibility of finding papers related to the proposed terms.

The choice of the value chain concept for the present research is justified because it is a controlled and standardized vocabulary for the indexing of publications. In addition, it enables analysis focused on specific product chains, which is the objective of this research (FAO, 2014). Because of this conceptual choice, this work does not seek to understand input-

output relationships (*filière* approach), globalization and power relations (global commodity chain approach), optimization and logistics of the flow of products or services within a chain (supply chain approach), or intra-firm strategy (Porter's value chain approach) (FAO, 2014).

The search was limited to scientific papers, not including reviews, editorials, books, book chapters or papers that have not been published in scientific journals, such as reports, e.g. Malanski et al., (2022). This survey consists of a repertoire of 424 scientific papers. In the second step, a manual exclusion of papers not pertinent to the researched theme was performed, for example, those that involved research in health, chemistry, among others, were left out which comprised the exclusion of 199 papers. Thus, after the screening (manual filters, which included reading the title and abstract), a set of 225 papers was assembled to be analyzed, as illustrated in Figure 1. Furthermore, it should be added that soon after the extraction of the database, a standardization of the words was performed, opting to keep the words in singular, lowercase, American English, without hyphen and without abbreviations.

The third step consisted in the scientometric analysis composed of three different analyses: bibliometric (frequency), made with the help of the Microsoft Excel® software. The diachronic analysis, with the purpose of identifying the topics related to the value chain based on agri-food and territory, and also to present the evolution over the years of the topics researched. Finally, the synchronic analysis, made through a network map composed by the keywords of the selected scientific papers. Specifically, the diachronic and synchronic analyses were carried out using the Cortext platform[2]. This allows the construction of both analyses.

The first, through the construction of a demographic analysis and the second through a network map that registers all the nodes formed by the co-occurrences of keywords (Malanski et al., 2022; Tancoigne et al., 2014). The interpretation of the triangles that characterize the nodes of the network is that the larger the size, the higher the frequency of a particular keyword. The lines of the network map represent the mutual citation of keywords, and the intensity of these lines is understood by means of the gray color. The interpretation about the nodes, which may or may not

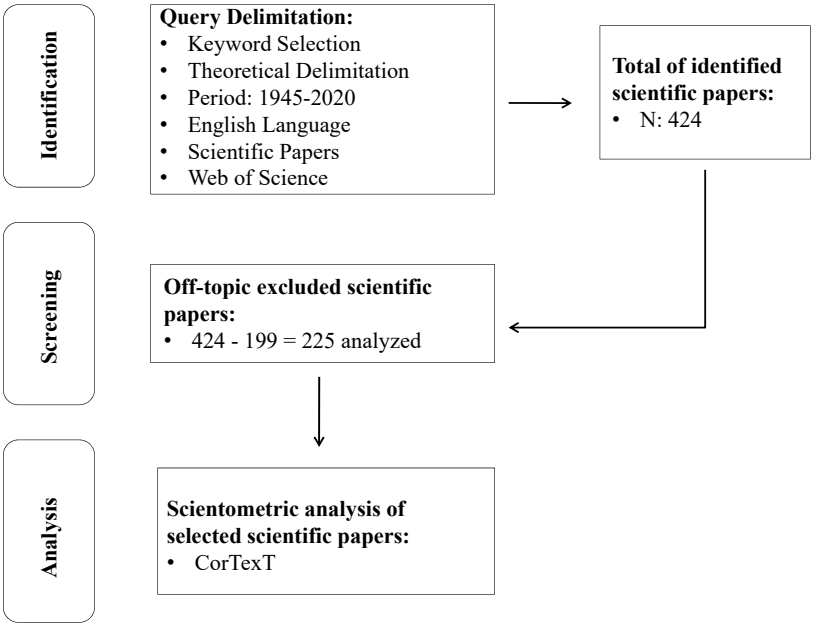

FIGURE 1 – Stages of Bibliometric Analysis made in the Web of Science
Source: Prepared by the authors, based on Malanski, Dedieu & Schiavi (2021)

be associated, is possible through the analysis of the distance between them, i.e., the closer they are to one another, the more associated they are; and the farther they are from one another, the less associated they are. When there is an intense connection between the nodes, they form circles that have distinct colors (Malanski et al., 2021; Tancoigne et al., 2014).

Based on the obtained results, for the operationalization of this research and to standardize writing, the different terms were standardized, prioritizing the use of the term agri-food value chain whenever possible. Although we are aware of the existing differences, throughout the work, the adoption of a pattern facilitates the reading and understanding. We emphasize that the aim of this work was to learn about the international literature on the agri-food value chain and territory, and not to discuss the existing conceptual differences.

3. RESULTS

The results obtained in this research are subdivided into three parts: Bibliometric analysis - geographical distribution of the scientific papers (laboratories), most cited papers and authors, disciplines and journals that tend to publish more on the subject. Diachronic analysis of the evolution of the publications and the subjects researched over time. And finally, the description and analysis of the network map, that is, the synchronic analysis.

Through the bibliometric analysis, we observe the main countries that study about agri-food chains and territory (Figure 2). We can notice that there is a concentration of publications made by institutions that are located in European countries. This is a scientific community that is very concerned with issues involving agro systems and territory, and is the birthplace of important theoretical currents and approaches on the subject, in countries like Spain, France, and Italy. Other countries around the world have also published on the subject, although to a lesser extent.

The survey revealed Italy as the country with the most publications on the theme, with 34 publications, followed by Spain with 28, France with 25, England with 16, Mexico with 13, and Russia with 11 publications. These six countries represent 56.44% of the publications on the theme in the researched database. Brazil, on the other hand, appears with one publication on this theme, which indicates that although there is research, it may be rarely published in the international scenario.

Although there is growth in the number of publications over the years, especially since 2015, the main 10 scientific papers, in terms of citation amount, were published before 2016. For example, the most cited paper had 774 citations, was written by Neil M. Coe, Martin Hess, Henry Wai-chung Yeung, Peter Dicken and J Henderson and is titled "'Globalizing' regional development: a global production networks perspective" and was published in 2014 by "Transactions of the Institute of British Geographers". This paper has a theoretical content on Global Production Networks.

Another aspect to be highlighted is that Neil M. Coe, Martin Hess, Henry Wai-chung Yeung are the authors who wrote the most cited scientific papers on the theme which were found through this survey, focusing primarily on discussing theoretical aspects of the Global Production Networks approach. Although this is an approach present in the most cited scientific papers, other approaches also deserved prominence in relation to the amount of citations, especially when talking about more recent papers, among them: Value Chain, Short Supply Chains and Agri-Food System.

Regarding the journals that had the most cited publications, it stands out for their focus on geography or economics, for example, the journal that published the most cited scientific paper was Transactions of the Institute of British Geographers, followed by Journal of Economic Geography, Economic Geography and Progress in Human Geography.

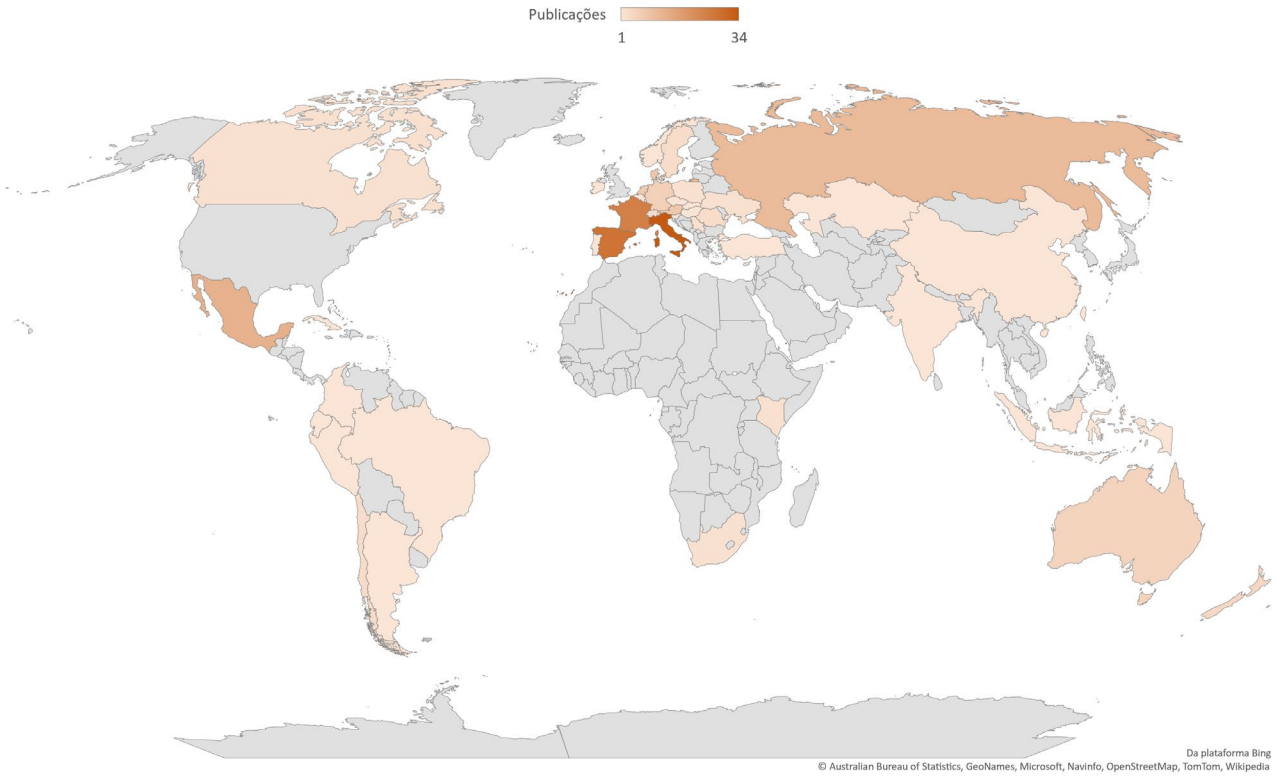

FIGURE 2 – Main countries studying the agrifood value chain and territory according to the number of publications* in the Web of Science databases

*Elaborated based on the country of the first author's institution of affiliation

Source: Prepared by the authors

Through the diachronic analysis, we observed that there was an advance in terms of the number of scientific papers published on the agri-food value chain and territory over time, and the first entries made in the Web of Science occurred in 1999. The interconnection between territory and agri-food value chain is a new theme discussed by the international scientific community. Since in 2020, 51 scientific papers were registered, that is, 22.66% of the papers published on the theme in the period of this survey (1999-2020) happened in this year. And, 78.66% of the papers published on the subject happened from 2015 onwards. The evolution in the number of indexed publications on the theme is an indication of the increasing relevance of this subject for the international scientific community. Concomitant to this growth in the number of publications on the subject in the period, there is also an increase in the number of researched subjects.

Based on the analysis of the keywords, we found that there was variation in the researched topics. Some of them have remained the same over time, and many others have emerged, as there is an increase in research related to the theme. The evolution of the subject topics is presented in Figure 3 and has been distinguished into three periods.

Period 1: period of low adherence to the researched theme (1999-2010): Period characterized by research focused on globalization, global production networks, global value chain, global value network and value chain. "Globalization", one of the main topics until 2010, is a central theme in this period, which reflects the current political, economic and social context, with the intensification of globalization and its reflections in different spheres, including discussions on territory and value chain, such as in (Coe et al., 2004) e (Smith et al., 2002). Meanwhile, "global production networks" and "global value chain" remain in all three periods with

some relevance among international researchers on the topic. On the other hand, "value chain" has an increase in the frequency of occurrences, therefore, an increase in research related to this topic is inferred.

Period 2: period of relative interest to the researched theme (2011-2015): key words such as innovation, territory, rural development, collective action, besides others that were already part of period 1, are on focus. See (Bowen & Mutersbaugh, 2014; Cembalo et al., 2013; Dervillé & Allaire, 2014; Sforzi & Mancini, 2012). All these topics that emerge in this period, gain strength in terms of occurrence in period 3.

Period 3: period of high interest for the researched theme (2016-2020): period in which new topics such as local food system, governance, agrifood system, sustainable development, food security, localized agrifood systems, short agrifood supply chains, collective action, global production networks, geographical indication, territory, value chain, innovation, sustainability and global value chain gain relevance and represent the main topics researched by the international scientific community, of which we can mention (Bannikova et al., 2019; Lamine et al., 2019; Pachoud et al., 2019; Soldi et al., 2019; Tundys & Wiśniewski, 2020; Voronkova et al., 2020).

In the synchronic analysis, the overview of the network graph generated from the keywords of the 225 scientific papers points to the diversity of research topics related to the theme agri-food value chain and territory. First, different concepts linked to value chains were identified, such as: global value chain, global production network, supply chain, short food channels, long food channels, local food systems, localized food systems and alternative production systems, for example. Some of these concepts are

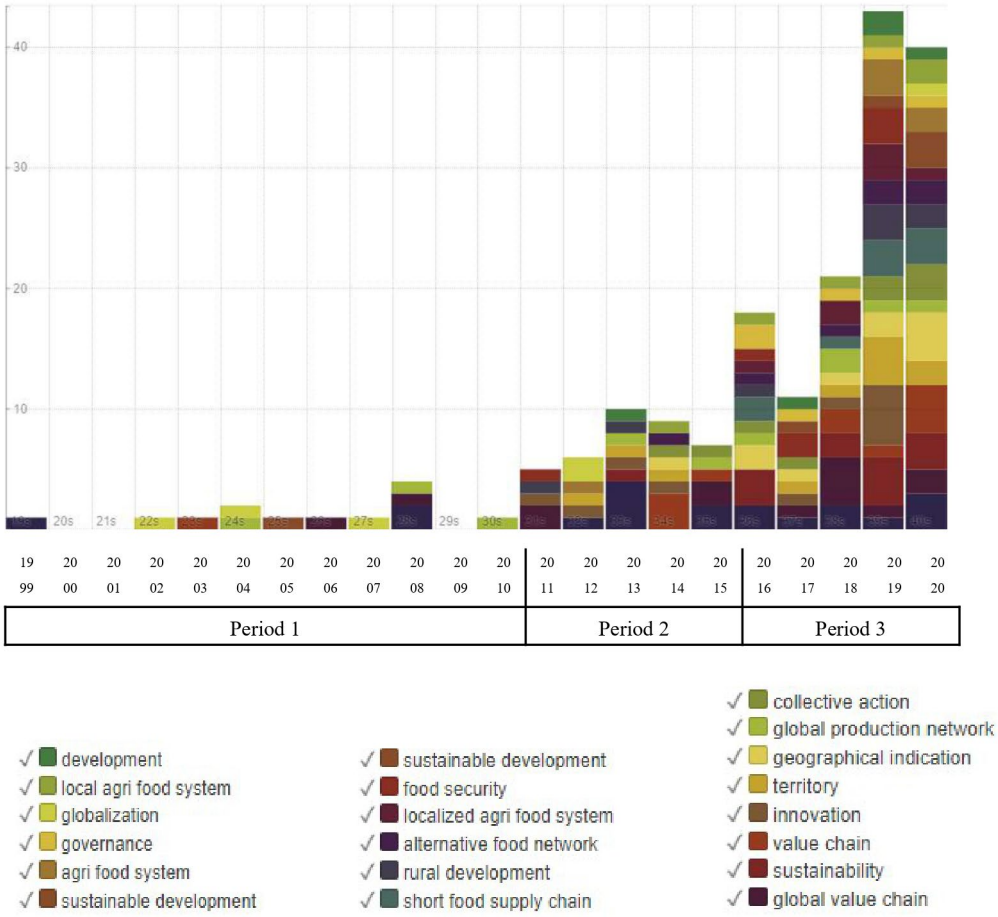

FIGURE 3 – Evolution of researched topics on the agri-food value chain and territory
Source: Prepared by the authors from the key words in the demographic analysis available on the Cortext platform

more associated with long chains, while others are associated with short chains or with a regional focus.

Hence, we understood that the database is made up of both research done on long or global chains and short chains or regions. This diversity of approaches results in different lenses of observation on how the value chain linkage with territory happens. The concepts of "global value chain" or "global production network" are graphically distant from the concepts of "short chain channels", "local or localized production systems". This indicates that they are distinct lenses of observation, with unique research concerns, that have as a common point the concept of value chain, which takes a central position on the map.

When analyzing the network graph in detail (Figure 4), seven research domains related to agri-food value chain and territory emerged, as described below: A - Alternative Production Networks; B - LAFS - Localized Agri-Food System or Localized Agri-Food Systems; C - Global Networks and Global Value Chains; D - LAFS in the territory; E - Agribusiness Impacts; F - Sustainable Development; and G - Inclusive Development.

A - Alternative production networks - the work in this axis are developed through an alternative approach of food production networks (AAFN) that are opposed to the conventional productive forms, which are characterized by difficult access for small producers and the economic, social and environmental unsustainability of the conventional agroalimentary system, besides the distance of the relations between producers and consumers, for example.

Thus, these alternative forms of production and commercialization of agricultural production seek to find new ways to produce and distribute products. However, the AAFN involves different initiatives for

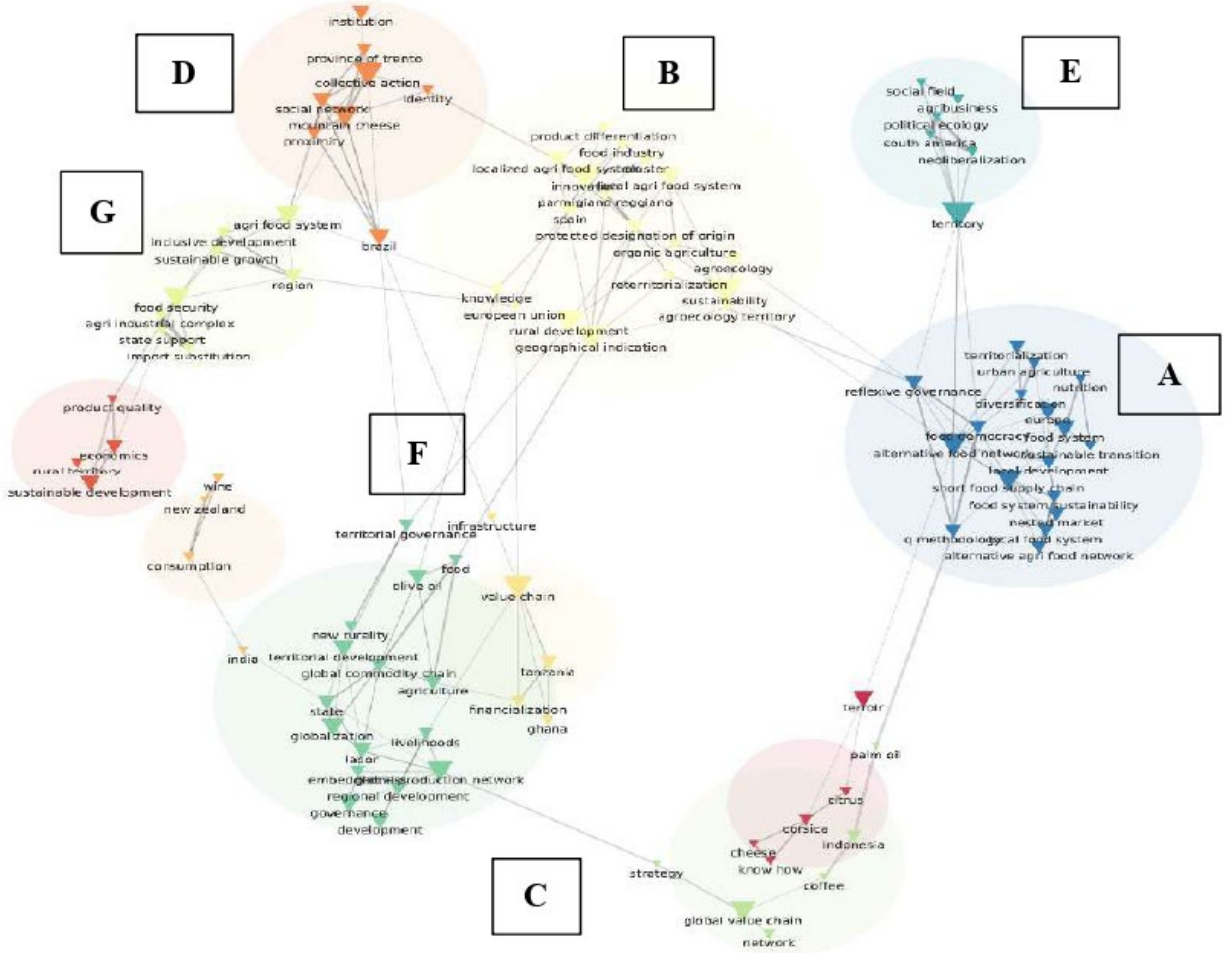

FIGURE 4 – Keyword map of the papers resulting from the combination "Agri-Food Value Chain" and "Territory"
Source: Prepared by the authors

the promotion and commercialization of products, considering issues that are neglected in conventional food forms. Some of the main alternative initiatives of AAFN are: Food Hubs and short food supply chain. These examples were mentioned as there is also the initiative Local Agri-Food Systems or quality food networks, of which geographical indication is the most prominent (axis b). The distinction between the different existing initiatives is relevant in order to understand the separation of cluster A and B. Hence, HFAs are centered on positionality, that is, relational proximity, without necessarily being linked to a history or location. Whereas, quality or local systems approaches are based on an anchoring in the territory.

In relation to the aspects defended and promoted by the alternative forms of AAFN include: reterritorialization of the food trade, regional and local reconstruction of the food trade, spatial proximity, construction of bonds and interactions, relocation of production close to the final consumer, identification of the origin of production and generation of economic and social benefits, besides environmental benefits. Notable in this axis are works such as those by (Berti & Mulligan, 2016; Bowen & Mutersbaugh, 2014; Davide et al., 2018; Hyland et al., 2019; Lamine et al., 2019; Mundler & Laughrea, 2016; Tundys & Wiśniewski, 2020; Vittersø et al., 2019).

B - LAFS - Localized Agri-Food System or Localized Agri-Food Systems: we can observe that the words that are associated with the largest-sized triangles, and therefore, greater occurrence or importance in relation to occurrence in research are: local agri-food system, innovation, value chain (which is linked to axis c), sustainability, geographical indication, rural development and agro-ecology, for example. One of the relationships between territory and the agri-food value chain happens through research that is anchored within the theoretical debate of Localized Agri-Food Systems (LAFS) or *Systèmes Agroalimentaires Localisés* (SYAL).

LAFS or SYAL are acronyms that refer to the same theoretical approach that emerged in 1990. Its distinctive features are the local (including the concept of *terroir*), social relations, and institutions. LAFS adopts a territorial level approach in order to analyze value chains, their quality and management. It is an approach that marks a transition from the modes of production of food systems to more sustainable ways than the conventional mode. The sustainability referred to in this theoretical approach involves the economic, social, and cultural dimensions with a focus on promoting rural development. This is different from local development (axis a), because it is based on the inclusion of natural elements as components of the production system.

The LAFS theoretical approach incorporates in the discussion the concern with: ecological issues, food safety, health, special characteristics of products, people, institutions, social relations, innovation and quality in food production and the role of governance. LAFS started to be used as a tool for interventions to differentiate products within the same sector according to their origin. This happens through the geographical indications (GIs) that link quality to territory through the Protected Designation of Origin (PDO) or Protected Indication of Origin (PGI), which enable territorial rural development and incorporate agroecology as a GI governance mechanism by promoting a vision of sustainability from the perspective of agroecology itself. It uses ecological principles in order to have the best possible interaction between plants, people, environment and animals, without excluding social aspects.

To conclude, organic farming is part of the LAFS framework, which is one of the modalities of food quality schemes that is restricted to the food production stage. Moreover, it involves “trusted goods”, and communication with consumers takes place through labels. Notable in this axis are works such as those by (Al Shamsi et al., 2018; Arfini,

Antonioli, et al., 2019; Arfini, Cozzi, et al., 2019; Barrionuevo et al., 2019; Chiffoleau et al., 2016; Fortunati et al., 2020; Mantino & Vanni, 2018; Maye et al., 2016; Owen et al., 2020; Soldi et al., 2019).

C - Global Networks and Global Value Chains: One of the links between territory and agri-food value chain happens through research on global production networks, governance, territorial and regional development, agriculture and labor. Thus, in this axis, it is found a range of works that try to make an effort to reformulate debates of Global Production Networks or Global Value Chains (GPN-GVC). Also, rethink territoriality or the institutional context in which GVC is embedded; develop greater understanding about the division of labor; unequal flows of value that trigger territorial inequalities; formulate theoretical explanations of how a network of industries can generate effects on territory and, thereby, also on territorial development.

Other works have also carried out proposals to develop the GPN approach by considering the agency role and practices of multinationals, and how they "fit" into regions. Or yet, an attempt to conceptualize, through GPN, the interconnection between globalization and regional development with the formation of territories or the theoretical analysis of the state's role in labor governance in GPN. This concern with the theoretical formulation of a GPN or GCC (Global Commodity Chain) approach is necessary in view of, for example, incorporating national regulatory aspects into the analysis of governance in GPNs, since leading companies are under pressure, for example, to offer better working conditions.

Another aspect to be incorporated is the compression on the decision making and practices of multinationals that are inside GPNs, as they want to capture income, propitiating the development of power relations inside the GPN. For example, the neglect of concept places and cities, in which material and value flows happen inside GPNs or GCC. Or the own limits that are part of the GCC, which are: the strategic action external to the chain, such as that of the State; the disregard of labor and its organization as a factor that can even influence the location of economic activities; the dualistic and linear analysis of flows; and, the neglect of regional and national processes to the detriment of the international aspect.

About location, one of the limitations of GCC, the need to conceptualize or theoretically advance arises from the need to also focus on the territoriality of GCC. That is, in describing the spatial pattern, and how production activities are distributed, or the institutional context in which they are inserted. And, also, there is a need for a theory that can explain how globalization processes are organized. This reflection on the effects of globalization is relevant in this axis, because the agribusiness value chains are all over the world. However, this type of chain, while global, has an interaction and anchoring with a specific space and interacts with local livelihoods. In other words, globalization not only generates homogenization, but also a geographical differentiation. Thus, this mode of development of a globalized economy imposes challenges to theorization. Notable in this axis are works such as those by (Coe et al., 2004; Coe & Hess, 2013; Hesse, 2010b; Neilson et al., 2018; Smith et al., 2002; Thomsen, 2016; Yeung & Coe, 2015).

D - LAFS in the territory: one of the relations between territory and agri-food value chain happens through researches that focus on axis "d". The most relevant keywords, according to the size of the triangle that represents its occurrence, are about social network, collective action, institution and identity in the province of Trento or Brazil, for example. This axis is strongly linked to axis "b" through the term identity (axis d) and localized agri-food system (axis b). Localized agrifood systems seek to understand the link between the roles played by man, product and territory. Thus, in this approach, and in axis "d",

the discussion about collective organization as a territorial resource emerges.

This axis revolves around a discussion about the need to know which social practices are part of a community and have an impact on the production process. This dynamic, usually called collective action, is in the background of the creation of a collective brand, such as, for example, created through a PDO - Protected Designation of Origin. All the stages of the localized production system depend on the coordination of collective action and government activity. On collective action, it is suggested in these studies that long-term social relationships that are based on reciprocity, friendship and trust, for example, help promote the sustainability of agribusinesses.

There is an emphasis on the importance of identity, belonging, reciprocity, trust and strong relationships as a condition for successful collective action. It is this success of collective action that allows producers to capture value from PGI products. Weakening or failures of collective action can generate discouragement of production, loss of quality, forms of exclusion and inequality. Most of the studies in this axis use the social network approach, the relational approach and the role of institutions to study collective action. Notable in this axis are works such as those by (Dervillé & Allaire, 2014; Enriquez-Sanchez et al., 2017; Pachoud et al., 2019, 2020; Rendón-Rendón et al., 2019; Ruiz et al., 2020; Torres-Salcido et al., 2015).

E - Impacts of Agribusiness: one of the relations between territory and agri-food value chain happens through research that use Social Field Theory, agribusiness and neoliberalization in the territory of South America. Thus, this axis seems to assume as its characteristic studies regarding the impact of agribusiness in territories previously occupied by farm practices. This happens through studies that tried to identify how soy production and the neoliberalization of nature generated impacts on territory. Other studies sought to understand the process of proletarianization of rural labor in territories where agribusiness is predominantly present. And also those that sought to understand how the social differentiation happened among farmers who were incorporated into agribusiness milk production. Or even the search for understanding the strategies of the agricultural export sector, that is, agribusiness, through the use of a critical literature on neoliberalization. And even, the search for understanding the process of land concessions to foreign investors, and how much they actually get for the production of agribusiness.

Having said that, these studies show that there are negative impacts of the mode of production linked to agribusiness, such as new social natures, transformation of the ways of carrying out politics by the State and also in the territory, infiltration of capital, social conflicts, infrastructure to support transnational agribusiness, marginalization of farmers, loss of food sovereignty, proletarianization of farmer labor, abandonment of traditional practices of reciprocity, adoption of new production strategies, socioeconomic changes in the territories, less availability of water and conflicts over land, for example.

Another highlight for this axis is that some scientific papers introduced in some way the discussion about the concept of territory, such as using the theoretical approach of Bourdieu's Social Field (2000). This discussion about territory and territorialization happens in this axis through the study of the performance of a corporation that sells agricultural products. Notable in this axis are works such as those by (Correia, 2019; Martínez Valle & Martínez Godoy, 2019; Palmås, 2013; Panez et al., 2020).

F - Sustainable Development: one of the relations between territory and agri-food value chain happens through research about sustainable development, rural territory, economy and quality products. However, in this axis, most of the works are

concerned with sustainable development. Some of them make reference to the sustainable development goals (SDGs). It is up to science to address different topics, such as agricultural systems, adaptation to climate change, ways to reduce poverty and innovation, as all these elements relate to agriculture and sustainable development. This concern arises in a context in which Global South countries need investments in order to have sustainable development for them, and especially for rural areas. Whereas countries in Europe have such a high welfare context that their concern is not restricted to acquiring or producing food, but includes elements of biodiversity, water pollution or landscape deterioration. Hence these elements can be represented by concern for sustainable development.

A look into the future also points to the need to worry about the quality in agrifood systems that countries have, but also about the incorporation of environmental care and sustainable development. The different authors seek to explore sustainable development through different ways of performing activities of agri-food systems, such as the incorporation of these elements in the PDO, through Solidarity Purchasing Groups (SPGs), by fostering the historical agricultural valorization of products with GI, once they have a link between territory, people and tradition. Thus, the scientific papers that are part of this axis discuss the role of regional programs for the development of the industrial complex and its impact on sustainable development, in addition to the role of public-private partnerships (PPP) as a mechanism for economic development through the value-added chain. Notable in this axis are works such as those by (Cembalo et al., 2013; Narciso et al., 2020; Nicolay, 2019; Sanz Cañada & Macías Vázquez, 2005; Tretiak et al., 2020; Voronkova et al., 2020).

G - Inclusive Development: one of the relations between territory and agri-food value chain happens through research on agri-food systems, food security, inclusive development and import substitution. Thus, researches in this axis use an approach of agro-industrial systems and state support to make inclusive development happen, or use value chain collaboration (VCC) to understand it. The inclusive development approach intends to conciliate economic growth with the solution of existing social and environmental problems that are part of the current production system. Therefore, strengthening the existing potentialities present in each region and providing the active participation of the State, which regulates the way the market works through State regulation. With that, a transformation of the State's actions began to take place.In the past, there was an asymmetry in the actions of the State in the different regions, most of the subsidies were destined to the exploitation of large agricultural crops, and there was an unstable agricultural policy. Now, the tendency is for the State's support to be increasingly shaped by the goals of sustainable development.

While this development model does not accept growth at any cost, it seeks to reduce inequalities between agri-food systems with fair and uniform government support for different types of agricultural products, increased employment and rural population, preservation of rural areas and environmental concern. Meanwhile, research on VCC considers the role of collaboration of agents that are not necessarily inserted in a value chain and also considers state support to achieve the goals of inclusive development. Another line of research present in this axis is food security from different perspectives, such as: food security in the face of climate change, global competition for land use, import dependency, low or variable productivity levels and the use of import substitution to ensure food security through production in agro-industrial complexes that operate by introducing new innovations. Notable in this axis are works such as those by (Derunova et al., 2019, 2020; Levidow & Psarikidou, 2011; Misakov et al., 2018).

Having said that, we observed that the international literature addresses the agri-food value chain and territory through different research axes, which do not necessarily converge to the same level of discussion. However, each axis seeks to include different aspects of the territorial dimension to contribute to studies on the agri-food value chain, and the effect that this generates in terms of development. As a result, we notice that there is a lack of consolidation of research that studies and addresses the ways in which the agri-food value chain and territory are linked, although there are different axes being developed.

CONCLUSIONS

From the research, we observed that there has been an increase in the production of scientific knowledge, mainly originating from empirical research. The construction of an original theoretical foundation of the approach of agri-food value chain and territory is open to advances that, for example, can adequately explore forms of connection and interference between both. These are relevant aspects to be studied and highlighted for the purpose of promoting sustainable territorial development. Meanwhile, the term territory, although it is one of the key words sought in the equation, is isolated in a secondary position on the map, indicating a gap that is noticed in the readings: the tangency or gaps between the theoretical issues regarding territory. In this sense, we recommend to carry out studies that seek to build theoretical-analytical models and to contribute to the advancement of research in this theme.

The aim of this study was to learn about the international literature on value chains and territory, and not to discuss the existing conceptual differences. We also suggest that future researches seek to pay attention to the conceptual differences and approaches associated or overlapping with the concept of value chain, which can provide complementary information about the construction of knowledge and the participation of different schools in the theme under study. We also highlight the search in other indexers or databases, such as Scopus and Scielo, allowing complementary views and eventual comparisons, bringing contributions to the advancement of scientific knowledge and studies involving agri-food value chain, territory and territorial development.

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ENDNOTES

[1]The Web Of Science database started in 1945, so the time frame was 1945-2020.

[2](https://managerv2.cortext.net/dashboard, IFRIS and INRAE).

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