Commodity chain and surveillance in health, work and the environment[1]

Cadeias produtivas e a vigilância em saúde, trabalho e ambiente

Luís Henrique da Costa Leão
Universidade Federal de Mato Grosso. Instituto de Saúde Coletiva. Cuiabá, MT, Brazil.
Fundação Oswaldo Cruz. Escola Nacional de Saúde Pública. Rio de Janeiro, RJ, Brazil.
E-mail: luisleao@ufmt.br

Luiz Carlos Fadel de Vasconcellos
Fundação Oswaldo Cruz. Escola Nacional de Saúde Pública. Rio de Janeiro, RJ, Brazil.
E-mail: elfadel@globo.com

Correspondence
Avenida Fernando Corrêa, 2376, Bloco CCBS III, 2 piso, Boa Esperança. Cuiabá, MT, Brazil. CEP 78060-900.

Abstract

The globalization of the economy has changed the current productive pattern and new commodity chains are a central phenomenon in this new scenario. Commodity chains are processes of extraction, production, transport, distribution, consumption and disposal of goods and services. For their development To develop it governments make economic/financial investments, sometimes in direct confrontation with the protection of workers' health and the environment. This is due to the various social, occupational and environmental hazards, risks and vulnerabilities produced throughout these y chains. Surveillance in health, work and the environment has the challenge of facing these complex problems to ensure improvements to the conditions of life. The aim of this theoretical essay is to discuss strategies for surveillance of health, work and the environment, starting from the commodity chain concept as interwoven neta network of production-consumption. The article presents the major theoretical approaches for commodity chains, specifically, Supply Chain, Global Commodity Chain, Filière Analyses and Agribusiness, highlighting the knowledge areas involved. The article also discusses the fragility and the incipient intersection of health, work and environment surveillance knowledge and practices with the commodity chain thematic, demonstrating the need to elevateovercome the surveillance of products toward interventions in the entire commodity chain, through joint actions

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of surveillance organizations of the Brazilian National Health System (SUS). Finally, the article also highlights the role of academic circles, health services and populations in the implementation of these surveillances.
Keywords: Commodity Chain; Health Surveillance; Environment; Work.

Resumo

A globalização da economia alterou o padrão produtivo na atualidade e a formação de cadeias de produção é um fenômeno central nessa nova conjuntura. Cadeias produtivas são processos de extração, produção, transporte, distribuição, consumo e descarte de bens e serviços. Para o seu desenvolvimento existem investimentos governamentais econômicos/financeiros, por vezes em confronto direto com os interesses da proteção da saúde dos trabalhadores e ambiental. Isso porque são gerados diversos danos, riscos e vulnerabilidades sociais, ambientais, sanitárias e ocupacionais ao longo das cadeias. A vigilância em saúde, trabalho e ambiente tem o desafio de enfrentar esses complexos problemas para garantir melhorias para as condições de vida. O objetivo deste ensaio teórico é discutir estratégias de vigilância em saúde, trabalho e ambiente, partindo da noção de cadeia produtiva enquanto redes interconectadas de produção-consumo. O artigo apresenta as principais abordagens teóricas sobre cadeias de produção, especialmente, *Supply Chain*, *Global Commodity Chain*, Análise de *Filière* e *Agribussiness,* destacando as áreas do conhecimento envolvidas. Discute ainda a fragilidade e incipiência da interseção dos saberes e práticas da vigilância em saúde, trabalho e ambiente com a temática das cadeias produtivas, evidenciando a necessidade de superação da vigilância dos produtos em direção à intervenção em toda a cadeia produtiva, mediante a articulação entre as vigilâncias do SUS. Destaca-se também o papel da academia, dos serviços de saúde e das populações para a implementação dessa vigilância.
Palavras-chave: Cadeia Produtiva; Vigilância em Saúde; Ambiente; Trabalho.

Introduction

This article discusses the challenges of surveillance in health, work and the environment in the face of social, environmental and occupational impacts from the commodity chains in the current stage of a capitalist economy.

Globalized capitalism greatly altered the pattern of work organization. The Fordist paradigm, whose primary goal was mass production and inflexibility of a fragmented process, generating homogeneous products, fixed and collective employment contracts, in a predefined market with strong organized union movements by the working categories, shows its first signs of exhaustion in the 70s (Antunes, 1995). Since this period many variations of this Fordism have emerged, whose basic characteristics would be production by demand, intensification of working time, the need for multifunctional workers, the *kan-ban* system, emphasis on teamwork, creating new forms of exploitation (Antunes, 1995). In this new organization, the concentration of capital does not necessarily imply physical and geographical concentration of production space. Real networks were formed, ones which scatter through the territories without loss to production, due to the interconnections between the industry and its *stakeholders*— suppliers of inputs, raw materials, logistics and transportation companies, and shareholders etc.

The steps of a particular production process, even if geographically dispersed, connect in such a way that parts of one product may be manufactured at different locations of the globe and the final product may be consumed elsewhere.

This is a striking phenomenon in the current "networked society" (Castells, 2000), made possible by new information and communication technologies. This tendency of capitalism has been stimulating a network-shaped arrangement on a global scale in all spheres of life, especially in the economic one (Castells, 2000). Networks are the new social morphology of the contemporary world in which global capital is structured around a network of companies and financial flows. Networks are a set of interconnected nodes; open structures of unlimited expansion and a proper tool for the operation of the capitalist economy (Castells, 2000).

The economic expansion provided by the productive networks emerge in a context of deregulation, flexibilization and depoliticization enabled by the position of the neoliberal state. Unlike the "State of Social Welfare", States currently tend to let economy flow, reducing the guarantee of social policies. Opening borders to generate economic fluidity brings along socio-environmental, occupational, and health-related conflicts.

Developing countries are strongly affected in this scenario, because globalization and the implementation of new technologies through commodity chains connects markets in advanced countries but maintains crude contracts in developing countries (Frenkel, 2001). Companies started to extend their production processes to various places and regions, so that design, strategic planning, and marketing operations generally remain in developed countries and manufacturing operations in developing countries, exploiting workers by paying lower wages and avoiding labor laws (Frenkel, 2001).

The growth of this economic model is accompanied by new ways of producing social, environmental and health vulnerabilities threatening the systems that support life and changing territories, communities, and human groups. There is then a need to put this phenomenon under the microscope and ask pertinent questions from the point of view of public health, especially the surveillance of health, work and environment.

In face of this new economic and productive setting, the Brazilian government has the prerogative to ensure the health of the population through "social and economic policies aimed at reducing the risk of disease and other hazards and the universal and equal access to programs and services for its promotion, protection and recovery" (Brazil, 1988). After all, the health of the population expresses the social and economic organization of the country (Brazil, 1990).

In fact, several Brazilian public health organization laws recommend control actions on all stages of production processes, showing the need for intervention "in health problems arising from the environment, the production and circulation of goods and in providing services of interest to health, including [...] control of consumer goods [...] at all stages and processes, from production to consumption" (Brazil, 1990, p. 18055). The same State, whose mission is to ensure the health of the population, invests human, physical and financial resources to support the development of commodity chains in various sectors of national economy.

The commodity chain of agriculture in Brazil demonstrates these contradictions since this sector accounts for 5.5% of gross domestic product, 32% of exports and 17% of employment (OECD, 2013). On the other hand, agribusiness is stage for one of the major public health problems in Brazil—the environmental, social and occupational damages that arise from the use of pesticides.

Whereas the commodity chains bring striking effects on workers' health, the environment and the health of the population, it is important to consider—both in rural and urban areas—the range of environmental risks, of illness at work, food and consumer products, relationships between living conditions and health, among other determinants of population health, which requires the attention of surveillance in health, work and the environment.

It is, therefore, necessary to advance the discussion of surveillance in health, work, and the environment with special attention also to the crucial role of the population in promoting actions and resistance to development models.

This article aims to discuss surveillance strategies starting from the commodity chain concept as interconnected networks of production and consumption. We start first from a discussion of the main emphases in the production of knowledge about commodity chains, to, then, highlight limits, challenges and potential for surveillance. We intend to contribute to the debate between the various stakeholders interested in the progress of surveillance in health, work and the environment in Brazil.

About commodity chains

Commodity chain is the "set of activities that progressively articulate from the basic inputs to the final product, including distribution and marketing, like links of a chain" (Brazil, 2010, p.1).

This concept covers different areas of knowledge such as agronomy, animal science, geography, man-

agement and production engineering, social and economic sciences. There are various theoretical and methodological approaches such as the Filière analysis, Supply Chain, and the Global Commodity Chain.

The Filière analysis, developed by French researchers from the *Institute National de la Recherche Agronomique* (INRA) and the *Centre de Coopération Internationale en Recherche Agronomique pour le Développement* (CIRAD), emerged in the 60s in studies on French trade and agriculture (Raikes et al., 2000). This approach has brought together a number of research traditions in industrial organization, institutional economics, and Marxist economics. It could be considered a set of studies that have in common the use of the chain (*Filière*) concept as a tool for their analysis, for Filière describes studies in which a product is monitored over a range of activities, from the producer to the end consumer (Raikes, Jensen; Ponte, 2000).

The commodity chain concept is also related to the notion of Agribusiness. This term refers to the set of all operations that involve the production and distribution of inputs for rural activities, such as storage, processing and distribution of agricultural products and by-products (Castro et al., 1998).

This notion first appeared in the *Boston Conference on Distribution of Agricultural Products* in 1955 and was consecrated with the book - *A Concept of Agribusiness*, published in 1957, authored by Davis and Goldberg, coming to enlarge the usual watertight analysis of farming (Castro et al., 1998).

The commodity chain design also brings us back to Wallerstein and his World-System Theory, which was deepened by Gereffi in the Global Commodity Chains approach (Araki, 2007) which multiplied in several studies carried out in the 1980s.

The expression gained greater prominence with the publication of *Commodity Chains and Global Capitalism*, by Gereffi and Korzeniewicz (1994), which presents a conceptual and methodological overview of this topic. Such an approach seeks to understand how global industries are organized and seeks to identify the set of actors and firms involved in the production and distribution of goods, by mapping the relationship types among them (Bair, 2005). For these authors, analyzing commodity chains is "a path to understanding the relationship between different actors and activities involved in the creation of goods and services in the global economy" (Bair, 2009, p. 2).

The Global Commodity Chain (GCC) is a theoretical and methodological perspective that focuses on the configuration of commodity chains in the global market with economic emphasis, using analyzes to improve efficiency and competitiveness.

From this perspective, prospective analyzes are carried out to identify the factors that condition quality of products in each link of the chain, to develop economic strategies that increase competitiveness (Gomes; Rücker; Negrelle, 2004).

This same emphasis is present in the commodity chain concept, which predominantly focuses on the relationships between suppliers and customers, with an emphasis on inputs and material production and marketing processes, which includes "all interactions between suppliers, manufacturers, distributors and customers" (Zegordi; Nia, 2009, p. 928). This approach emphasizes the methods, tools and supply management techniques that enable the analysis of the integration of production and distribution of goods.

Some social science approaches criticize these economic emphases for not considering social factors in their analysis, such as social inequalities in production processes. In these studies, the main analytical axis is the social determinants underlying the genesis, structure and evolution of global supply chains (Starosta, 2010), for we cannot disregard the social processes along them in order to unmask the commodity chain (Ciccantell; Smith, 2009).

In these sociological analyzes, the gender category is also highlighted, since in various links of the commodity chains there are precarious working conditions and unequal relationships, demonstrating a clear sexual division of labor, with women and even children being exploited in the productive base of various brands (Ramamurthy, 2004). The marginalization of women, the wage inequality, the prevalence of informal work, the lack of labor contracts and rights are more evident, at the beginning and end of the commodity chains (Saidul, 2008).

Throughout the commodity chains, in addition to the flow of materials and actors involved in the entire process, and the costs of production and

income distribution along the chain, there are environmental and social impacts and various poverty situations (Rudenko, Grote; Lamers, 2008).

In a general manner, these sociological analyzes start from issues that differ greatly from the purely economic view. The concern is in investigating whether "the increase in exports of manufactured goods from developing economies contributes to the welfare of the workers that make them" (Heintz, 2006, p. 507) and realizing "that human relationships are present behind the commodity chains" (McCook, 2008, p. 268). These studies are important revealers of situations of vulnerability and lack of good working conditions in the labor market.

Regardless of the theoretical approach, the concept of commodity chain refers to the full range of actors, institutions, operations and activities relating to the production, distribution, consumption and disposal of goods and services, from initial to final stage.

This insight into the productive links allows us to realize both economic, material flows from the logistic and efficiency standpoints and unfair and iniquitous social relationships from a health, work and environment perspective.

In Brazil, several commodity chains that cross both urban and rural environments—such as the sugarcane, soybeans, steel and aluminum chains bring social health problems such as poor transportation of workers, criminal fires, child labor exploitation, exposure to poisonous animals and other factors and situations of vulnerability (Peres, 2009).

Public health in Brazil, however, needs actions, programs, health and environmental control strategies for these chains from a workers' health and environmental point of view.

The challenges for the surveillance of the commodity chains

Public health surveillance is an area that seeks to analyze the health conditions of the population seeking intervention, preventing risk factors, events, injuries and diseases and promoting quality of life. It emerged in the eighteenth and nineteenth centuries, influenced by public health specialists like Johann Peter Frank in Germany, Sir Edwin Chadwick and William Farr in England, among others, with emphasis on the collection and interpretation of information about illness, death and living conditions. And during the twentieth century it developed as a separate field in public health (Declich; Carter, 1994), expanding knowledge on infectious diseases and microbiology, with the basic characteristic of trying to detect symptomatic processes aiming to isolate individuals and groups.

In the Brazilian context, the subject of health surveillance, considering the relationship between health-work-environment, has close ties with the field of occupational health. Occupational health is a group of knowledge and practices focused on research into the process of work and its relation to the health-disease process. It emerged in the historical context of social struggles of the 70s and the Brazilian Health Reform (*Reforma Sanitária Brasileira*), influenced by the Italian Workers' Movement and the Latin American Social Medicine.

This area reaches an institutional level with the creation of various structures, services, and occupational health programs in the public health system, and in university hospitals of different regions during the 80s—a period during which some experiences with surveillance in health, work and the environment were carried out. However, the implementation of health surveillance actions on the health, work and environment relationship has been a challenge.

Primarily because health surveillance as a whole is a controversial topic in Brazil, with great barriers on the integration of health, environment, epidemiologic surveillances and occupational health in the institutional field. The fragmentation of the surveillance systems in SUS (environmental, sanitary, epidemiological) and water, air, chemical exposure and disasters monitoring programs (Machado et al., 2011), among others, in addition to the SUS emphasis on care are chronic issues that hinder integrative and more impactful actions.

Regarding commodity chains, the complexities and challenges increase, since the mission of surveillance is to analyze and intervene in processes that generate damage to the environment, to the health of the population, including the working population.

One problem is that occupational health surveillance has historically developed mainly around the industrial sector. Its methodologies generally focus on industrial work relationships and the environment. And the commodity chains cover both industrial and agriculture sectors and services and this poses the challenge of developing new intervention methods for surveillance.

In addition to this methodological challenge, the advance of intervention actions faces institutional obstacles such as lower than needed funding rates, the overwhelming workload of surveillance teams in health departments, and the struggle to stimulate intersector actions between governmental agencies, and regional instances—which often have interests that go against surveillance around the conflict capital-work-environment.

In addition to responding to internal demands of the public health field (fragmentation and prevalence of care), health surveillance needs to respond to external issues. In other words, it needs to position itself in theory and practice in the face of the current moment of capitalism and consequent phenomena such as globalization of the economy and its impact on the labor market.

Production of knowledge on the surveillance of commodity chains is still very limited in Brazil. Some authors, however, have developed analysis that contribute to fill this gap, as Pignati and Machado (2011) by describing the impacts of the agribusiness commodity chain and Leon (2011) by proposing subsidies for the implementation of integrated practices in health, work and the environment in commodity chains. Other steps need to be taken towards developing new strategies that aim to overcome the limitations of the current surveillance setup in health in the Brazilian National Health System.

A major limitation is the remarkable emphasis, both in the production of knowledge and the practices of services in the health surveillance of products. The final product is usually object of surveillance at the expense of its commodity chain.

There are many analysis and health surveillance practices active in the food commodity chain, especially in the production of pig (Simeoni et al., 2008), chickens (Naleiro et al., 2009), vegetables (Takayanagui et al., 2006), mussels (Pereira et al, 2007), milk (Olival; Spexoto, 2004), among others.

Most practices and studies seek to assess the contamination caused by biological agents (specifically certain bacteria). They consider the importance of surveillance intervening at all stages of the commodity chain only based on the cumulative risks of contamination in the successive production links (Simeoni et al., 2008; Naleiro et al., 2009; Takayanagui et al., 2006) as well as on the need to develop food quality certificates (Bustos, 1999). This problematic even marks some international meetings promoted by institutions such as the Pan American Health Organization (OPS, 2005) that emphasizes the importance of ensuring that safe food is provided through programs and strategies such as the *Programa Nacional de Monitoramento da Qualidade Sanitária de Alimentos*[2] - PNMQSA, the *Programa de Análise de Resíduos de Agrotóxicos em Alimentos*[3] – PARA, and the *Programa de Análise de Resíduos de Medicamentos Veterinários em Alimentos Expostos ao Consumo*[4] - PAMVet also stressing the need for zoonosis and contamination control with the goal of food security.

Surveillance of these commodity chains stems from the need to intervene in the production and trade of food, but the focus is on the health of consumers at the expense of the health of workers and the environment. The emphasis is on controlling and preventing the contamination of food in order to provide safety to the consumer population.

Despite the focus given to the importance of analyzing the commodity chain as a health protection factor, avoiding cumulative contamination, we see a gap when it comes to the health of workers and the environment. Since these analyzes are limited to the risks to the health of the consumers of food products, its focus is on the health of the product and not on the health of the worker that produces it.

2 National Program for Monitoring Sanitary Quality of Food

3 Program that Analyses Pesticide Residue in Food

4 Veterinary Drugs Residue Analysis in Food Exposed to the Consumer Program

Product health surveillance signals, thus, a protection to the market itself, since it does not include the creation and implementation of policies that focus on surveillance of health, work and the environment that cover consumers, but also workers and the environment.

The unilateral focus on consumer health is not expressive given the social, health and environmental problems that exist throughout the commodity chain and which also affect the health of workers and the environment. This practice is, ultimately, a product surveillance, since the emphasis is on the welfare of the good at the expense of social relations and factors that condition and determine public health linked to the processes, activities and operations within each link in the food commodity chain.

With this in mind, to what extent would the protection against the risks of contamination of a food product not be a market protection itself? Historically, the creation of state health surveillance tools is related to expansion, progress and development of Brazilian economy. The emergence of the need to inspect products at ports, for example, is related to the export of Brazilian products that need to be safe and of quality, so as not to undermine trade relations with the international market. Although surveillance has taken a new form in recent years, it has certainly not lost this original characteristic. And perhaps the interest of protecting the market will hinder the advance of policies and health surveillance actions aimed at ensuring quality of life, equality, citizenship and social justice at the expense of purely economic development.

The fact is that the design of the commodity chain, in the entire dimension, has not been considered in health surveillance in Brazil. There is a weakness in the conceptualization of this term in the health field, because despite the use of this expression, there is no greater conceptual rigor or dialogues with the theoretical approaches of the concept.

We must seek to overcome the surveillance of products and start surveillance of the commodity chains, considering that this may be an important object of integration of SUS surveillances and other governmental actors and popular organizations in the search for actions that go beyond institutionally segmented practices, present in the disconnection of the surveillance in health, the environment, epidemiology and occupational health. In the end, State intervention should be in the scope of the relations of production and consumption in a systematic way and the disarticulation and fragmentation hinder the emergence of more integrated actions (Souza, 2007).

An important step in overcoming surveillance restricted to products would be the development and implementation of tracking mechanisms, from the perspective of health, of a determined produced good. The intention would be to create techniques and identification procedures of the pre and post-marketing links. Thus, from product (food, for example) inspection activities, it would be possible to follow the commodity chain unveiling the main and priority health, work and environment conditions present. Similar methodologies exist, generally linked to the guarantee of quality of origin certification of a product. There are even traceability systems applied to various commodity chains. In the wine commodity chain, for example, this system is used as an indicator of food security and allows you to generate and disseminate information that would enable you to trace the history of a bottle of wine from the plantation of the grape to the moment of consumption (Porto; Lopes; Zambalde, 2007).

Articulations of social movements in search of health and environmental control of commodity chains are also essential for the advancement of surveillance in health, work and the environment.

An example of the possibility of a State/population integrated surveillance in health, work and the environment on a commodity chain can be seen in a social articulation occurred since 1992 in the region of Carajás in Maranhão, which showed great intervention potential.

The region had been hit by social and environmental impacts arising from industrial projects deployed (Santos, 2009). The situation mobilized a number of national and international stakeholders, resulting in a movement that enabled the creation of the "Dialogue on aluminum, global responsibility, from extraction to consumption" program, which had the purpose of studying the aluminum commodity chain and "establish new control and

monitoring mechanisms for the projects" (Santos, 2009, p. 37). The problems caused by the aluminum chain drove many social and governmental stakeholders resulting in advances from the social-health-occupational point of view.

Another example of this reality can be seen in the sugarcane commodity chain in the State of Rio de Janeiro. In the face of modern-day slavery seen in this sector, social movements formed a popular committee to eradicate it that, since 2003, has been able to articulate the termination of several precarious accommodations and several other cases of slavery were addressed. This was also due to the increase in the action of tax auditors from other parts of Brazil for the activities of the Mobile Inspection Group. In fact in 2009, surveillance was so intense that Rio de Janeiro was considered the national champion of slave labor (Leão, 2015).

The exposure of slavery cases in the media, and academia, and the public recognition by State lead an important fuel producer group in Brazil not to buy alcohol produced by a plant in this region that employed slave labor. This action from the commodity chain was a breakthrough for combating the problem (Leão, 2015).

If, on the one hand, there is a network that generates vulnerabilities, there are also networks to combat the impacts of production, articulated at national and international level. And public participation in continuous and systematic movements of articulation and attention to situations that impact health, work and the environment along the commodity chains is central to popular health surveillance, both to identify risks and to implement actions of transformation of work processes.

Another important issue for the development of surveillance actions is to place a work process analysis (even the factory) before its commodity chain.

Dias et al. (2002) conducted a study in the Jequitinhonha Valley in order to identify the main risk conditions for human health in the manual production process of charcoal and its possible effects on workers' health. By situating this process in its commodity chain, it was possible to identify steel mills with international certifications and handmade charcoal companies with huge exploitation of workers, including children and adolescents, in addition to the destruction of the *cerrado* and social exclusion of small farmers.

In a same commodity chain, significant differences in employment relationships can be identified. For Mendes and Campos (2004), the focus on the commodity chain is a way to relate formal and informal sectors the economy. "Informal work does not exist randomly, it makes up the commodity chain in the formal sector, understood here as the set of activities that are organized progressively from the basic inputs to the product, distribution and marketing, as links in a chain" (Mendes; Campos, 2004, p. 213).

The poor conditions of health and safety in informal work show, in a way, the limits of intervention of the supervisory bodies, who cannot yet look at the commodity chain. "[...] The revisiting of the concept of 'commodity chain' and 'cluster', which could be the two basic criteria for the development and implementation of health and safety policies for and with informal workers, within a solidary, interdependence and cooperation vision" (Mendes; Campos, 2004, p 221.).

So, from the commodity chain concept and the discourse of corporate social responsibility, informal workers linked to industrial activities as suppliers, contractors, distributors, sellers and consumers "should be considered as 'partners' and strategic 'stakeholders' also in critical and vulnerable areas of the current labor informality, particularly in the field of health and safety at work" (Mendes; Campos, 2004, p 221.).

Observing the entire commodity chain is crucial to identify situations in certain productive branches, not easily detected by health surveillance, such as informal, children, domestic and slave labor. Thus, analysis and intervention practices in commodity chains from a public health point of view can bring alternatives for dealing with vulnerabilities, risks, social, environmental, health and occupational damage increasingly acute, complex and problematic in the Brazilian context.

Final remarks

Recognize the importance of interventions on all stages of commodity chains requires new steps of identification of theoretical and methodological elements to support practices and ways to perfor-

mances on the links that constitute them. It is not enough to state the importance of monitoring supply chains and the realization of interventions in all links. It is necessary for the academy to help in the development of technologies that can overcome the lack of methods for surveillance practices.

Dialogue with the theoretical and methodological perspectives on commodity chains, such as Supply Chain, Global Commodity Chain and approaches of the social sciences can be crucial in this process.

The preparation of planning studies and management in health, to create techniques to control commodity chains from the health point of view, incorporating these logistics and management discussions, can contribute to creating new methods of intervention for health surveillance.

Considering the hegemonic economic vision on the theme of commodity chains, public health can develop intersections with this field generating novel transdisciplinary knowledge, including the prospect of participation of social and popular movements in surveillance practices.

Indeed, the approaches of the social sciences have contributed to the expansion of the strictly economic discussion of commodity chains, to the consideration of social and environmental factors. This approach can help in bringing the issue of commodity chains to public health, which has as one of its epistemological pillars the social sciences.

Finally, it is necessary to emphasize the scarcity of academic research of empirical nature linked to surveillance activities. This reflects the gap between the production of knowledge in the academic field and in the state apparatus responsible for public actions of health surveillance intervention.

While the State, through its interventionist apparatus, has an immeasurable capacity to produce knowledge for reality transforming actions, the exploratory nature of these actions is not accompanied, as a rule, by technical and scientific bodies of knowledge production in health, such as universities and research institutions. Because it is a public act, backed by police power, health surveillance, in most cases, ends in self-absorbed operative acts that do not harmonize with the principles of integrity, action research, intersectionality, and systemic perspective that guide the Brazilian healthcare system.

In a similar way, the ability of academia to produce knowledge is reciprocal in a scale that is not consistent of social needs of the areas of health-work-environment. After all, many areas of knowledge, such as economics, for example, have developed approaches to analyze commodity chains aimed to prospectively evaluate their market potential and enable better flow of materials, products and people, among other things and the production of knowledge in occupational health and environmental health surveillance has not developed analyzes in that direction.

This article demonstrates the need for the production of knowledge on commodity chain from the point of view of public health and surveillance in particular. The lack of interfaces between the surveillance and the main theoretical approaches on this issue points to the need for public health to conduct other investigations, including the effect of subsidizing new public policies and public actions of surveillance in health, work and the environment in commodity chains.

In addition to the size of the scientific production, the inclusion of this issue on the agendas of training and education in health among the Centers Of Reference in Workers Health and other institutional actors and of social control responsible for surveillance in health, work and the environment would offer subsidies for the broadcast of new experiences of investigation-interventions in commodity chains.

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