Original Article

Health and environment in public policies of tobacco farming municipalities in southern Brazil

Saúde e ambiente nas políticas públicas em municípios que cultivam tabaco no sul do Brasil

Salud y medio ambiente en la política pública en municipios cultivo de tabaco en el sur de Brasil

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ABSTRACT

Objective: To analyze the challenges and potentialities for the development and implementation of local public policies that focus on the relationship between the use of pesticides, the health of the rural population and the environment in tobacco producing municipalities in southern Brazil.

Methods: Qualitative case study research conducted at three major tobacco producing municipalities, by means of semi-structured interviews with seven actors involved with municipal healthcare. Data were subjected to thematic analysis.

Results: The studied issues are not among the priorities for the local public policy. However, municipalities have introduced initiatives involving actions on the use of pesticides that are articulated with contining education and intersectoral action.

Conclusions: Actions to protect the health of farmers must be combined with sustainable development, which would also help achieve the Millennium Development Goals (MDGs).

Keywords: Millennium Development Goals. Agrochemicals. Rural population. Public policies.

RESUMO

Objetivo: Analisar os desafios e as potencialidades para o desenvolvimento e a implementação de Políticas Públicas Locais que enfoquem a relação entre o uso do agrotóxico, a saúde da população rural e do ambiente em municípios produtores de tabaco do sul do Brasil.

Métodos: Pesquisa qualitativa do tipo Estudo de Caso, realizada em três municípios produtores de tabaco, por meio de entrevistas semiestruturadas com sete atores envolvidos na atenção à saúde municipal. Os dados foram analisados por meio da análise temática.

Resultados: A problemática em estudo não está entre as prioridades para as Políticas Públicas Locais. Contudo, os municípios apresentam iniciativas que envolvem ações sobre o uso de agrotóxicos, articuladas com a educação permanente e ações intersetoriais.

Conclusões: Ações para proteger a saúde dos produtores rurais estão necessariamente amalgamadas ao desenvolvimento sustentável, neste sentido, a agenda pública atenderia os Objetivos de Desenvolvimento do Milênio (ODM).

Palavras-chave: Objetivos de Desenvolvimento do Milênio. Agroquímicos. População rural. Políticas públicas.

RESUMEN

Objetivo: Analizar los retos y potencialidades para el desarrollo e implementación de políticas públicas locales que se centran en la relación entre el uso de pesticidas, la salud de la población rural y el medio ambiente en los municipios productores de tabaco en el Sur de Brasil.

Métodos: Tipo de caso estudio cualitativo de investigación realizado en tres municipios mayores productores de tabaco, a través de entrevista semiestructurada con siete actores involucrados a la atención de la salud municipal. Los datos fueron analizados por medio de análisis temáticos.

Resultados: El problema objeto de estudio no está entre las prioridades de las políticas públicas locales. Sin embargo, los municipios tienen iniciativas que abarcan acciones sobre el uso de pesticidas, articulados con la educación continuada y la acción intersectorial.

Conclusiones: acciones para proteger la salud de los agricultores están incluidas en el desarrollo sostenible así, la agenda pública también se uniría a los Objetivos de Desarrollo del Milenio (ODM).

Palabras clave: Objetivos de Desarrollo del Milenio. Agroquímicos. Población rural. Políticas públicas.

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INTRODUCTION

In 2000, when world leaders at a meeting decided to establish a global agenda of minimum commitments for the promotion of human dignity, the world began to focus actions on fighting the enemies of humanity, such as poverty and hunger, gender inequality, communicable and preventable diseases, environmental destruction and poor living conditions[1]. The eight Millennium Development Goals (MDGs) were created to guide this joint strategy between the State and society, and they are monitored and evaluated using indicators that represent, in numbers, the multiple socioeconomic dimensions of each country.

Quality of life and respect for the environment is the 7th MDG[1-2]. This MDG is of notable interest to the field of health since the transformations in the territories caused by production processes affect the conditioning factors of health and the health-disease process of the population[3]. The implications of the environment for health have gained added visibility for the agenda of the field of health. However, actions that address the environmental determinants on health have been neglected, especially in relation to reducing key environmental risks, including exposure to air and water contaminated by chemical waste or due to insufficient access to basic sanitation[4].

Although environmental and health problems are global in scope, most actions require local strategies, therefore different social structures and policies are necessary to understand and manage these problems[5]. Similarly, working with the issue of pesticides and their relationship with human health requires extended approaches, practices and reflection.

The debate that surrounds the use of pesticides in agricultural production includes several fields of knowledge, from economy and social development to the field of health. In the field of health, this debate addresses the growing contamination of soils and water, the reduction of biodiversity, the illness of workers and the urban population and the occurrence of accidents, human poisoning, cancers, malformations and cases of suicides related to acute and chronic exposure to pesticides[6-7].

One of the crops that use pesticides on a large scale is tobacco. Brazil is the world's largest exporter of tobacco leaf and the state of Rio Grande do Sul is Brazil's largest producer[8]. Literature indicates that the migration of tobacco production from developed countries to developing ones is an industry strategy to maintain and strengthen the oligopoly favoured by the fragile economic, environmental and labour policies of these countries[9]. Another concern is the extensive exposure of farm workers and the environment to pesticides that have little toxicological information, including some products that have been banned in Brazil and are sold under the counter[10].

Given the effects of pesticides used to cultivate tobacco on human and environmental health, we believe this subject should have greater prominence in public policies. Thus, the guiding question of this study was the following: What are the local intersectoral actions that target the use of pesticides and the health of farmers and the environment? Thus, this study aimed to analyze the challenges and the potential for developing and implementing local public policies that focus on the relationship between the use of pesticides, the health of the rural population and the environment in tobacco producing municipalities in southern Brazil.

METHODOLOGY

This is a descriptive case study[11] that aims to describe the phenomenon in its context, in this case the public policies that focus on the use of pesticides and their relationship with human and environmental health in tobacco producing municipalities. Three municipalities were intentionally selected to analyse the objectives of research, taking into account the amount of tobacco leaves produced in tonnes according to the micro-regions used by the Fundação de Estatística e Economia do Estado do Rio Grande do Sul (FEE/RS), the statistics and economy foundation of the state of Rio Grande do Sul, Initially, three micro-regions with the highest production of tobacco leaves were selected to establish the three municipalities with significant production in each region, as follows: the first municipality (M1) with tobacco producing tradition since the decline of the smoke production of Bahia in the 1950s; the second and most recent municipality (M2) established after the decline of the production of peach, with a tradition of family agriculture and relevance in the production of tobacco in the last 10 years; and the third municipality (M3) with the smallest tobacco production, but with emphasis on monocultures such as rice[12].

Semi-structured interviews were conducted at the three municipal secretariats of health, with a primary care coordinator of one of the municipalities and three health professionals who worked at the health inspection departments and were indicated by the municipal secretariats. In all, seven participants of the health sector were interviewed. The interviews were recorded and conducted at the municipal secretariats of health of each municipality, between March and December 2014, during working hours and according to the interest and availability of the

participants. The script contained questions on municipal actions in relation to the use of pesticides and to human and environmental health, the sectors involved in these actions and the difficulties and potential found by the participants to carry out the actions. Data were analysed using the thematic categorization proposed by Minayo[13], and NVivo8 software to facilitate viewing, encoding and storing of data.

This analysis is part of a larger study that has a qualitative step and a quantitative step, titled, *Impactos do Cultivo do Tabaco na saúde do trabalhador e na qualidade do solo e da água em propriedades dos municípios da "Metade Sul" do Rio Grande do Sul.* The research was financed by the Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS), call FAPERGS/MS/CNPq/SESRS n. 002/2013. This study was approved by the Research Ethics Committee (CEP) of the da Universidade Federal do Rio Grande do Sul (UFRGS) in March 2014, under Opinion No. 555.912, and all participants were informed of the research and signed an informed consent statement.

RESULTS AND DISCUSSION

The results were arranged along two main axes: **The Challenges** and **The Potentialities** for the development of local actions that focus on the relationship between the use of pesticides, environmental protection and health of the rural population.

The three studied municipalities produce a representative and growing amount of tobacco in their regions, but differ in relation to the background of tobacco cultivation, as highlighted above, and in relation to the variety of crops at make up the Gross Domestic Product (GDP), as in the case of M3 that has other important monocultures. In relation to the population distribution, the percentages of the population that live in the rural areas are 24% for Municipality 1 (M1), 56% for Municipality 2 (M2) and 20% for Municipality 3 (M3)[1]. With regard to the health services for these rural populations, only M1 and M2 have teams that travel to each location every week. In M2, the health team travels to the interior of the municipality, but they do not cover all the locations although more than half of the population lives in the countryside. Consequently, the study has a complex scenario with several peculiarities that must be addressed by the local public policies. It is precisely this diversity that prompted interest in the potentialities and weaknesses of these issues.

Below, for each of the axes mentioned previously, a description of the thematic categories that emerged from successive readings of the collected material that observes the 7th Millennium Development Goal: Quality of life and respect for the environment.

The axis of Challenges

The demands of Programmatic Actions versus Local Demands: "we don't have the structure for all of this"

The statements of the municipal representatives revealed the existence of a latent concern to suit both the demands arising from programmatic actions established by the Ministry of Health and/or State Secretariat of Health, and any emerging local health demands. However, local issues, which are often dynamic and unique, such as the issues that involve the relationship between the use of pesticides in the production of tobacco and health, are not a priority in the an agenda, shared with other governmental bodies, that is more easily executed, both financially and in terms of staff and expertise. The specificities of the reviewed municipalities are related to tobacco production, so the focus on the relationship between the use of pesticides and the health of the environment and of the rural workers/populations should be one of the priorities of any local health-related public policies. In addition to the difficulty in prioritizing this issue, other problems related to rural areas fight for space in the pesticides agenda. The challenge is to break with the established macropolitics and work with the demands that emerge from the territory. The following report signals this thought:

> *There's no work in the municipality on this [pesticides]. I don't know, today, what the percentage would be, but some time ago 85%, 90% of the farmers grew tobacco. [...] you have to have a policy for it. This is a process, and we don't have the structure for all of this. Today, our priority is organizing primary care [...] we have other issues in the field that are not only related to cultivation, right? There is the question of the exploitation of child labour in the countryside [...] the growing demand for drugs, right? [...] We do what we can. But it has to be done we know that, too. (M3)*

In addition to the statement above, it is important to highlight that another study[14] identified that there is no political interest in investigating and conducting public health actions related to the agribusiness production chain, mostly because it is considered a source of job generation and income for the population. Literature suggests that more stringent and systematized surveillance actions can go against the interests of companies, directly cause the reduction of annual agricultural production, and generate

friction between the health sector and the municipal public power[14]. This, in turn, directly entails the governance of environmental health to propose alternatives for sustainable development[15].

When the detected health actions were effective, they targeted acute work-related aggravations related to tobacco, such as Green Tobacco Sickness (GTS), which has a code in the International Classification of Diseases (ICD) and has a well-defined symptomatology[e]. Care for GTS is already well established in the city where tobacco has been cultivated for the longest period. Direct and indirect poisoning with less characteristic symptoms or with symptoms that are governed by another specific disease classification, as in the case of diseases caused by pesticides, are ignored in all municipalities. This is caused by the inability to recognize the impact that pesticides have on the environment and, consequently, on human health in the short and long term, and the lack of more accurate diagnostic tests and more incisive programmatic actions that offer technical training for health professionals, as pointed out in the following statement from one of the participants. This situation causes significant concern from the standpoint of quality healthcare, whereas technical training is important to identify the cases of poisoning[7].

> *The doctors tell us about poisoning by green tobacco sickness. They didn't do that before because the disease only had an ICD in 2008, 2010. That's when we had to train all the doctors and talk about the disease, and that they must notify us even when they are unsure. Based on the notification, we go there, collect samples and run test to check if it's the disease or not. But it has worked well. We've already collected lots of samples. (M1)*

The agreement to achieve an MDG, such as the 7th goal, offers limited indicators to analyse how the deficiencies surrounding environmental (non) sustainability are established, the extent of their impact on quality of life and how to fight them locally or even regionally[15]. A local analysis of the public health policies and their relationship with environmental issues reveal other problems that must be addressed, such as chronic poisoning by pesticides. Although access to sanitation and clean water are fundamental, the quality of these goods is increasingly affected by the use of pesticides. This is the result of broader processes that also involve citizenship and governability[15], given the need of society and the State to recognize the risks of poisoning and contamination of rivers and water sources by pesticides.

Imperfections in Local Planning: "planning isn't part of our practice"

Another challenge pointed out by the participants is related to the practice of health planning that overlooks the use of local indicators.

> *[...] If you are going to plan how to build your house, you have to know at least the size of the land. These data, they are not routine, people have to get the data and show the importance of having this information. Planning isn't part of the process at the department, there is none [...] (M3)*

In addition to the evident absence of a tradition of systematic planning, a limit for designing local actions is related to the availability and use of environmental and health information[7]. A critical point of the municipalities is the lack of indicators already agreed upon and incorporated into public health policies that can be used to analyse health situations and provide an overview of the impact of pesticides on soil and water quality, and of possible human poisoning of workers from rural areas.

> *The symptoms of pesticide poisoning are reported, but not for pesticide poisoning, for food poisoning. There is no test to tell whether it's pesticides or not, so it is difficult, unlike cotinine [...] So when he scatters poison on the crops and feels bad the next day, the doctor writes "possible pesticide poisoning", but it is something we have no way of knowing. Not even if it's from the water. We did some research on whether there is a test to collect water, but there isn't one. It's hard to say if it is pesticide, if it's green tobacco or if the guy ate a hot dog and got sick. (M1)*

The markers are important to support the necessary interventions, but they are still flawed. They are also costly for the municipality or inconsistent regarding pesticide poisoning in terms of the environment and health. The effects of tobacco on human health with regard to occupational exposure to nicotine are well established, and some actions are being implemented to prevent, diagnose and treat GTS. However, acute and chronic poisoning by pesticides, children's cancers like leukaemia, tumours in the central nervous system and non-Hodgkin's lymphoma [6-10, 16-18] still occur without an effective public action that relates these aggravations with a systematic debate on the effects of pesticides on the environment and on human health.

[e] GTS is caused by the stimulation or inhibition of receptors in the central nervous system leading to vomiting, nausea, dizziness and headache, abdominal pain, diarrhoea, and changes in blood pressure and heart rate during or after exposure to nicotine[15].

Managers empirically recognize the harmful effects of pesticides on human health, but still have difficulties proving this relationship and, consequently, have problems planning joint actions with other priority sectors to prevent and monitor these aggravations.

> *To prove to CEVS that we have the disease, we need to deliver the tests to prove it. We also have a high suicide rate here, that we think can be related to this [pesticides and tobacco growing]. We think it's the culture that influences this. We think there is a connection with long-term poisoning [...] (M1)*

> *We have a high suicide rate in the municipality, and it is something that should be closely studied because we have nothing to really consolidate these numbers, only the records of the civil police. (M2)*

The unavailability of data that could create indicators for analyses in healthcare is common, even in the case of aggravations caused by other substances. The MDG National Report[1] recognizes that the UN indicators used for the development goals do not always express the scope of these goals in an appropriate manner. This is evident when one examines the 7th MDG that focuses on reducing by half the proportion of the population that does not have permanent and sustainable access to drinking water and sanitation. To assess this goal, the adopted indicator was the percentage of residents in urban and rural households with drinking water through a general supply network. There is no information on the drinkability of the water for rural areas[1], but it is precisely in this region that water is obtained from springs and wells.

Contrarily to the situational diagnosis and planning of actions that seek to address the relationship between environmental health and human health in a broader manner, the interests of the market, which in the case of this research is represented by the tobacco industry, *"are under a lot of pressure to hide these things, pretend they don't happen"* (M1). Currently, there is some tension in the municipalities of tobacco producers between the public interest, which must be defended by various sectoral departments that represent the State in the pursuit of the common good, and the economic interests of the market. The municipalities selected for this study did not disregard the impact of tobacco on tax collection, which brings economic benefits, however, the initiatives that promote economic development with environmental sustainability are scarce or practically non-existent. When discussing the diversity of cultivation and the preservation of biodiversity, one of the participants stated that, *"the idea is to produce, but with health"* (M1). As pointed out previously, the economic interests can negatively affect local initiatives to promote the supervision and monitoring of the effects of pesticides on human and environmental health, as observed in another study[14].

However, executing and designing actions that agree with market arguments is still a challenge, as expressed in the following statement. This challenge, however, must be assumed by society, farmers and, above all, the State, which protects the rights and health of the population.

> *Some schools are respected for the quality of the teaching, the access to technology. One of the goals of the course is to establish youths in the countryside. But who provides the equipment? It is all very first world [...] They get there, there is a boarding system, and they are immersed in it. Then they leave, they go back home and apply what they learned in their homes. The tobacco growing industry pays for the school. But it is considered cutting edge. And what happens when you are faced with something this size? (M3)*

The proposal of an agenda to protect the health of farmers, regardless of the disputes, could be established to meet the MDGs and help promote a more sustainable form of development in the next millennium. However, it is also necessary to consider local complexities, their peculiarities, knowledge and practices, which translates into insufficient public policies with the incorporated local dynamics. Turning our attention to the environmental determinants in a more comprehensive manner could help promote an interaction between the State and society that is more integrated into the lives of people.

Public health inspection and Healthcare at their limit: "it's impossible without the human resources"

Insufficient data, especially in relation to intoxications and the use of pesticides from the health inspection services, as revealed in the statement below, was associated to the high demand of work of the professionals that, as already mentioned, is linked to a programmatic agenda that is not based on the local specificities. Furthermore, accountability for the actions of the epidemiological inspection and worker and environmental health authorities often falls upon a single subject. When this professional leaves the assigned position, the actions of these specific areas are discontinued.

We have an environmental inspection that is health, also, that works a lot more with Chagas disease and dengue fever [...]. We have VIGIÁGUA here, and there is a collection, every month samples are collected, but there is nothing specific for the workers and the use of pesticides. [...] and this year we reported some things that had licenses for an undefined period, which is wrong, and then we started to do the annual renewal. Health inspection was a little overloaded, and then there was drugstore inspection, and now we're electing a person for workers' health. (M2)

In addition to the lack of staff for the inspection activities, there are reports on the difficulty of finding professionals in healthcare, especially in rural areas. This impairs broader actions that focus on the relationship between environment and human health. However, the managers recognize that a sufficient number of people will not suffice if there are misunderstandings about the relationship between environment and health.

But we're still struggling to build teams of the family health strategy. We started under this government in 2013, and there was a culture of emergency services in the interior, so this mobile unit would go there every 15 days, once a month, and assist around 40 people during that half-day shift. So if you're going to think of quality, problem-solving, you're not going to manage that, right? [...]. The resource structure and everything has to improve, but it's impossible without the human resources. (M2)

We would see the following: we get there and a teenager is suffering from nausea, headache, from I don't know what and stuff happened there, and he works all day in the tobacco fields, [...] he handled things incorrectly, the handling and management, too, right? That is dealt with in the health inspection unit and it is not notified. He was not treated as a poisoning, it was not recognized. So, this is really evident, it's a problem, and we know it's common. But it's not just here. (M3)

Public policies should consider the lack of planning and local indicators that support more effective actions to improve the quality of life of rural producers and enable more sustainable production methods. Educative actions that are connected to the local reality and help create awareness among the population and the health professionals on a healthy environment may lead to some developments in production and consumption that are less harmful to the ecosystems[19].

A relevant aspect that was stressed in the interviews was the Mais Médicos programme, a government initiative that takes physicians to remote locations, that is considered as being an opportunity to further discuss environmental issues, as noted in the following statement:

[...] we lack the technical and qualified staff because a nurse is not enough, it has to be a nurse who thinks SUS [the public health service], right? [...]. That's why the arrival of the Cubans [physicians imported from Cuba to work in Mais Médicos programme] was so celebrated... because it shows another line of logic. (M3)

The forms of exposure to pesticides and their impact on human health are presented in several publications[6-10,15-17]. However, there are still difficulties in organizing the notifications of poisoning in the country as a whole, and in relation to the methodological challenges of monitoring human exposure to pesticides, in addition to the obstacles in recognizing the processes by which human populations are contaminated. Another challenge that should be considered in relation to this subject is the fact that the risks of human and environmental contamination are influenced by determinants of social, cultural and economic orders. By proposing sustainable development, the MDGs also brought the need to reduce inequities between countries and their peoples, but omitted the structural causes of production and consumption that generate inequities, which limits any possibilities to act more incisively toward the environmental threats to health[15]. This complex scenario imposes the need of an interdisciplinary and integrated approach to the problem, without which any efforts of the international bodies, such as the United Nations (UN), and of national agencies and professionals working locally in the healthcare of rural population may be in vain.

The axis of Potentialities

Continuing education: "talks, convokes, encourages"

The municipalities have currently introduced initiatives of actions that could help resolve the studied problem. In one of the municipalities, a report showed that the health sector has invested expressively in the continuing education of professionals. Even if initiatives target the signals and symptoms of an acute intoxication, as in the case of GTS, they can create awareness and train professionals to identify and report any cases of poisoning.

[...] Every year. The thing is that this continuing education strategy is something we have prioritized with all workers, and with all health policies – not only with the health of the worker. We gather physicians, nurses, technicians, ACS – with ACS it's monthly – [...] the GTS gets in to this "system" like that, so it always pops up again. Oh, the tobacco harvest will start in September, so in August it's already added to the agenda for health workers, for us to be alert (M1)

Similarly to the municipalities of this study, literature indicates that experiences with continuing education are important for raising awareness among the target population in relation to protection measures and the recognition of the magnitude of the problems associated with the production of tobacco[18]. Education, especially in the field of environmental health, is a latent demand in professional practice because it can take care practices out of the comfort zone and force critical reflection toward a solid commitment to environmental health[19].

The regional health departments (CRS) have held refresher courses for the professionals of the studied municipalities, but the number of vacancies for these activities is still limited. The municipalities are also having difficulties promoting the circulation and sharing of information between those who participate in continuing education and the other professionals.

The things that the 3rd department and the state have offered, we have done our best to always have a representative that attends all the courses, but we are still having difficulties for that person who did the course to multiply that knowledge. We have a monthly meeting with the nurses and now we're trying to have a meeting with each of the primary care and emergency service teams [...] (M2)

Continuing education is a difficult process, but we have sought to enhance some of these places where people make things happen. The best example we have here is a nursing technician who promotes it, who wants to know more [...] she promotes it, she calls the agents, talks, convokes, encourages, encourages the doctors to come and study the case, to do something... right? But it is individual. It's not easy. (M3)

The nurses are summoned to critically and jointly analyse the situation with the other professionals in order to implement collective and participatory actions that promote citizenship. This is related to the idea that these professionals are in close contact with people and their everyday difficulties[18]. Continuing education is an important management strategy with the potential to trigger the development of learning abilities, the capacity to creatively cope with health-related situations, and the reflection and changes in everyday life, within the micropolitics, in a process that occurs at work and for work[20].

Continuing education and professional activities for the promotion of citizenship are closely related to quality of life and respect for the environment considering that they transcends both human and environmental health. Health professionals such as nurses have an ethical commitment with the populations in which they work and could propose the formulation and implementation of health policies in priority sectors, as in the case of environmental health determinants. This is especially important because researchers in the field of environmental health have shown that Brazil has not yet reached a development model that allows the country to simultaneously evolve in its social, economic and environmental dimensions. In the case of tobacco, this problem is even more expressive[7-9].

Intersectoral and interdisciplinary actions: "help for every issue"

Another important potentiality found in the municipalities is the partnership initiative with other sectors. In particular, this analysis stresses the promising partnership between the Health Secretariat and the Empresa de Assistência Técnica e Extensão Rural (EMATER), which works specifically with rural development and in the field with the rural workers.

EMATER has been a partner for us in several things. In the interior, it helps a lot with the communities, with the groups... there, they work with good practices in food. The worker health staff works with the green tobacco sickness. The mental health staff of the CAPS works with this issue of suicide, recognizing the symptoms of depression, alcoholism, anxiety. They try to find help for every issue. And that's all done with these groups with EMATER in the interior. [...] We work with workers' unions, too. (M1)

Studies[7-9] show that the intersectoral approach plays an important role in tackling the problem of pesticide use and the implications in quality of life and respect for the environment. The partnership of the State with other sectors provides opportunities for the use of pesticides and the problems they cause to human health to enter the municipal agenda.

Based on the presented potentialities, it appears that the actions for coping with this problem are still insufficient

given the complexity and intensity of pesticide use in the cultivation of tobacco. However, these potentialities do exist and they are the result of local municipal initiatives and of the proactivity of some professionals who work toward sustainable development that can promote quality of life and respect for the environment. This is not an easy task, but "*we are moving in that direction*" (M3).

FINAL CONSIDERATIONS

This case study on the challenges and the potentialities for the development of local public policies that focus on the relationship between the use of pesticides, the health of the rural population and the environment in tobacco growing municipalities in southern Brazil revealed that one of the major challenges is the implementation of health policies that focus on confronting the local realities. Managers are empirically aware of the consequences of pesticide use on human and environmental health, however, there are some difficulties in establishing indicators and of planning according to the reality of the everyday lives and work of the rural population.

There is a duality in the relationship between the health-related interests and the economic interests mentioned by the interviewees. Whereas the consequences of working with pesticides and the resulting health problems are easily identified, there is also some resistance in relation to exposing these events. The failure to confront this problem is translated into the absence of health inspection, monitoring, identification, follow-up and prevention of health and environmental hazards.

Only one of the municipalities reported the provision of continuing education for professionals, chiefly for the identification and monitoring of GTS. In this municipality, the presence of the Ministry of Health in one of the first studies on this subject in Brazil helped create significant awareness. This reveals the need of an external alert, of dialogue and of the reconsideration of local demands. There are many difficulties in relation to local assessments, including the reduced capacity of the staff and the financial resources of the municipalities, and the enormous pressure of the economic sector.

The implications of this theme for the area of health, especially for nursing, are based on the need to employ an expanded concept of health in order to achieve the Millennium Development Goals, especially the 7th goal: Quality of life and respect for the environment. The strengthening of local public policies toward a proposal for the public agenda of health protection for rural workers can contribute to the achievement of the MDGs in relation to reducing and/or eliminating the use of pesticides, given that protecting human health also protects environmental health and vice versa.

The limitations of the study are the need for greater permanence in the research field to obtain a more detailed analysis of the different intersectoral fronts that work together to solve the addressed problem. In relation to the implications of this research for teaching and for healthcare, especially from the perspective of nursing, there is a need for an integrated vision of health, environment, sustainability and development, considering that the cases revealed many difficulties and elements of the interdisciplinary, intersectoral and political realm of these actions that have direct implications on the quality of care offered to these populations.

Further studies are required to better understand the aspects that involve healthcare for the rural tobacco growing population and to relate their practices to broader political, social and economic contexts that are more aligned with quality of life and respect for the environment.

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