

## Collective health and SUS at the crossroads of the Cerrado

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**THE CERRADO IS THE MOST THREATENED BIOME IN BRAZIL**, and its future is uncertain, given the ongoing degradation that, if left unchecked, will culminate in the loss of its sociobiodiversity. “Only small islands would remain, with low resilience in the face of global environmental changes. In the positive scenario, based on the available restoration data”<sup>1</sup>, if the ongoing degradation processes are suspended and if recovery strategies are implemented, it will be possible to observe some improvements in 30 or 40 years. “But, before restoring, it is essential that we manage to preserve what we still have”<sup>1</sup>.

The processes of economic globalization, the expansion and incorporation of external technologies into production chains, and their intervention in territories cause various impacts on the lives of populations, the environment, culture, and their forms of organization. Based on technologies of intensive exploitation of nature and the workforce, these processes generate socio-environmental inequalities and injustices that have a more explicit impact on historically oppressed territories and social groups: Indigenous peoples, traditional communities, and residents of urban peripheries. Inequity is a central element of the global economic system that feeds on the exploitation of territories, generating varied forms of biome ecocide, as is the case with the announced collapse of the Cerrado.

The competing vectors that determine the threat to life in the Cerrados are: the expansion on an unprecedented scale of land use for monocultures, mineral exploitation, water sequestration and infrastructure projects to the detriment of the right to land title for indigenous peoples and traditional communities; the water stress caused by these projects; the massive and intensive destruction of flora and fauna; food insecurity and the social violence disseminated by this rupture. The Cerrado is considered a hotspot for climate change, in a two-way street: it is a generator and receiver of greenhouse gases and, consequently, a driver of surface warming in its territories, whose trend is worrying, as it may reach tipping points that seriously threaten human life and ecosystems. In addition, there is a lack of public policies aimed at the defense and promotion of socio-biodiversity in the Cerrados. It should be noted that this void is evident in public health policies, particularly for vulnerable groups.

The Oswaldo Cruz Foundation (FIOCRUZ), upon realizing the need to go beyond the ‘comfort zones’ achieved with the expansion and consolidation of the Unified Health System (SUS) in the national territory, understands the need for its action in the territories considered

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most vulnerable. In this sense, the FIOCRUZ Cerrados Prospecting initiative emerges as an interactive space for articulation and collaboration among FIOCRUZ, society, public authorities, and productive sectors, and so on, aiming to develop actions to conduct diagnoses, establish partnerships, and identify solutions in defense and promotion of its socio-biodiversity. This inaugurates a new look-action on the territories of this biome, which, in recent decades, has undergone profound transformations in its dynamics, threatening the vital system of this vast and complex territorial extension of Brazil.

As a result of a partnership with the journal 'Saúde em Debate', of the Brazilian Center for Health Studies (CEBES), this thematic issue 'The view of collective health and the SUS in the territories of the Cerrado' aims to systematize and disseminate knowledge from collective health and the SUS for the defense and promotion of the socio-biodiversity of the territories of the Cerrado.

Pioneering in collective health, the work was funded by FIOCRUZ through the FIOCRUZ Cerrados Prospecting initiative and is the result of collective efforts to bring together authors from academia and social movements to produce relevant knowledge within the Cerrado's territorial scope.

The result of this interactive and collaborative process is embodied in 23 articles: 10 original articles, 5 essays, 3 reviews, 2 opinion articles, and 3 experience reports. The 99 authors present a wide range of concepts, analyses, methods, and evidence that, in essence, constitute relevant contributions to collective health, with reference to the thought on the social determination of health.

To assist in the analytical interpretation of the set of articles, a cause-and-effect matrix of health and environment was adopted as a reference, in an adapted and simplified form.

The articles reveal that the conflict between the globalized agro-export model and practices based on sociobiodiversity observed in the territories of the Cerrado

constitutes the driving force behind the socio-environmental determination of health. This clash manifests across a broad spectrum, shaping environmental pressures and health risks in affected regions. This dynamic is evidenced, for example, in studies that connect the expansion of agribusiness in the Cerrado and the Amazon to the emergence of new pathogens, such as the recently discovered arenaviruses. Likewise, this reality is corroborated by analyses of ecocide in the quilombola community of Cocalinho, in Maranhão, and by investigations into the environmental and health implications of the biome's economic trajectory. At the other extreme, we apprehended the relevance of the nutritional and therapeutic values of plants typical of the Cerrado, the value of the self-care of root and root trees of the Chapada do Araripe as resistance to neo-extractivism, and also about the protective and destructive processes of food and nutritional sovereignty and security in the Tircatinga Indigenous Land, Sapezal, in Mato Grosso.

In the *continuum* circle of socio-environmental determination of health, with regard to states of affectation, environmental contamination, territorial vulnerabilities, and human exposures, the evidence of the study on the intensification of pesticide contamination in communities in several states of the Cerrado, intensified due to the agribusiness production model in the compromise of human health and the environment, is undisputed.

The study on the costs of hospital admissions in the SUS associated with cardiorespiratory diseases caused by exposure to fine particulate matter (PM<sub>2.5</sub>) from the burning of biomass in the Legal Amazon and in the northern Cerrado, as well as the opinion article that warns about the risk of transmission of Brazilian spotted fever due to the intense and extensive degradation processes of the Cerrado, reveal the implications for human health.

Worthy of note are the articles that address multiple solutions developed in the

interfaces between the domains of public power and the knowledge and practices of the peoples and communities of the territories of the Cerrado, namely: favoring the training of professionals sensitive to the differences, territories and ethical-political disputes that cross the production of care and public policies; popular knowledge about the use of medicinal plants in the territory of a Basic Health Unit in a municipality in the Jequitinhonha Valley, in Minas Gerais; the therapeutic itinerary of quilombolas and rural settlers in the Cerrado of Goiás; the thesis that development surveillance (as another attribute of the National Health Surveillance Policy) needs to be incorporated in territories where economic production processes predominate, accompanying the harm to environmental health that has repercussions on human health, seeking to modify and stimulate other forms of production that are healthy and sustainable, in a popular perspective and of protagonism of the subjects of the territory; the essay on the importance of intersectionality and collective intelligence for health promotion in the territorial context; the essential role played by root-seekers as guardians of ancestral knowledge and at the intersection between popular and scientific knowledge; the relevance of the involvement of children and adolescents in the knowledge of the natural and cultural richness of the Cerrado, through playful activities, aiming to develop increasingly dialogical practices, guided by listening and public participation; and the debate on how sensitive and collaborative research methodologies contribute to the shared production of knowledge, territorial strengthening and critical understanding of ecocide in the biome.

In the dimension of State action and public policies, the insufficiency and inertia of federal public policies related to the protection of the Cerrado stand out, particularly regarding aspects associated with human health and sociobiodiversity. On the other hand,

the performance of organized civil society is highlighted, focusing on its contributions to the conservation of sociobiodiversity and to the strengthening of traditional communities in the biome.

The mapping of academic production on the sociobiodiversity of the Cerrado and its relationship with the environment and health identifies trends and research gaps, showing that most of the scientific production focuses on ecological dynamics and the impacts of agribusiness, with the health dimension being marginally addressed, particularly the health of traditional peoples.

It is therefore believed that this work reveals a critical knowledge gap in the Cerrado, especially regarding the articulation between sociobiodiversity and health, which demands urgency in formulating public policies that promote the protection and cultural appreciation of the biome. It is imperative to re-signify the effective right to health and access to SUS, as demonstrated by a study analyzing the *Inyã* Karajá, an ethnic group from the Cerrado of Goiás, which points out the structural and territorial obstacles that compromise the effectiveness of equitable public policies.

In line with the 2030 Agenda (particularly Sustainable Development Goal 3 – Health and Well-Being) and the 1988 Constitution's conception of health, understood as a universal right and common good, this special issue presents the magnificent potential of the multiple territories of the Cerrado and the interactive diversity among its peoples, communities, and ecosystems – the essence of the Cerrados' sociobiodiversity.

It is expected that, in this work, the reader will find arguments and evidence for the contribution of a systemic approach to health and the environment in public policies oriented to the emancipatory and sustainable transformation of the Cerrado.

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