CAREX BRAZIL ESTIMATES OF WORKERS EXPOSED TO THE EFFECT OF ORGANIC PRACTICE ON THE HEALTH AND WELL-BEING OF FRUIT FARMER FAMILIES

Introduction
CAREX Brazil is a project coordinated by the Coordination-General of Occupational Health Surveillance of the Ministry of Health of Brazil, National Cancer Institute, and Jorge Duprat Figueiredo Foundation for Occupational Safety and Medicine (Fundacentro) of the Brazilian Ministry of Labor and Social Security. The objective of this project was to estimate the number of workers exposed to occupational carcinogens in Brazil benzene, silica, and the pesticide chlorothalonil.

Material and Methods
CAREX Brazil estimated the prevalence of workers exposed to carcinogens using an Occupational Exposure Matrix – MEO. Information on the workforce was obtained from two databases Annual Social Information Report (RAIS) between 2006 and 2020 for formal workers and the National Household Sample Survey (PNAD) in 2014 for total workers. The prevalence of exposure was estimated by experts. For data analysis was used an copyright web system, which used PostgreSQL and Access (Microsoft Corporation) tools.

Results
CAREX Brazil estimated that between 2006 and 2020 on average 3,610,902 (5.46%) of Brazilian formal workers were exposed to silica and 541,644 (0.82%) conditionally exposed. For benzene, on average, 2,183,569 (3.29%) of formal workers were exposed and 922,227 (1.39%) were conditionally exposed. Exposure to chlorothalonil from formal industrial and commercial workers was estimated at 43,349 (0.07%). Finally, an average of 5,928,286 (6.00%) of total agricultural workers were considered exposed to chlorothalonil in 2014.

Conclusions
A substantial proportion of Brazilian workers are exposed to known and suspected carcinogens at work. These data will be used for the purpose of worker health surveillance, supporting public policies.

Methodology

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THE EFFECT OF ORGANIC PRACTICE ON THE HEALTH AND WELL-BEING OF FRUIT FARMER FAMILIES: A STUDY PROPOSAL FOR A COMPARATIVE 5-YEAR COHORT STUDIES IN UGANDA, SOUTH AFRICA AND SWITZERLAND

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Introduction
Holistic initiatives to improve the sustainability of farming practices are supported. For example, the EU Farm-to-Fork strategy aims to have 25% of the agricultural land under organic practices by 2030. However, there is no impact assessment available on the wider consequences for farmer families’ health and well-being during and after the transition to organic farming practices. We present a project proposal for three funded upcoming 5-year cohort studies to assess the effect of organic practice on the health and well-being of 1800 fruit farmer families in Uganda, South Africa, and Switzerland.

Methods
We will enroll three groups of fruit farmer families (farmer and their partner) (i) conventional, without the intention to switch to organic farming in the next four years; (ii) conventional, with the intention to apply more organic practices in the next four years; and (iii) organic. We foresee an annually-repeated questionnaire surveys over four years during the end of the respective farming season starting in 2023. Health and well-being will be assessed using the validated SF-12v2® and Harvard ‘Flourishing Index’ questionnaires. To understand the perceived risk of multiple occupational hazards, we will use a semi-quantitative risk assessment to assess climatic, chemical, biological, physical, and psychological health hazards.

Results
Following farmers over 4 years, we will characterize positive and negative impacts of organic farming practices on the health and well-being of fruit farmers and their partners in three different socio-ecological settings in Uganda, South Africa, and Switzerland.

Conclusion
The broad characterization of the occupational risk profiles of farmers and their partners will allow identifying the most critical hazards. This information will help design meaningful mitigation measures and interventions to address a combination of chemical, biological, physical, and psychological hazards and protect farmer families health and well-being along the transition to organic farming.