INFLUENCE OF THE POLICY ENVIRONMENT ON THE USE OF CHEMICAL PESTICIDES AND FARMERS' HEALTH IN NORTH KIVU, DRC

BY

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY OF SCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT

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DECLARATION

1. THE STUDENT

I, AKSANTI BAHIZIRE PHILIPPE do hereby declare that this thesis is my original work and has not been submitted for the award of a degree or diploma in any other University or college.

Signature…..  Date: 7th September 2004

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2. THE SUPERVISORS

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ABSTRACT

Every year, millions of farmers are exposed to chemical pesticides. The use of pesticides has increased due to their widespread application in agricultural and environmental pest control. However, banned chemical pesticides continue to reach farmers despite existing policies at the national and international levels. This increases health risks not only for farmers but also throughout the food supply chain. In the Nyiragongo health zone, in North Kivu, thousands of farmers are victims of respiratory poisoning caused by chemical pesticides. The aim of this study was therefore to investigate the influence of the policy environment on unwanted/hazardous exposure to chemical pesticides among farmers in the Nyiragongo health zone in North Kivu, DRC. It specifically aimed to determine how individual characteristics, categories of chemical pesticides, and knowledge and practices of use of chemical pesticide standards influence harmful/hazardous exposure to chemical pesticides among farmers in North Kivu, DRC. It also sought to establish the association between pesticide exposure and respiratory diseases among farmers in the Nyiragongo health zone in North Kivu, DRC, and also to examine the influence of the policy environment on harmful/hazardous exposure to chemical pesticides among farmers in Nyiragongo. The study was guided by the theory of planned behavior. The study used a retrospective case-control design and targeted 183,988 farmers in the Nyiragongo health zone. *The* formula of Charan and Biswas (2013) was used to calculate a matched sample of 302 farmers selected using convenience sampling. Data was collected using a questionnaire and an interview guide and analyzed using quantitative and qualitative methods. The former involved descriptive and inferential statistics, such as frequencies, percentages, means, and chi-square and odds ratios. Qualitative data was analyzed using thematic content analysis. The study found that socio-demographic characteristics were significantly associated with adverse exposure to chemical pesticides among farmers in the Nyiragongo health zone. Thiodan was the most commonly used insecticide (66.6%), followed by Lava Dichlorvos 100% EC (27.5%). Dithane (84.4%) and Ridomil (14.6%) were the most frequently used fungicides in the region. The majority of farmers (N=279) had not received training on the correct wearing of PPE before using chemical pesticides and the differences between the two groups were significant ($p \leq 0.05$). Most farmers in the case group had less knowledge of the correct wearing of PPE compared to the control group and the difference was significant ($p \leq 0.05$). Most case group farmers were adversely exposed to the chemical pesticides during application compared to control group farmers and the difference between both groups was significant ($p \leq 0.05$). Most farmers who suffered from respiratory diseases indicated that they had asthma (N = 117). Other respiratory illnesses reported by farmers were pneumonia (N=24) and bronchitis (N=10). Finally, it was established that the majority (78.1%) of the state officers in North Kivu Province were not familiar with the international, national, and state legal instruments for the management of chemical pesticides. As a result, there was poor implementation of the chemical pesticide control policies across the Province as indicated by 71.43% of the respondents. The study concluded that the weaknesses observed in the policy environment in the DRC negatively influence the control of the management of chemical pesticides, which cause respiratory diseases in farmers. The study therefore recommends the development of robust regulatory frameworks that will enable policy actors to carry out urgent multidimensional interventions, such as raising awareness and training policy implementers and farmers on chemical pesticides. Restricting the flow of chemical pesticides while ensuring that banned pesticides do not reach their markets, and also ensure that there is adequate cooperation with other sectors and international actors such as border controls to limit the importance of dangerous chemical pesticides.

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