

# Urban agriculture: economic performance of vegetable farms in the era of chaotic urbanization in Lubumbashi, Democratic Republic of Congo

Maurice Kesonga Nsele <sup>1,2,\*</sup>, Kevin Maréchal <sup>1</sup> and Thomas Dogot<sup>1</sup>

<sup>1</sup>Laboratory of Economics and Rural Development, Gembloux Agro-Bio Tech, University of Liège,  
Passage des Déportés 2, 5030 Gembloux, Belgium ;

<sup>2</sup>Agricultural Economics and Development Research Unit, Faculty of Agricultural Sciences,  
University of Lubumbashi, Lubumbashi 1825, Democratic Republic of Congo.

\*Correspondence: [maurice.kesongansele@doct.uliege.be](mailto:maurice.kesongansele@doct.uliege.be) ; Tel.: +32-46-52-30-442

## Abstract

The increasing pressure on natural resources, amplified by chaotic urbanization, has exacerbated poverty and food insecurity in Lubumbashi. To survive, the majority of Lubumbashi's city dwellers remain dependent on urban agriculture, hence expressions such as "Instead of begging, I cultivate to feed my children". Thus, while the sanitary quality of urban farms in Lubumbashi has been questioned by several authors, due to their contamination with heavy metals, the objective of this study is to analyze the economic performance of these farms in order to understand the farmers' motivations. To this end, interview surveys were conducted with 279 randomly selected farmers in the seven market garden sites. These surveys covered the period from April to August 2019.

Results on the characteristics of farmers showed that urban agriculture in Lubumbashi is dominated by young people (68%), women (56%), married (78%), inexperienced (67%), educated (72%), originally from Lubumbashi (56%) and affiliated with religious denominations (93%). The same results showed that urban agriculture faces a weak institutional or organizational framework, with only 31% of farmers being members of producer associations and 12% having access to informal financing. None of the farmers' characteristics were significant in relation to daily income. These results highlight the need to train farmers in agricultural know-how, while improving the effectiveness of the institutional or organizational framework for supporting urban agriculture.

Access to land is facilitated by the farmer's attachment to his socio-cultural environment. Young women and alloctauunes face enormous difficulties in accessing land. To produce, farmers incur an average intermediate consumption of 36030 Congolese Francs (19.2 euros), of which 74.6% is spent on chemical fertilizers. Farmers cultivate small areas of 3.7 (1.3) ares, on which they obtain a production of 619.5 (209.8) kg of Chinese cabbage, after 45 days, with an average

gross product of 282335 Congolese francs, or 150.2 euros, which ensures the survival of a household of 7 persons on average. The market gardener in Lubumbashi who produces only Chinese cabbage earns a low daily income of 5354 Congolese Francs, or 2.8 euros. The size of the farm alone explains up to 62.2% of the daily income. These results reveal that the current production system of farmers in Lubumbashi is based on extensive agriculture, hence the need to promote innovative techniques to intensify vegetable production, in a context marked by land scarcity, amplified by chaotic urbanization. We propose a study on the factors of sustained adoption of innovative techniques by urban farmers in Lubumbashi.

**Keywords:** Urban agriculture, vegetable farms, economic performance, Lubumbashi and Democratic Republic of Congo