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**Knowledge and perception of edible weeds
in the face of the African herbicide revolution
A case study from Zambia**

Master's thesis

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Abstract

For several years, the number of smallholders in Sub-Saharan Africa using herbicides has been growing. Herbicides can help to increase agricultural productivity by reducing labor requirements and limiting crop losses due to weed infestation. However, some weeds contain high levels of micronutrients and are widely consumed as side dishes. An increased use of herbicides may cause those edible weeds to disappear from food baskets, which might be problematic given the high rates of malnutrition in Sub-Saharan Africa.

Against this background, the aim of the study was to examine the use and knowledge structures regarding edible weeds. Hereby, particular attention was paid to the transfer of knowledge on edible weeds. Furthermore, the use and knowledge of herbicides among the population in the study areas was investigated. In a concluding step, possible trade-offs for smallholders between the use of herbicides and the consumption of edible weeds were discussed.

The field work of the study was carried out in eight camps in the Eastern Province and the Southern Province of Zambia. In the period from December 2018 to February 2019, a total of 159 household interviews, 16 focus group discussions with different topics, and expert interviews were conducted.

Edible weeds were consumed in every interviewed household, and every participant knew at least one edible weed. Furthermore, it was observed that in particular women played an important role in the collection and preparation of edible weeds, as well as in the preservation and dissemination of knowledge on them. However, the knowledge of edible weeds was at a high risk to decrease due to migration from rural to urban areas but also inter-rural migration, introduction of new foods, and changes in lifestyles. In order to protect the knowledge of edible weeds that has been passed on orally in families for generations, it is necessary to preserve it, for example by writing it down, or to create new contexts for knowledge transfer, for example by integrating it into the formal school curriculum. In the frame of the research, no evidence of lower consumption of edible weeds due to herbicide use was found, although herbicide use in the studied areas was higher compared to earlier available data. Regarding knowledge on herbicides, it was found that only few people had access to formal information and training in the use of herbicides. Overall, the topic of herbicides has been attributed predominantly to men by all of the participants of the study. It is proposed to extend and enhance the currently insufficient knowledge systems on herbicides in order to improve access to reliable information on herbicides for all, irrespective of their gender and whether herbicide use is intended.

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Most farmers in the Eastern Province and Southern Province, the study areas of the study, are smallholders who live self-sustaining and have limited financial resources. In recent years, their agricultural activities have been strongly influenced by weather extremes (e.g. extreme drought, delayed rainy season) and the new appearance of the Fall Army Worm, which has further shaken the fragile system. As a result, existing food insecurity has worsened and malnutrition rates, especially among children and women, have stagnated. Against this background, it is important to continue research in the field of food security, which is one of the topics the Fiat Panis Foundation is focusing in their work.

One issue that has received little scientific attention in regard food security in Zambia is edible weeds. It is known, that edible weeds are widely consumed in the country. Edible weeds can contribute significantly to food security and a balanced, nutritious diet due to their nutritional value and free availability, especially in times of food shortages. In addition, their medicinal and cultural value is important for many communities. However, these plants may be threatened by the slowly appearing herbicide revolution. Like in other African countries, the numbers of smallholders adopting herbicides have increased in Zambia. Herbicides are praised above all as a helpful instrument to increase agricultural productivity and provide higher yields to the farmers.

Possible trade-offs between the use of herbicides and the consumption of edible weeds have so far received little attention in science. To fill this research gap, could mean that there is a more solid basis to develop ideas, how herbicide use and continued consumption of edible weeds, could be continued in parallel and trade-offs among the smallholder be reduced.