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## **Adoption of Agro-Ecological Farming Practices**

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### **A Case Study from Burkina Faso**

**Master Thesis**

by

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## Abstract

Sorghum (*Sorghum bicolor* (L.) Moench) and pearl millet (*Pennisetum glaucum* L.) are main staple foods for the Burkinabe population. Due to degradation of soils, climate change and widespread striga (*Striga hermonthica* (Del.) Benth.) infestation, yields in sorghum and millet based farming systems are declining dramatically with few alternatives offered. In response, the project "Farmer led agro-ecological intensification in Burkina Faso" was established by the NGO "Groundswell International" in cooperation with local partners. The aim of the project was to promote innovative agro-ecological farming practices like Zaï pits, half-moon pits, stone contour bunds, micro-dosing of non-organic fertilizer, application of organic fertilizer, crop rotation, intercropping and the use of new improved varieties. Such practices are expected to address urgent problems of smallholder agriculture and to promote more sustainable farming systems.

This study uses a mixed-methods approach consisting of focus group discussions and a household survey to provide a socio-economic assessment of the adoption process among small-scale farmers in the project villages. Factors affecting adoption, challenges related to it, impacts of adoption for farmers and their households, as well as the influence of the project itself are the main focus of the assessment. Survey data were analyzed using descriptive analysis and logit regression.

The results suggest that the dissemination of agro-ecological farming practices bears a great potential to enhance small-scale farm households' food security. The influence of project participation on the adoption of agro-ecological techniques was found significant for most practices and farmer-to-farmer training helped to reach marginalized groups. Still, some techniques like half-moons and intercropping showed rather low adoption rates. A variety of challenges related to adoption faced by farmers was discovered at a technical, legal, social, infrastructural and monetary level and special obstacles for female farmers were found.

Overall, the conclusion is drawn that spreading knowledge on agro-ecological techniques represents the heart and core of the dissemination process, but needs to be coupled with building up of farmer's organizational capacity, a special support of women, an improved infrastructure network and a facilitating policy environment.