Master's Thesis

Exploring the adoption of aquaponics for food security and urban resilience among stakeholders in Sub-Saharan Africa: A Nigerian case study

for attainment of the academic degree of
Master of Science (M.Sc.) in Sustainable Resource Management
at the Technical University of Munich.

Submitted by	Subtil Fialho, Daniela, 03697703, Sustainable Resource Management
Supervised by	Dr. Benjamin, Emmanuel, *Agricultural Production and Resource Economics, Technical University of Munich*
Submitted on	October 16th, 2020

Abstract

Globally land degradation and desertification are happening at alarming rates, forcing people out of rural areas in direction to cities. The trend is particularly worrying in Nigeria, where urbanization in Lagos leaves more people exposed to accumulative crises, such as the exponential growth of the urban sprawl, climate change and food insecurity. Feeding Lagos' growing population with less arable land while reducing emissions from agricultural sector requires rethinking food systems from consumption to production. As a farming novelty mostly adapted to urban areas, aquaponics could contribute to the production and delivery of fresh and nutritious food to urban dwellers. The aim of this study was to explore the conditions for the adoption of aquaponics by Lagosian farmers as a food security strategy. Five farmers were interviewed, and a qualitative content analysis was developed. The results revealed that the farmers reacted positively to aquaponics and showed enthusiasm with the possibilities of water savings and system upscaling. Initial investments, high-energy demand and unreliable energy supply were some of the risks and constraints identified to the implementation of aquaponics systems in Lagos. Conversely, the farmers indicated that the availability of credit, government subsidies and agricultural training would be the conditions motivating them the most to switch to aquaponics. Adequate urban planning that contemplates urban agriculture, local government and special microfinance programs could promote the adoption of aquaponics by supporting farmers in overcoming the aforementioned obstacles.

Keywords: urban resilience; food security; urban agriculture; aquaponics; urbanization; adoption; West Africa.