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and Food Science]

**Bachelor's Thesis**

**The Impact of Globalization and climate change on milk  
Production Practices**

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## **ABSTRACT**

This thesis examines the complex interactions between globalization, climate change, and milk production practices, emphasizing the need for adaptive strategies and technological innovations to ensure the sustainability and resilience of the dairy sector in a rapidly changing world. It explores the multifaceted impacts of globalization and climate change on the dairy sector, highlighting key trends, adaptations, and innovations within contemporary milk production practices.

Globalization has transformed the dairy industry by enhancing international trade, technological advancements, and market integration. Increased global demand for dairy products has led to changes in production systems, supply chains, and consumer preferences. For instance, multinational dairy corporations have expanded their operations across borders, while local producers have adapted to meet international quality standards and export requirements.

Concurrently, climate change has emerged as a critical factor affecting milk production. Shifts in temperature patterns, altered precipitation regimes, and extreme weather events pose challenges to dairy farming systems. Heat stress on dairy cows reduces milk yield and quality, necessitating adaptive strategies such as improved barn ventilation, water management, and breed selection for heat tolerance.

To address these challenges, dairy farmers are adopting innovative technologies and sustainable practices. Precision agriculture techniques, including sensor-based monitoring and automated feeding systems, optimize resource use and enhance productivity. Moreover, the concept of climate-resilient dairy farming promotes agroecological approaches like pasture-based systems and integrated crop-livestock management, reducing environmental impacts while ensuring milk quality and quantity.

The case of Uganda at my family farm, on climate change and technology innovations is presented as a case study.

**Keywords:** dairy industry, globalization, climate change, milk production, technological innovation, heat stress, adaptive strategies, sustainability

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