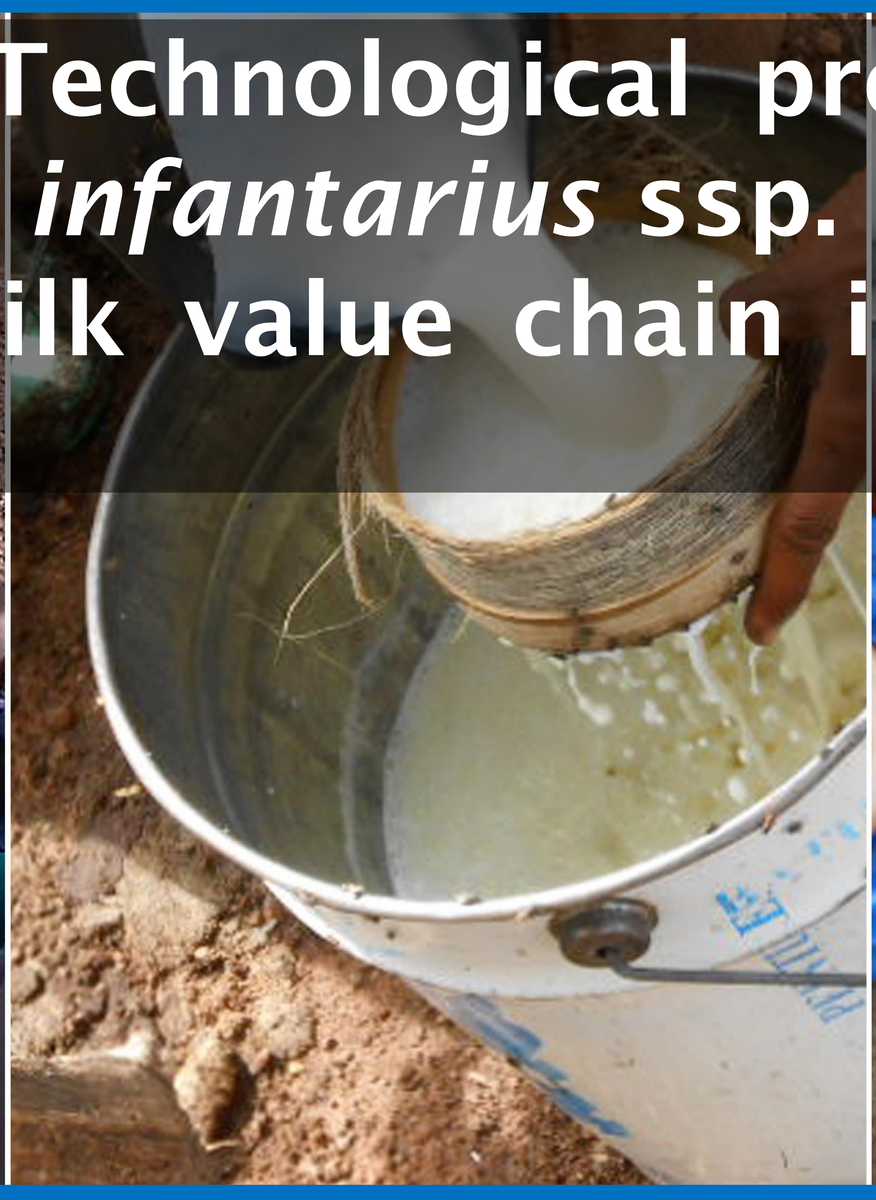
Ecology and Technological properties of *Streptococcus infantarius* ssp. *infantarius* (*Sii*) in the milk value chain in northern Côte d'Ivoire



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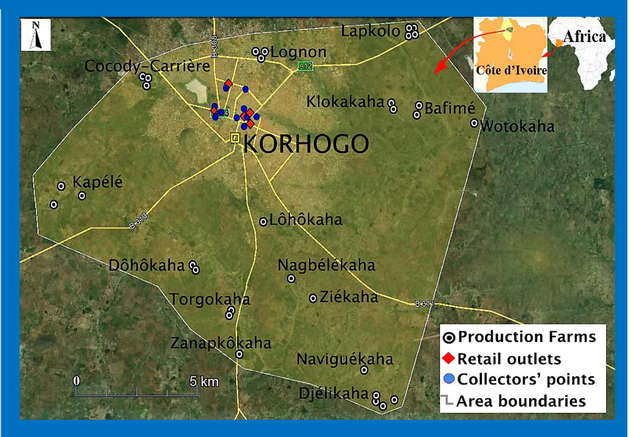
Introduction

Streptococcus infantarius ssp. *infantarius* (*Sii*) are the main lactic acid bacteria isolated from traditionally fermented dairy products worldwide. In addition to their ability to inhibit certain food pathogens like *Listeria* Spp., African *Sii* variants harbor dairy adaptations similar to *Streptococcus thermophilus* conventionally used for yogurt fermentation. However, *Sii* have never been isolated from raw milk and their ecology in the dairy environment is unknown. Sources as well as moments of introduction and factors favoring emergence of these *Sii* in the milk are also unstudied.

Key Message: Application of *Sii* as a novel starter culture for enhanced food safety should be considered.



Study Area
Microbiology and Molecular biology

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Objective

Enhance the quality of traditional dairy products and milk dependent populations livelihoods by :

SO_1: Assessing the origin of *Sii* in milk by investigating **humans** (milker), **animals** (cow, calve), **dairy environment** and raw milk

SO_2: Determining moments of intrusion and factors of emergence of *Sii* in the milk

SO_3: Assessing technological properties of *Sii* and develop a novel *Sii*-based starter culture

Expected results

(i) Origins of *Sii* in dairy environment are determined

(ii) Moments of introduction of *Sii* in the milk and factors of their predominance are determined (titratable acidity, pH, temperature, duration, evolution of the microflora etc.)

(iii) Technological properties of *Sii* are evaluated and a novel stabilized African adapted starter culture is developed

Methodology

Cross-sectional study based on One Health theoretical framework

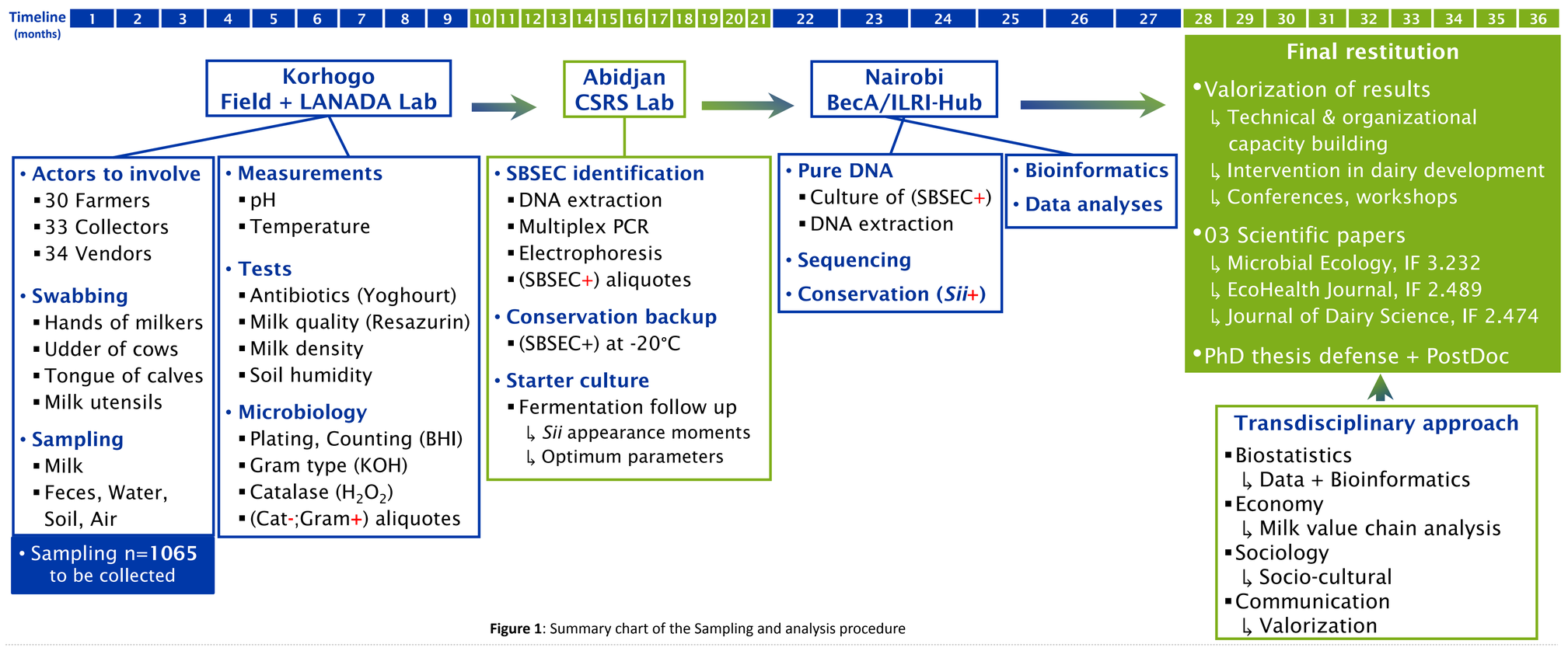

Figure 1: Summary chart of the Sampling and analysis procedure

Conclusion

The novel *Streptococcus infantarius* ssp. *infantarius* (*Sii*) present high milk fermentation potentialities. Assessing the source and behavior knowledge gap of *Sii* in the dairy environment is essential for developing an adapted starter culture for enhancing quality of traditional fermented dairy products.