

Developing a training concept design on milk hygiene and quality among smallholder dairy farmers in Southern Province of Zambia

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Introduction



Figure 1: Milk production - Zambia



Figure 2: Milk

- Milk production is the main output of a dairy farm and farmers are the main actors at production (fig. 1).
- Milk is highly nutritious, it's a source of income, contributes to food security and an important food-source particularly for children (fig. 2)
- However, it is rapidly perishable and without appropriate management and control measures, may be contaminated with foodborne disease causing agents.

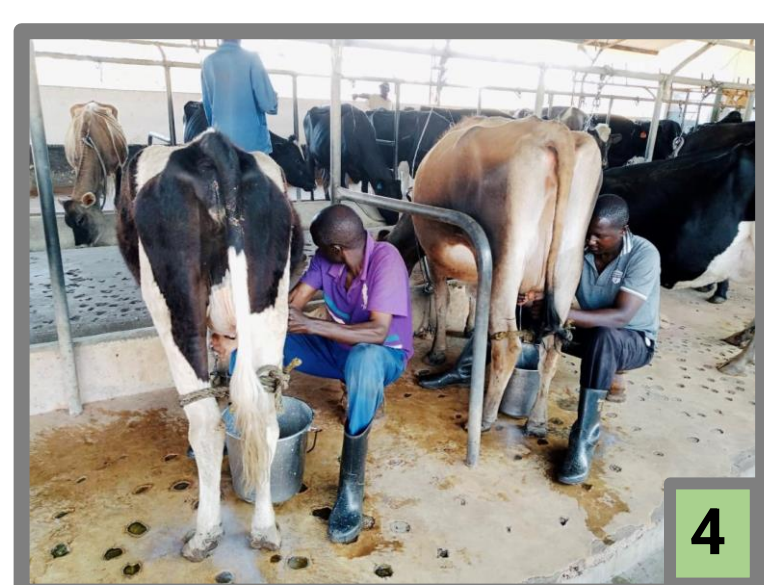
Problem Statement

Despite the nutritional and benefits of milk, knowledge on milk hygiene is insufficient (or even absent) among smallholder farmers and their workers in Zambia. Poor productivity and income losses is rising due to poor hygiene practices and scarce extension services like training at farm level.

Value chain affected



Figure 2: Milk production among smallholder farmers in Zambia



- Dairy sector in Zambia is identified as a very important sector in driving rural and peri-urban development.
- Milk hygiene deficiencies at all stages of the dairy chain (deficiencies in udder hygiene, personal hygiene, hygiene of environment and equipment) still exists in Zambia (fig. 2 & 3)
- The intensification of milk hygiene and quality trainings will ensure safety of milk and products and potential microbiological contaminations minimized to the greatest extent.

Possible Solution

- Improving knowledge, attitudes and practices on milk hygiene and quality at all levels of the dairy value chain.
- Important hygiene rules and measures presented in a simple innovative approach that would promote adoption and ensure sustainability of the adoptions by stakeholders in the value chain (fig. 4-8).
- The smallholder farmers supported with a small and easy to handle kit (hygienic tools).

Objectives

The main objective is to assess the effectiveness of a training concept design on milk hygiene and quality among small-holder dairy producers in Southern Province of Zambia. The specific objectives are;

- Develop a dairy hygiene training concept design, that is easily understandable for farmers and processors in the dairy sector of southern province, Zambia.
- To train small-scale farmers on; Basic sanitary and Good milk handling practices, Sterilizing dairy equipment's, Milk quality
- To support trained small-scale farmers with a small and easy to handle kit applying milking sanitary practices

Problem tree

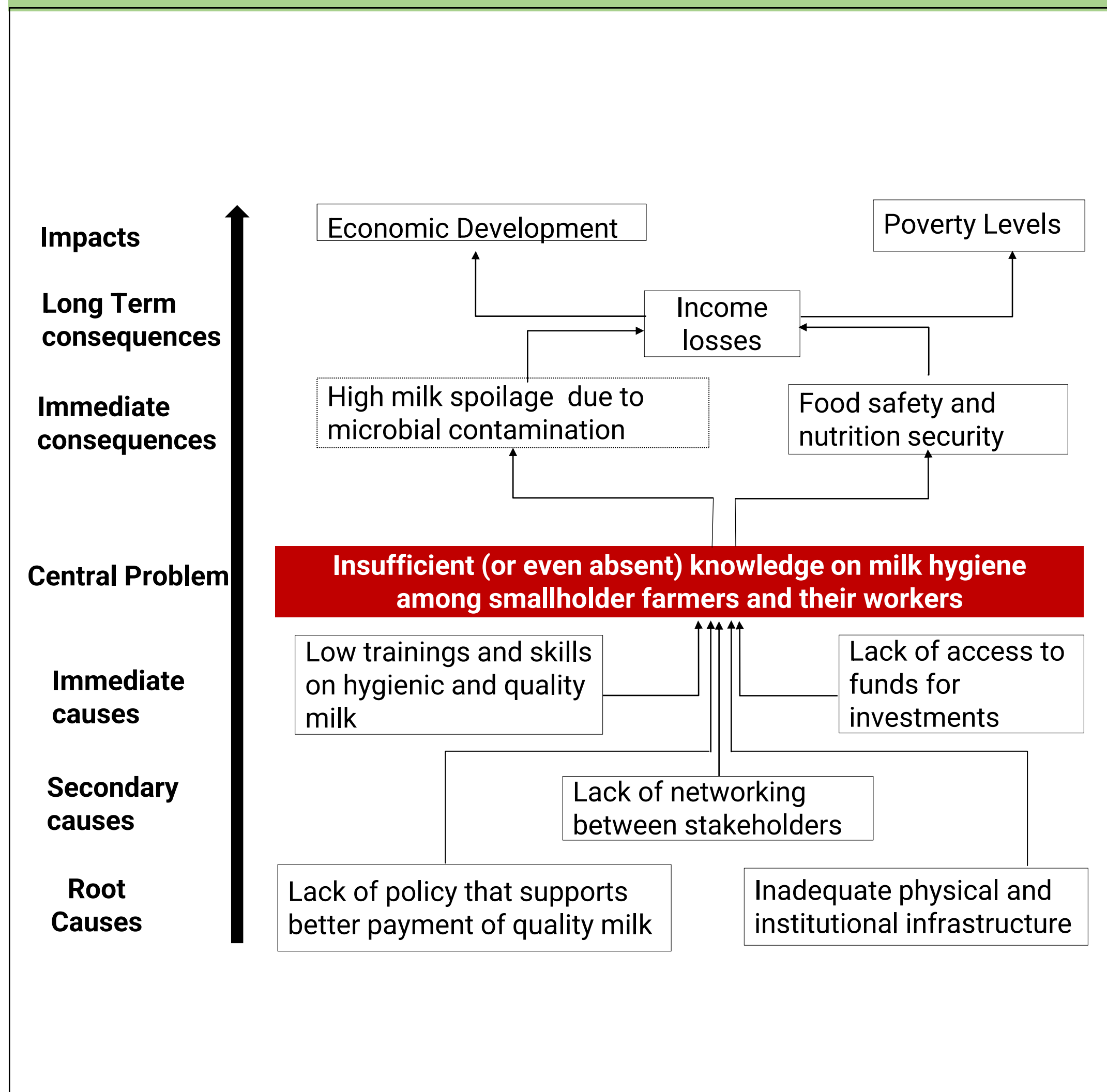


Figure 5-10: Smallholder dairy farmers, dairy breeds, Clean environment, Udder cleaning, Mastitis check

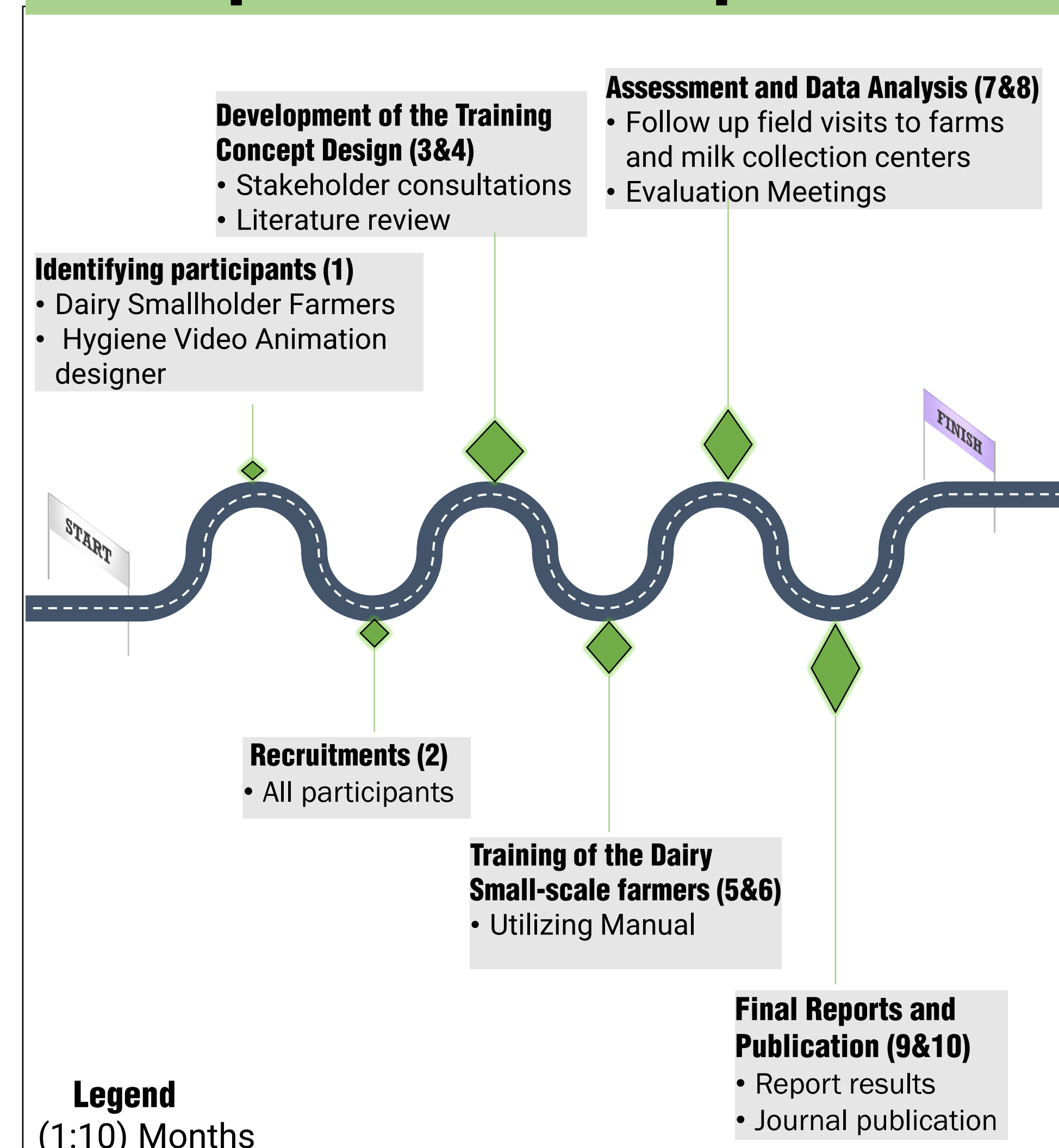
Possible risks

- Lack of infrastructure (roads, cold chain, electricity)
- Unregulated informal trade of milk without application of food safety standards
- Climate change may reduce milk productivity and profitability limiting capacity to improve milk quality and safety



Figure 9-10: Unhygienically stored colostrum milk which can introduce diseases

Implementation steps



Expected costs

Investment costs summary

Expense item	Euros (€)	Euros (€)
Fixed cost		
On-farm training facility	60	
Training laptop	304	
Training video projector and projection screen	265	
Milk quality testing tools	85	
Small and easy to handle kits (hygienic tools)	1950	
Administration costs	390	
Total Fixed costs	3054	
Variable Costs		
Salaries and wages	541	
Travel per diems and equipment's transportation	255	
Training material printing	60	
Stationery supplies	30	
Training costs (refreshments)	130	
Total Variable Cost	1016	
Total Implementation Cost for 10 months		4070

Expected outcomes

