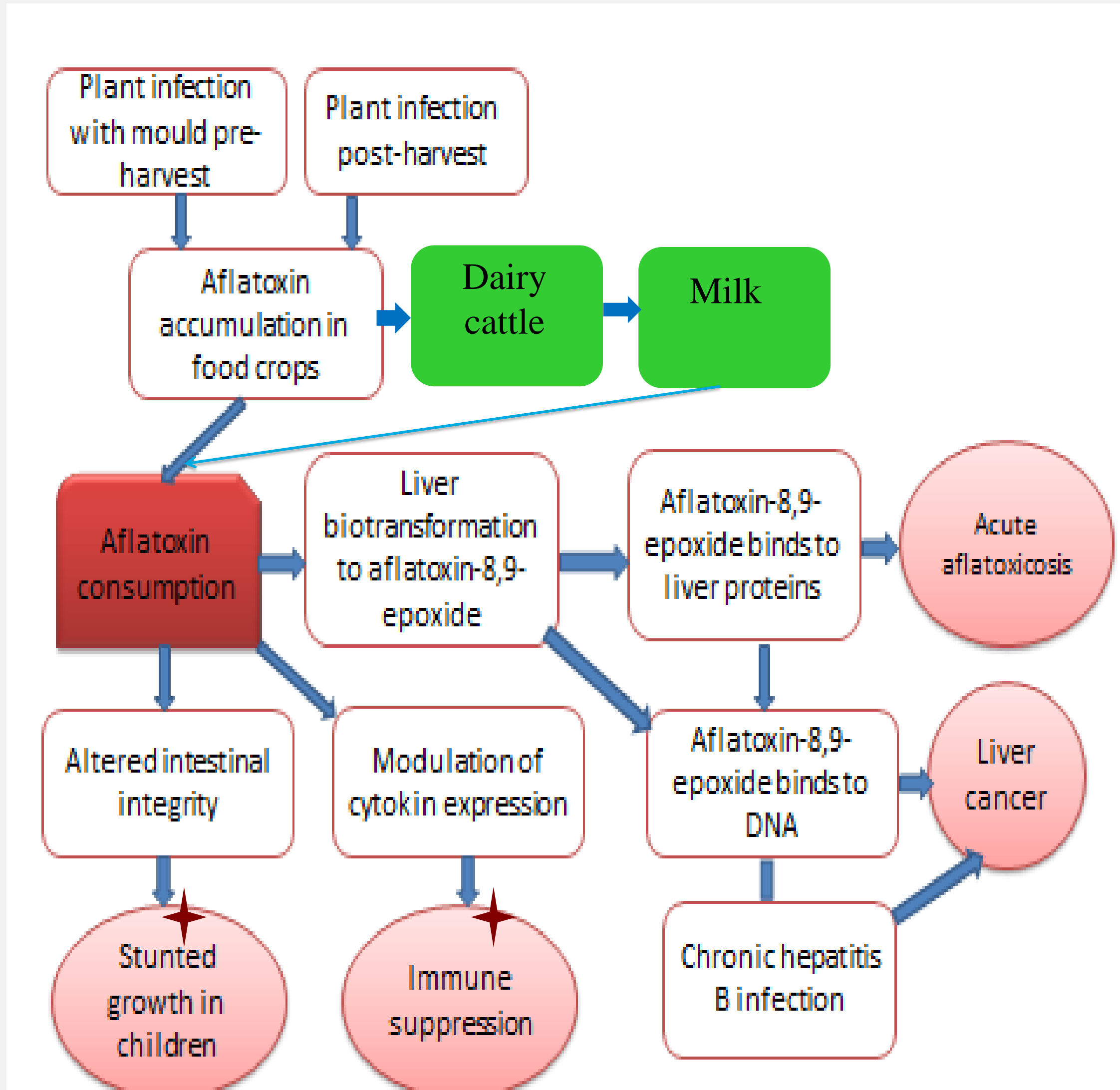


# Aflatoxin M1 survey in dairy households in Kenya

Anima Sirma; Daniel Senerwa; Johanna Lindahl; Kohei Makita; Erastus Kang'ethe; Delia Grace

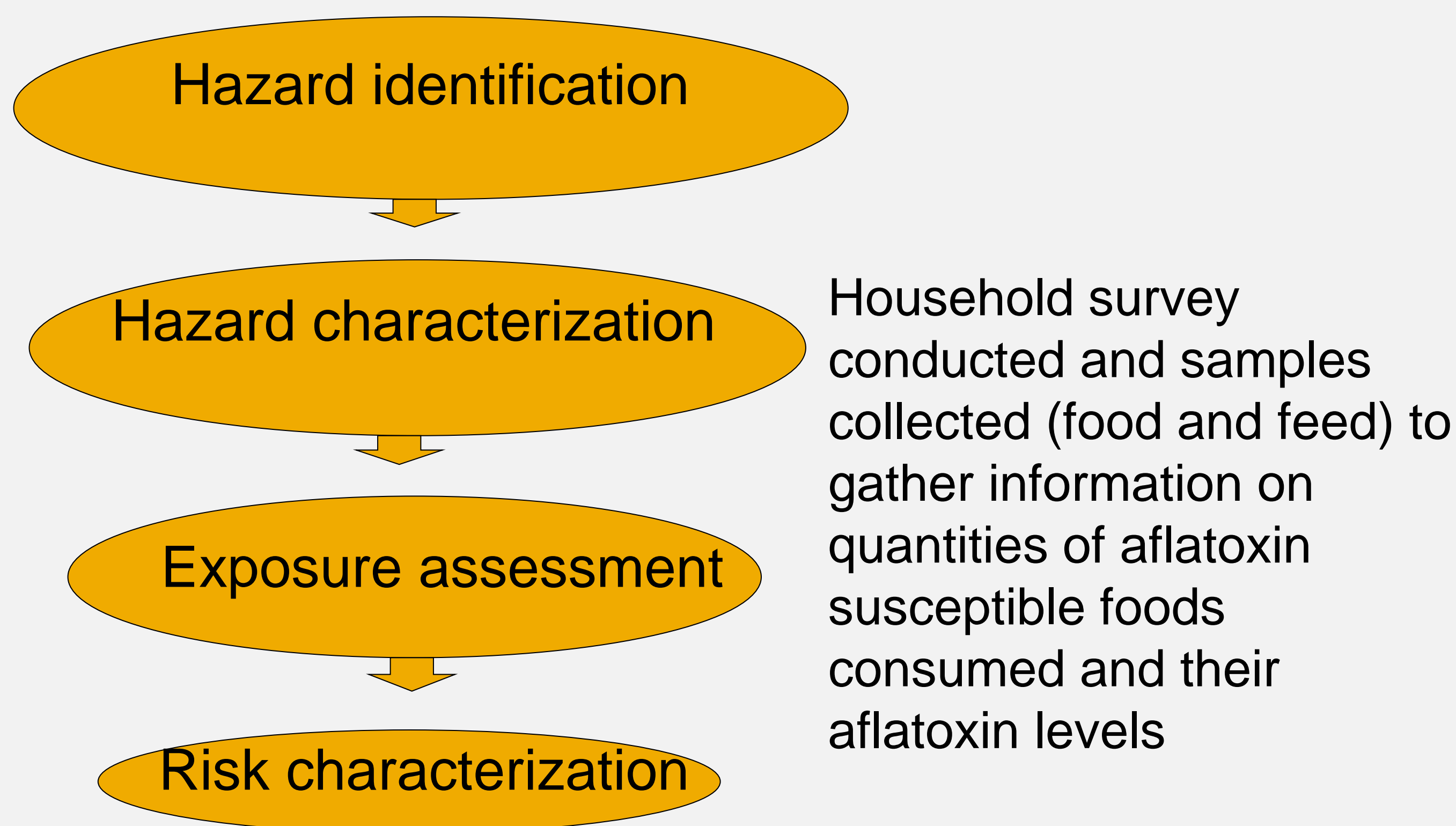
## Introduction

Kenya has the largest dairy herd and highest per capita milk consumption in East Africa. Kenya has also experienced multiple aflatoxicosis outbreaks in recent years, and several surveys have reported high levels of contamination in maize. When lactating cows consume feed contaminated with aflatoxins, they secrete aflatoxin M1 in milk. This metabolite is harmful to humans. There is no current information on the risk to human health posed by aflatoxins in milk in Kenya. To fill this gap, a risk assessment is being conducted in four agro-ecological zones (AEZ; semi-arid, temperate, sub-humid and humid) in Kenya.



Aflatoxins disease pathways in humans (+ hypothesized pathways based on association and animal studies)

## Methodology of risk assessment



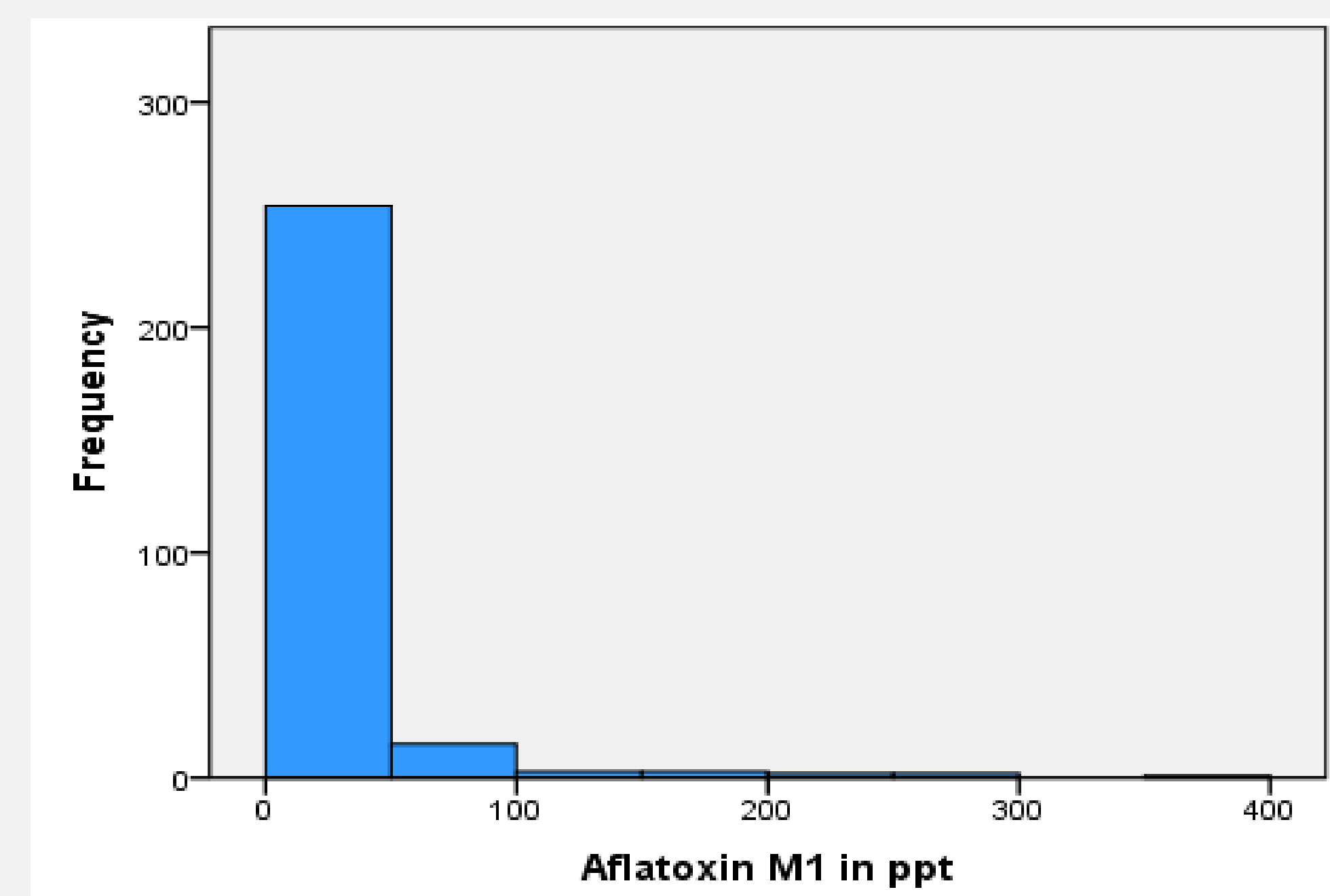
## Conclusion

Risk assessment is necessary to determine what risk aflatoxin contamination in milk poses to human health.

**Acknowledgement:** We thank the Finnish Ministry of Foreign Affairs for funding this project.

## Results

We surveyed 286 households in 37 villages using questionnaires. In total, 280 milk samples were analyzed using competitive ELISA. The levels of aflatoxins ranged from 0 to 359 parts per trillion (ppt).



## Contamination levels in different AEZ

Agro-ecological zones	Counties	n	% of samples with different levels of aflatoxin M1 ppt		
			<2 ppt	≤2 - <50 ppt	≥50 ppt
Humid	Tharaka Nithi	64	34	41	25
Sub-humid	Kwale	29	76	17	7
Temperate	Bungoma	64	53	41	6
	Kisii	63	65	30	5
Semi-arid	Isiolo	60	77	22	2

Overall, 58.9% of all samples had levels below limit of detection while 9.3% exceeded the WHO/FAO limit of 50 ppt.