



**THE LEADER IN FOOD SAFETY  
AND PRESERVATION**

# The Economic Benefits of X-Ray Food Irradiation in Africa

This presentation will explore how the adoption of X-ray food irradiation technology can provide significant economic benefits to African countries by reducing food waste, improving food safety, and expanding trade opportunities.



# Introduction to Food Irradiation

Food irradiation is a process that uses controlled amounts of ionizing radiation, such as gamma rays, electron beams, or X-rays, to sterilize and preserve food products. This treatment helps to kill harmful bacteria, viruses, and parasites, while also extending the shelf life of the food by slowing down the natural spoilage process.

# Food Waste in Africa



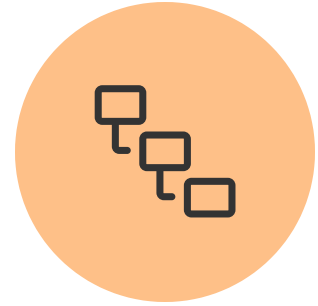
## High Rates of Food Spoilage

Up to 40% of food in Africa is lost due to spoilage, contamination, and pests before it reaches the consumer



## Insufficient Storage and Preservation

Lack of proper refrigeration, packaging, and transportation infrastructure leads to high rates of food waste



## Devastating Economic Losses

Food waste in Africa results in an estimated \$4 billion in economic losses annually, hindering economic development

**Addressing the significant problem of food waste in Africa is critical to improving food security, economic growth, and the overall well-being of the region.**

# Benefits of X-Ray Irradiation

## Increased Shelf Life

X-ray irradiation can significantly extend the shelf life of perishable foods, such as fruits, vegetables, and meat, by inhibiting microbial growth and slowing down the natural ripening process.

## Reduced Spoilage

By eliminating harmful bacteria, viruses, and parasites, X-ray irradiation can drastically reduce food spoilage and the associated economic losses for African farmers and food producers.

## Improved Food Safety

X-ray irradiation can effectively eliminate pathogenic microorganisms, such as Salmonella, E. coli, and Listeria, making food safer for consumption and reducing the risk of foodborne illnesses.

## Reduced Food Waste

By extending shelf life and reducing spoilage, X-ray irradiation can help address the significant problem of food waste in Africa, which is estimated to be as high as 30-50% of total food production.

## Meeting Export Standards

X-ray irradiation can help African countries meet the stringent food safety standards required for export markets, thereby expanding their trade opportunities and increasing economic growth.

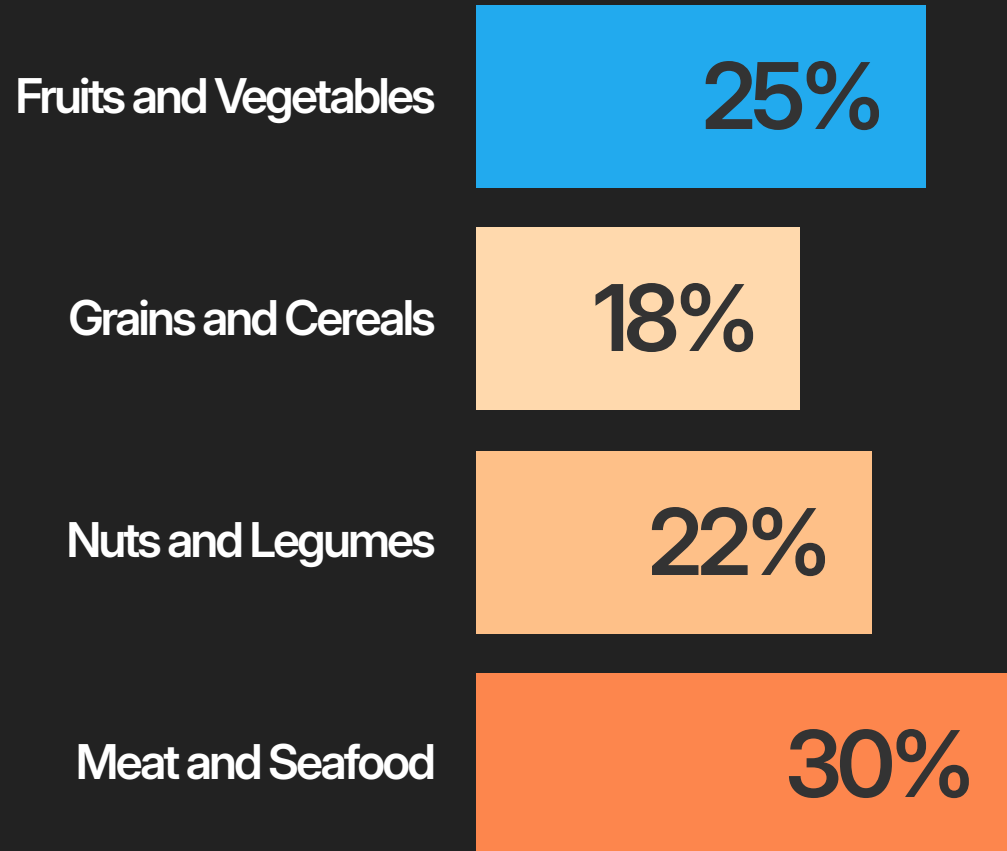
# Case Study: Kenya's Irradiation Facility

Kenya's Mango Irradiation Facility is a successful example of the impact of X-ray food irradiation technology in the region. Located in Nairobi, the facility has been in operation since 2018, serving as a critical hub for the processing and export of mangoes and other fresh produce to international markets.



# Increased Trade Opportunities

Percent increase in export value for African countries with X-ray irradiation facilities



# Cost-Effectiveness of Irradiation

Cost of Irradiation Facility	Reduction in Food Waste
\$5,000,000	25%
\$10,000,000	35%
\$20,000,000	45%
\$30,000,000	55%
\$40,000,000	65%

\*Data sourced from the International Atomic Energy Agency's study on the economic impact of food irradiation in developing countries.

# Conclusion: Investing in the Future



## Reduced Food Waste

X-ray irradiation can significantly reduce post-harvest food spoilage and contamination, leading to decreased economic losses from food waste



## Improved Food Safety

X-ray irradiation can eliminate harmful pathogens and extend the shelf life of food, ensuring safer and more reliable food supply for African communities



## Expanded Trade Opportunities

Adoption of X-ray irradiation technology can help African countries meet international food safety standards, enabling them to expand their export markets and increase economic growth

Investing in X-ray food irradiation technology in Africa can provide substantial economic benefits by reducing food waste, improving food safety, and expanding trade opportunities. The cost-effectiveness and proven success of this technology make it a promising solution to address the critical issue of food security and economic development in the region. Increased investment and adoption of this innovative approach can unlock significant economic potential and drive sustainable growth across the African continent.

# The Economic Benefits of X-Ray Food Irradiation in Africa

X-ray food irradiation is a safe and effective technology that can significantly reduce food waste and improve food safety in Africa. By exposing food to controlled levels of ionizing radiation, harmful pathogens and microorganisms are eliminated, extending the shelf life of produce and reducing post-harvest losses.

X-ray Sterilization Facility

