

# Food for thought!



**Let nutrition be thy medicine!**

**-Hippocrates**



**We eat to live!**



**(We live to eat ?!)**



# Session 2

## Introduction

# Role of Food Industry

- Safety
  - prevention of food poisoning;
  - detection of food pathogens and adulteration
- Preservation
  - Roughly one third of the food produced in the world for human consumption every year — approximately 1.3 billion tonnes — gets lost or wasted (food wastage).
  - Food Industry can ensure food security by minimising food wastage through devising food preservation techniques and processes.
- Convenience
  - Development of foods based on lifestyle changes and to cater to the palate of the consumer

# Food Waste



# Food Wastage

- **Hunger is still one of the most urgent development challenges, yet the world is producing more than enough food.**
- **Recovering just half of what is lost or wasted could feed the world alone.** <http://www.fao.org/platform-food-loss-waste/en/>;
- **Up to one third of all food is spoiled or squandered before it is consumed by people.**
- **In developing countries food waste and losses occur mainly at early stages of the food value chain and can be traced back to financial, managerial and technical constraints in harvesting techniques as well as storage and cooling facilities.**

**In developing countries 40% of losses occur at post-harvest and processing levels while in industrialized countries more than 40% of losses happen at retail and consumer levels.**

**Food losses during harvest and in storage translate into lost income for small farmers and into higher prices for poor consumers.**



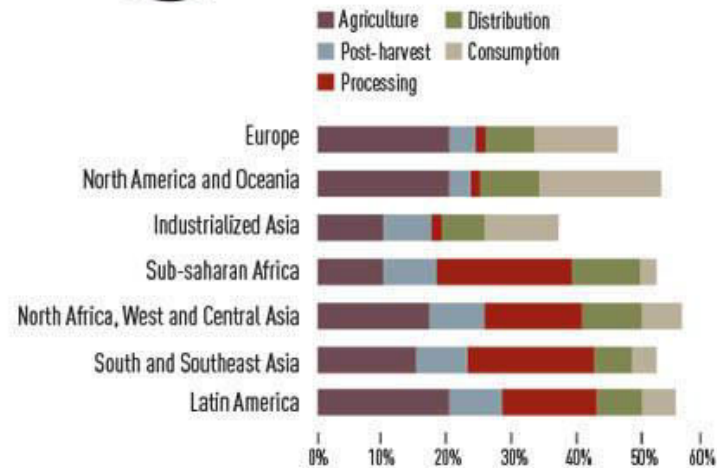
# 45%

## FRUIT & VEGETABLES FOOD LOSSES

Along with roots and tubers, fruit and vegetables have the highest wastage rates of any food products; almost half of all the fruit and vegetables produced are wasted.



3.7 trillion apples





**WASTING FOOD IS  
LIKE STEALING FROM  
THE POOR**

POPE FRANCIS

[PICTUREQUOTES.COM](http://PICTUREQUOTES.COM)



PICTUREQUOTES



**I don't like to waste anything. Any food left over from the night before is always eaten the next day.**

QUOTEHD.COM

**Martin Yan**  
Chinese Celebrity

**AND IF YOU WORRY THAT NOT FINISHING THE FOOD ON YOUR PLATE IS A SLAP IN THE FACE OF ALL THE HUNGRY PEOPLE EVERYWHERE, YOU ARE NOT LIVING IN REALITY. THE TRUTH IS THAT YOU EITHER THROW THE FOOD OUT OR YOU THROW IT IN, BUT EITHER WAY IT TURNS TO WASTE. WORLD HUNGER WILL NOT BE SOLVED BY FINISHING THE GARLIC MASHED POTATOES ON YOUR PLATE. ~GENEEN ROTH**

topfamousquotes.com

# Legal Obligations

## Recently enacted (National Food Security Act (NFSA), 2013)

As passed by the Parliament, Government has notified the National Food Security Act, 2013 on **10th September, 2013** with the objective to provide food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity. The Act provides for coverage of up to **75%** of the rural population and up to **50%** of the urban population for receiving subsidized food grains under Targeted Public Distribution System (TPDS), thus covering about two-thirds of the population. The eligible persons will be entitled to receive **5 Kgs** of food grains per person per month at subsidised prices of **Rs. 3/2/1 per Kg** for rice/wheat/coarse grains. The existing Antyodaya Anna Yojana (AAY) households, which constitute the poorest of the poor, will continue to receive 35 Kgs of food grains per household per month.

# Convenience

- Iced tea
- Tea bags
- Instant coffee



**Richard Blechynden, an English tea plantation owner popularised iced tea**

# **Indian Food Industry**

**India is one of the worlds major food producers but accounts for less than 1.5 per cent of international food trade.**

**Strategic geographic location and proximity to food importing nations benefit India in terms of exporting processed foods.**

# 1. INTRODUCTION

- Food biotechnology is the application of technology to modify genes of animals, plants, and microorganisms to create new species which have desired production, marketing, or nutrition related properties.



## Biotechnology

Any technological application that uses biological systems, living organisms or derivatives to make or modify products or processes for a specific use:

Traditional plant breeding

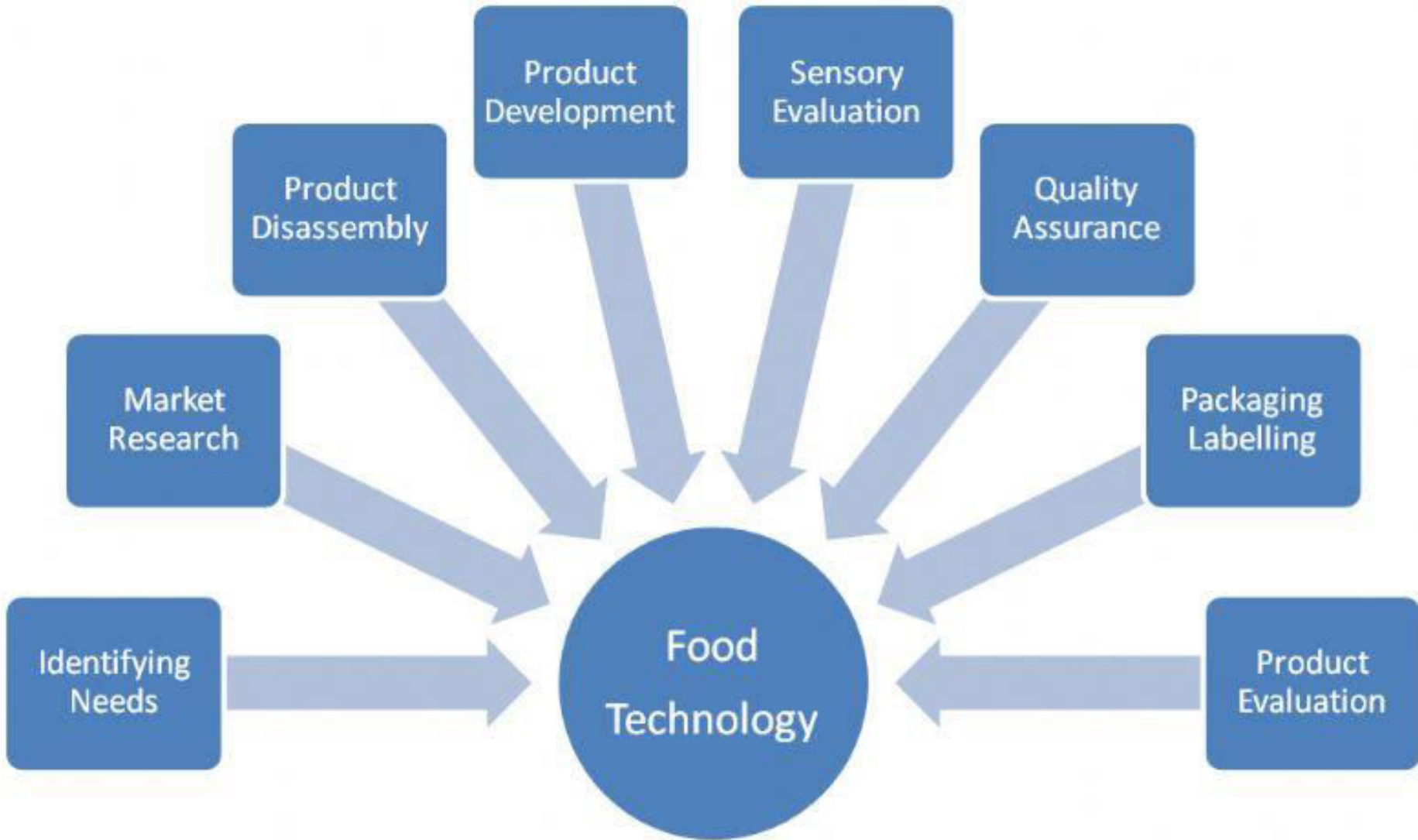
Old biotechnology – tissue culture, fermentation

Recently: Modern biotechnology:

*In vitro* nucleic acid techniques including

Recombinant DNA technology – direct injection of DNA into cells or organelles, fusion of cells beyond taxonomic family -→ overcome natural physiological, reproductive or recombination barriers..... Not used in traditional breeding & selection

# Food Technology



# Food Production

