VALUE ADDITION IN PAKISTAN -
CHALLENGES AND OPPORTUNITIES

Prof. Dr. Faqir Muhammad Anjum
Director General

National Institute of Food Science & Technology
University of Agriculture
Faisalabad, Pakistan
Contents

- Value Addition
- Food Processing
- Food Processing-Worldwide
- Food Processing-Pakistan
- Scenario of Major Food Crops
- Challenges and Opportunities
Value Addition

• Value addition - process of increasing the economic value and consumer appeal of an agricultural commodity

• It is a production/marketing strategy driven by customer needs and preferences

• “Value-added” is used to characterize food products converted from raw materials through processes that give the resulting product an “incremental value” in the market place either through higher price or expanded market

• Examples of “value-added products ” - Jams, Ketchup, squashes, cheeses and pre-cooked meats are considered
Why Value Addition?

• Make more money: value added agricultural product has more market value than raw commodity

• Meet changing tastes and preferences of consumers - convenience, quality, safety, health, variety, price, social and environmental consciousness

• Compete by differentiating a product in a highly competitive market
Food Processing and Value Addition

- Food processing involves any type of value addition to the agricultural produce starting at the post harvest level
  - The value of farm products can be increased through any of the route singly or in combination

- Cleaning & cooling
- Processing
- Distributing
- Churning
- Culturing
- Grinding
- Hulling

- Extracting
- Drying
- Smoking
- Labeling
- Packaging
Traditional Approach to Food Processing

- Small Farmers
- Middle Man
- Retailing
- Large Scale Process
- Small Scale Process

Alternative pathway:
- OR

Process flow:
- Small Farmers -> Middle Man
- Middle Man -> Retailing
- Retailing -> Large Scale Process
- Large Scale Process -> Small Scale Process
- Small Scale Process -> OR
Food Processing: Worldwide

• The size of global processed food industry is estimated to be valued around US $3.5 trillion and accounts for three-fourth of the global food sales.

• Most of the growth is taking place in developing countries in Eastern Europe, Asia and Asia-Pacific, which are experiencing increase in population.

• The huge market in ASEAN countries alone, with over 550 million people, is a vast potential waiting to be untapped.

• Despite its large size, only 6% of processed foods are traded across borders compared to 16% of major bulk agricultural commodities.
Food Processing: Worldwide …

- Fortune 500 indicate Food Sector is growing 15.9% annually for the past 5 years

- Major food processing industries are American and European

- Convenience products such as dried instant soups, reconstituted fruits and juices, shelf cooking meals are becoming popular throughout the world

**Employment in Food Sector**
- US: 12 million
- Europe: 2.5 million

**Food Market**
- US = US $ 100 billion
- India: US $ 69.4 billion
Food Processing: Worldwide …

• Japan is the largest food processing market in the Asian region followed by India and China

• One of the most technically advanced food-processing industry globally is Australia as the products produced are of international standards having comparatively low prices

• Countries in the Sub-Saharan African region, Latin America and some parts of Asia continue to be on the lower-end of technology for competence in food items

• Europe, North America, and Japan are on the higher-end of technology, with a sharper shift towards convenience and diet foods.
Top industries
Fast growers 2008 Fortune 500
Food Processing: Pakistan

• Food Industry is the 2nd largest in Pakistan

• Accounts for 27% of its value-added production & 16% of the total employment in manufacturing sector

• With an estimated 169 million consumers, Pakistan holds the world’s eight largest market

• More than 1000 large scale food processing enterprises in Pakistan

• 75% of rural-based food manufacturers are in so-called informal sector (difficulty in accessing raw material, finance skills, knowledge & management)
• Pakistan's food sector is changing significantly with an inclined shift in lifestyles and traditional eating habits

• Average consumer spends 42% of one’s income on food

• Retail sales of processed foods is expanding by 10 % per annum and currently are estimated at about US$1.4 billion, of which imported products account for US$325 million

• Supermarkets are gaining in popularity as a shopping venue and now account for about 10% of all retail food sales

• In addition, Pakistan now hosts numerous western-style fast food chains reflecting a rising popularity with such eating style
## Food Processing Units in Pakistan

<table>
<thead>
<tr>
<th>Type of processing industry</th>
<th>Units</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and Vegetable</td>
<td>155</td>
<td>23,500</td>
</tr>
<tr>
<td>Cereal based</td>
<td>1246</td>
<td>45,000</td>
</tr>
<tr>
<td>Edible oil</td>
<td>321</td>
<td>34,000</td>
</tr>
<tr>
<td>Sugar sector</td>
<td>427</td>
<td>25,000</td>
</tr>
<tr>
<td>Livestock</td>
<td>68</td>
<td>28,5000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1989</strong></td>
<td><strong>154,250</strong></td>
</tr>
</tbody>
</table>

**Source:** Estimates based on report of the APO Multi-Country Study Mission on Rural Based Food Processing Industry, Abdul Hafeez Chaudhary, APO (2004). (Mt = Metric tons; Mnt = Million tons; Mnl = Million litres)
• The ability of food processors at industrial level depends absolutely on the availability of raw materials

• Pakistan is a major producer of commodity and industrial crops (such as wheat, rice, sugarcane and oilseeds)

• Livestock and horticultural products are also important elements in agriculture and provide additional raw materials for processing and export
Cereals

- Wheat is the leading food grain in Pakistan, 9042 thousands hectares area under cultivation and 80% farmers involved (Federal Bureau of Statistics, 2009-2010)

- Rice is second most important cereal crop with 2883 thousand hectares of cultivated area (Federal Bureau of Statistics, 2009-2010)

- Harvest and post-harvest losses of wheat and other grains range between 15-18%

- Value added products: biscuits, starch, glucose, etc.
Fruits and Vegetables

• Great demand in the international market, especially mango, apples, dates and citrus

• 12% share in agriculture value addition

• Citrus and mango account for 48% of all fruits produced in Punjab

• Balochistan produces the second largest volume of fruits, mainly apples and dates

• High post harvest losses (20-40%), Only 3-5% is being processed

• Value added products: Jams, squashes, syrups etc.
Oil Seeds and Vegetable Oils

• Self-reliance in edible oils during 1947 to 1960

• Major sources of edible oils are:
  • Cottonseed
  • Sunflower oil
  • Canola oil
  • Rapeseed oil

• Import started in 1960; Now the local production is only 29% and import is 71% (Palm oil constitutes > 90% of oil imports)

• Higher per capita consumption: 11.9 Liters per capita

• Value added products: specialty fats, shortenings, margarine
Sugarcane

• One of the major cash crop in Pakistan providing raw material for sugar based products

• Its share in value added of agriculture and GDP are 3.6 percent and 0.8 percent, respectively.

• During 2009-10, area under sugarcane cultivation was 943 thousand hectares

• Sugar industry waste like mud, molasses can be used to produce several value added products using biotechnological techniques

• Value added products: White sugar, brown sugar, refined sugar, chipboard and paper
Livestock Sector

- Livestock accounted for about 50% of GDP of agricultural value added and about 9.4% of the GDP
- Net foreign exchange earnings from livestock products and by-products accounts for 11% of the overall export earnings of the country
- Pakistan is probably one of the world’s least efficient users of livestock resources since home-based slaughtering generally does not make the most efficient use of the by-products
Milk and Dairy

- Pakistan is the 5th largest producer of milk in the world, with 45 billions liter annual production (Ministry of Livestock and Dairy Development, 2009-2010)

- Only 4-5% milk is being processed

- Value added dairy products commonly consumed in Pakistan: whole milk powder, skimmed milk powder, condensed milk, ice cream, butter, ghee

Source: Economic Survey of Pakistan
Meat & Poultry

• Poultry sector is one of the organized and vibrant segments of agriculture industry of Pakistan

• This sector generates employment (direct/indirect) for about 1.5 M people

• Poultry meat contributes 23.8% of the total meat production in the country

• Meat sector is highly unorganized in Pakistan, though local and export potential exist

• Value added products: Gelatin, sausages etc.
Barriers to Value Addition in Pakistan

**Insufficient Raw Material Supply**
- Dislocation of manufacturing units
- Fluctuation in raw material supply

**Inadequate Safety Standards**
- Poor safety/hygiene at workplace and for consumers
- Operation of old machinery without preventive measures
- Adulterated food products and inadequate packaging

**Erratic Inputs & Poor Artisan Skills**
- Problem in potable water supplies
- Poor literacy level and skills of artisan

**Poor Financial Support**
- Problem in extension of credit by commercial banks
- Reluctance in lending re-investments

**Poor Technical Choices Lack of Innovation**
- Poor choice of machinery and processes
- Non-existent innovation
Major Challenges as a Nation

- Population growth
- Ageing population
- Urbanization
- Food for health
- Food for different age groups
- Food for pleasure and convenience
- Health disorders: CVD, Obesity, hypertension, diabetes
- Food Safety
Challenges in Agro-Processing

- Post-harvest losses due to lack of storage and transport infrastructure
  - Food grains: 15-18%
  - Fruits and vegetables: 20-40%.
- Inability to manage raw material supply
- Inadequate cold chain facilities
- Poor financial support
- Lack of investment in the supply chain
- Lack of training facilities for farmers and processors
Challenges in Agro-Processing

- High excise duty on packaging
- Varying standards for food products
- Poor or non-existent standards of safety in the workplace and for the consumer
- Poor quality of the products
- Weak regulatory system
- Poor technical choices and a lack of innovation
Challenges in Agro-Processing …

• Frequent failure or interruption of power production/processing belts

• Unequipped food analysis laboratories

• Inefficient market structure

• Lack of adequate trained manpower

• Lack of coordination links with academia, industry and research organizations
Opportunities of Food Processing in Pakistan

- Halal meat products
- Seed / grain drying, aeration and storage technology
- Application of extrusion technology in cereals
- Rice drying technology for obtaining higher head rice yield
- Efficient pulse processing technology
- Rice par-boiling technology
- Pre-cooling technology for fruits and vegetables
Opportunities of Food Processing in Pakistan

- Fruits and vegetables canning, grading, and packing technology
- Cold stores for potatoes, citrus, apples and other foods
- Modified atmosphere technology for fruits and vegetables
- Apricot and dates drying and processing technology
- Small-scale fruit juice technology for the remote fruit growing areas
- Value addition in milk e.g. milk powder, cheese, yoghurt and ice-cream
Suggestions

- Establish agro-processing training institutes
- Bulk handling and storage technology at farm levels
- Credit by banks and financial institutions
- Setup of "Food Parks" and "Technology Transfer Centers"
- Develop cottage industry on priority basis
- Establish small food processing units at district level
- Encourage direct marketing of products by the farmers
- Revise Pakistani food standards for quality of food products
Suggestions

- Use of local material in packaging
- Improving process efficiency and decreasing losses
- Value added products rather than fresh produce
- Promote export of indigenous products for ethnic groups
- Linkages between industry and research organizations
- Focus on brand building
- Creating awareness among consumers