

Role of Food Processing and Post-harvest Management in Improving Food and Nutrition Security in Cities

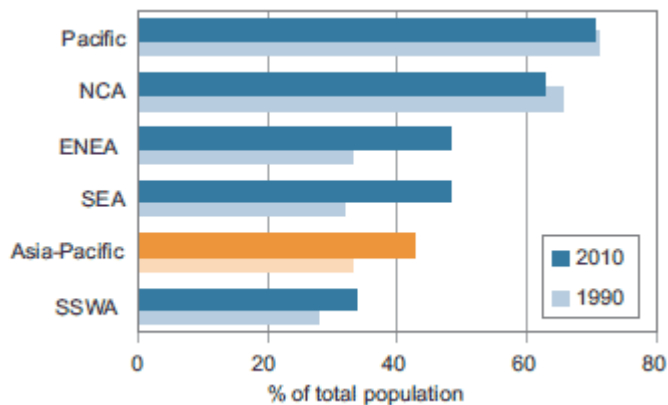
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Overview

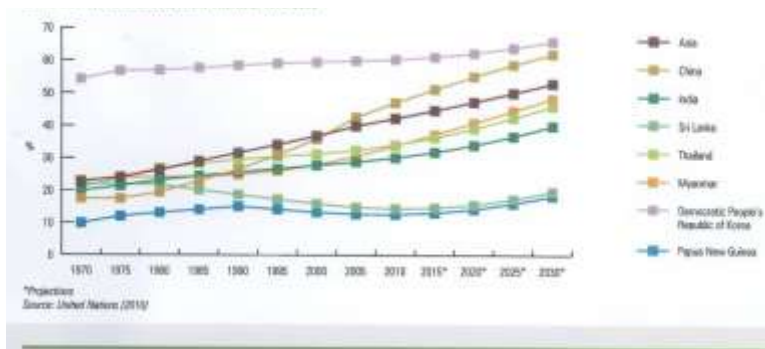
- Urbanization and its impacts on food demand;
- Impact of urbanization on food and nutrition security;
- Challenges of meeting the food requirements of cities in the region
- Role of post-harvest management and processing
 - Enabling factors required
- Conclusion

Urban Population in the Asia-Pacific 1990 and 2010



UNESCAP Statistical Yearbook for Asia and the Pacific 2011

Urbanization Trends in Asia

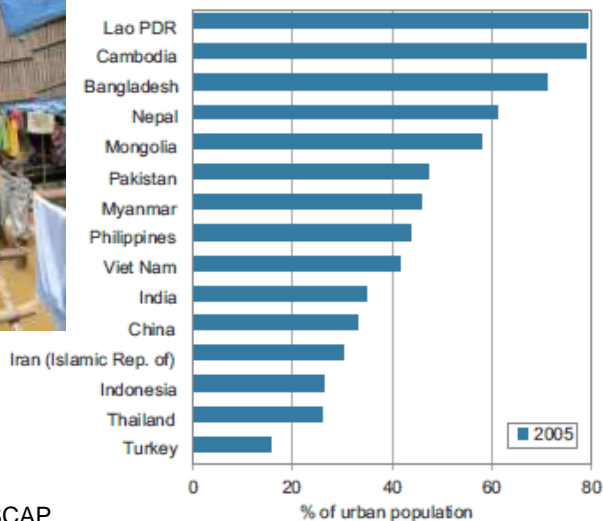


*Projections
Source: United Nations (2011)



Source: UNESCAP, 2011

Urban Slum Population - Countries in Asia and the Pacific, 2005



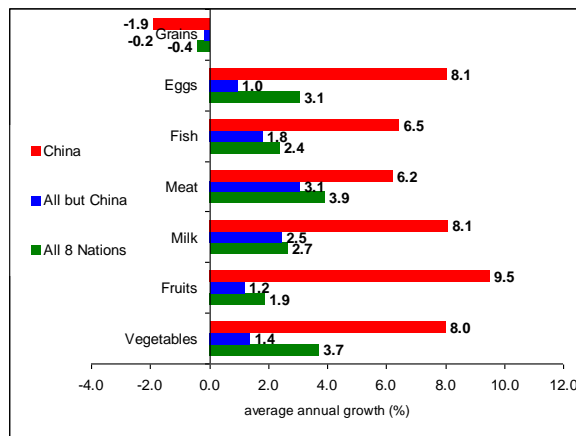
Source : UNESCAP



Urbanization and Food Demand

1. Impacts of Urbanization

■ Diversification of diets



Source: FAOSTAT, © FAO Statistics Division 2007, 30 July 2007

2. Impacts of Urbanization

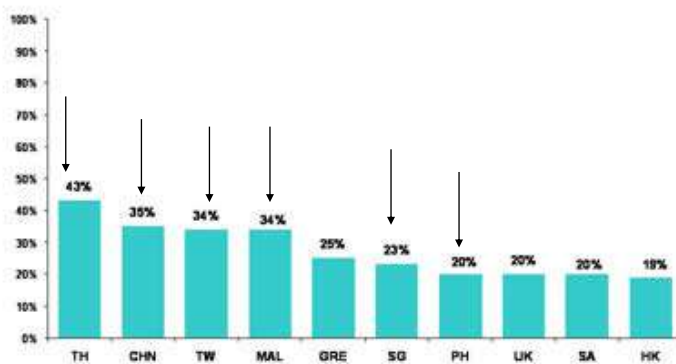
- Increased consumption of processed foods
 - Foods that have minimal time requirements for preparation
 - Cooking in the package
 - Ready- to-eat
 - Ready-to-cook



Increasing Consumption of Ready-To-Eat and Prepared Foods

How often do you purchase ready to eat meals rather than traditional meals made from scratch?

Top10 - Frequently



Base: All respondents

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Increased Demand for Pre-Packaged Foods in Cities



Foods Produced in the Formal Sector



Increased Demand for Pre-Prepared Foods in Cities



Foods sold in the Informal Sector

3. Impacts of Urbanization

- Increased demand for fresh and processed foods that are safe and of good quality in cities.



How Is Urbanization Impacting on Food and Nutrition Security?



FOOD SECURITY

- Food security exists when all people at all times have physical and economic access to safe and nutritious food for a healthy and active life (FAO, 1996).

Ingredients of Food Security



Source: FAO (1995) *Dimensions of need-An Atlas of Food and Agriculture*



Dimensions of Food Security

- **Availability**
 - Supply of food from domestic production, import and food aid.
- **Access**
 - Adequate resources of people to obtain food;
 - Affordability of the food supply
- **Utilization**
 - health situation of the people;
 - the culture and livelihood of societies
 - clean water, sanitation, health
- **Stability**
 - variability in any of the above, and in coping capacity



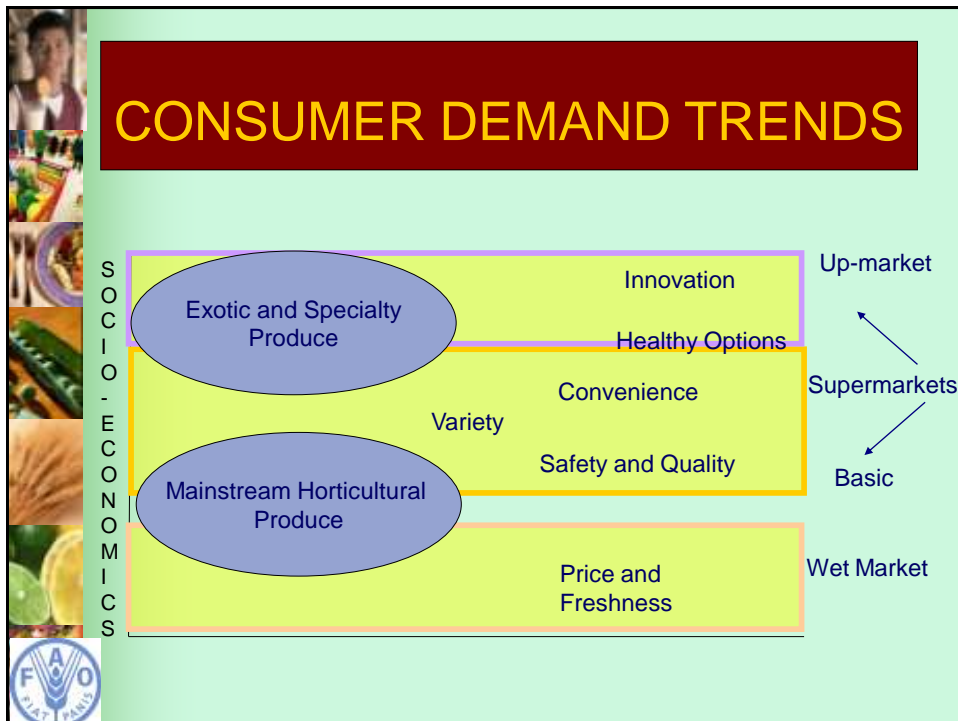
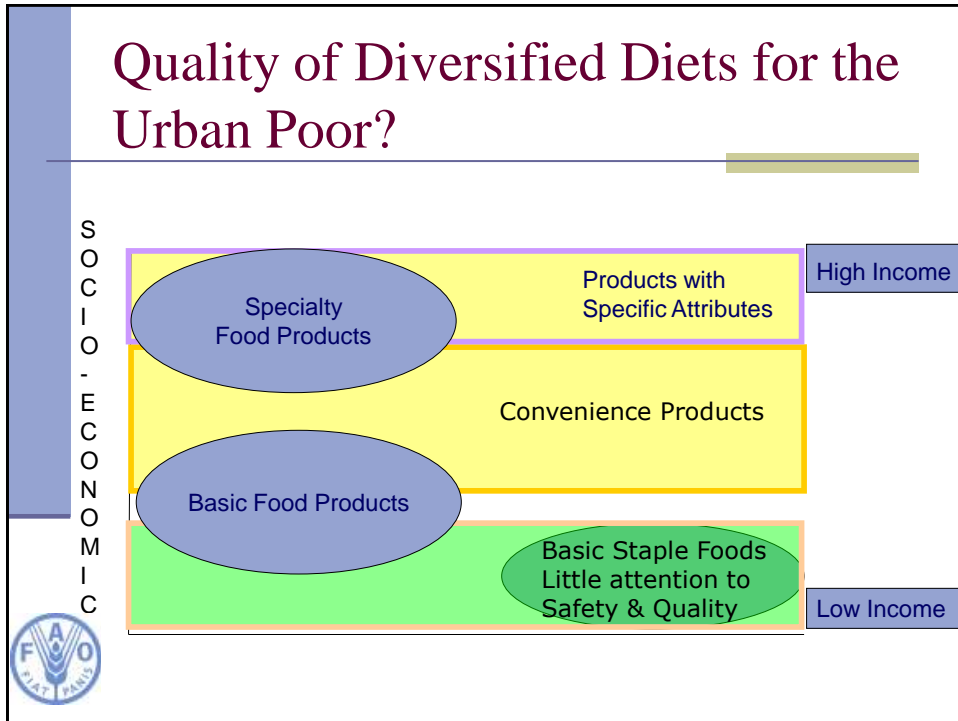
Factors that Impact on Access to Food in Urban Areas

Access to food in urban areas:

- Is dependent on cash exchange
 - Most of the food needed by the household must be purchased;
- Is dependent on the market system and on processed food.

Wage employment and monetary income are, therefore, main pre-requisites for achieving food and nutrition security in urban environments





Key Challenges in Feeding Cities

- *Responding to and meeting the needs of diversified diets in urban centers by the traditional food supply chains that predominate in cities across the region.*

Characteristics of Traditional Supply Chains

- Production orientation
- Fragmented production units
- Multi-layered channels
- Un-differentiated products
- Minimal value added
- Predominance of wholesalers
- Production Push
- High levels of post-harvest loss



...Key Challenges in Feeding Cities

- *High levels of post-harvest losses in food marketing channels*
 - Increase food prices
 - Reduce food *availability*



Compression Damage



Trimming losses in cabbage due to insect/physical damage



Post harvest Losses in Rice in South East Asia

Activity	Estimated Range of Loss (%)
Harvest	1-3
Handling	2-7
Threshing	2-6
Drying	1-5
Storage	2-6
Transport	2-10
Total	10-27



Source: FAO

Factors that Contribute to Losses in Grains

- Inadequacy of drying and threshing facilities
- Improper and inadequate transportation and handling
- Poor design of storage infrastructure
- Poor storage management
- Poor milling techniques
- Low level of farmer awareness
- Insect pests and rodents throughout the post-harvest chain.



Post-harvest Losses in Fruits and Vegetables in Selected Asian Countries

Country	Fruit (%)	Vegetables (%)
Vietnam	25 - 40	20-30
Malaysia	20	20
Thailand	14	17 - 35
Philippines	28	42
Indonesia	15 - 40	15 - 40

Source: Bautista (2001)



Quantitative Loss At Various Points of the Supply Chain in Thailand

Crop	Farm to Wholesale		Wholesale to Retail	
	Wt. Loss (%)	Defects (%)	Wt. Loss (%)	Defects (%)
Cucumber	2.55	3.77	2.43	4.78
Sweet Pepper	4.88	5.13		
Lettuce	2.87	2.58	1.32	4.98
Tomato	3.33	6.89	0.41	9.08
Chinese cabbage	1.57	3.32	1.92	7.54

Source: Amuttiratnana and Passornsiri (1992)



Causes of Losses in Fruits and Vegetables

■ Technical causes:

- Damage due to poor handling and packaging
- Temperature abuse
- Water loss owing to poor relative humidity management



■ Organizational causes:

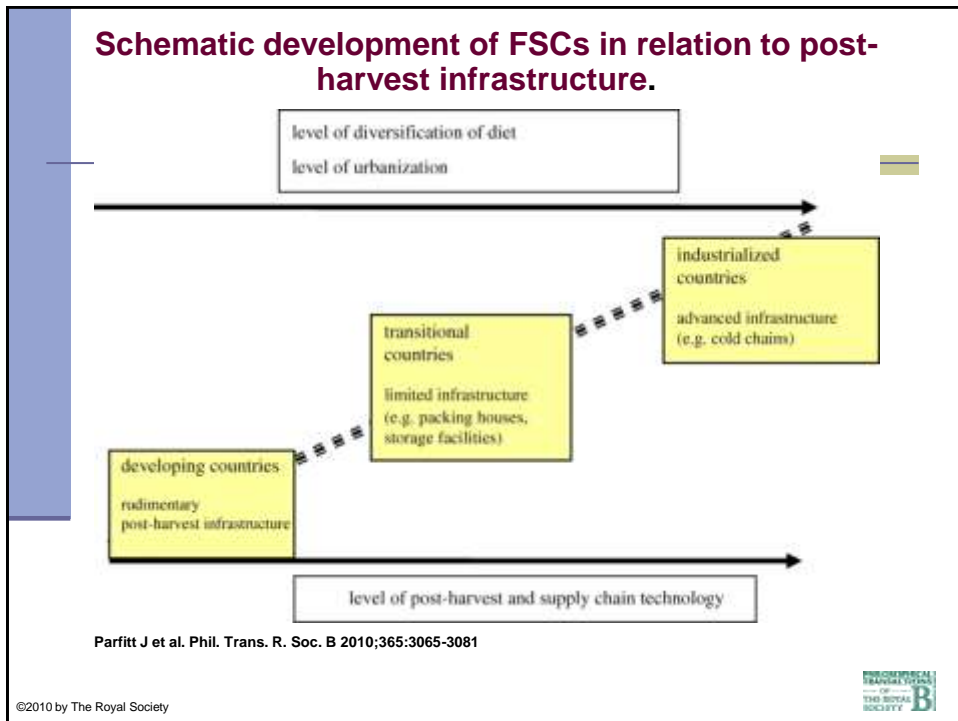
- Multi-layering of supply chains



Key Roles of PH Management

- Increase efficiency in supply chains to feed urban populations
- Reduce losses





Enabling Factors

- Improved transport and logistics systems
- Roads
- Markets
- Infrastructure for storage and marketing
- Improved organisation of small farmers
- Human resource development to:
 - upgrade technical and organizational skills for post-harvest loss reduction
 - improve efficiency



Technical Roles of Processing

- Enhance nutritional quality
- Increase shelf-life
- Improves transportability
- Meet consumer needs for convenience
- Reduce post-harvest losses
- Improve food safety and quality
- Add value



Contribution of Processing to Improving Food and Nutrition Security in Cities

Benefits of Processing

- Added value
- Reduced post-harvest losses
- Income generation
- Employment creation
- Improved safety, nutritional quality and taste

Impact

- ↑ income and access
- ↑ food *availability*
- ↑ access to food
- ↑ access to food
- ↑ access to safe and nutritious food



Enabling Factors for Improvements in Processing

- Access to consistent supplies of good quality raw materials
- Access to technologies of an appropriate scale
- Access to credit
- Human Resource Development
 - Meeting requirements for food safety and quality



Conclusion

- Assurance of food security and nutrition in cities hinges greatly on developing efficiency in post-harvest handling, processing, storage, packaging, preservation, and distribution of food that is affordable.



THANK YOU

