

Packaging Development for Agriculture Product and Produce

Assist.Prof.Dr. Chana Yiangkamolsing
Department of Automotive Business Engineering
School of Engineering
The University of Thai Chamber of Commerce

Packaging Expert

Thai Packaging Association, TPA

chana99@Hotmail.com +6685-4815895

Agenda

- ▶ How agriculture product is important to Thailand economics?
- ▶ Thailand agriculture value chain.
- ▶ Examples of agricultural value chain (Durian, pineapple)
- ▶ Agricultural product logistic and transportation
- ▶ Wholesale market (Talaad Thai, Talaad Simoommuang)
- ▶ Packaging foundation

Agriculture product and revenue income

The value of agricultural exports by 2559-2560.

Item	2559	2559 (January - September)	2560 (January - September)	The rate of increase / decrease (%)
1. NR	167 182	118 183	164 829	39.47
2. undertakings rice products	172 554	121 806	91 852	-24.59
3. Fruits and Products	125 783	95 639	90 598	-5.27
4. Fish and products	110 744	81 353	76 213	-6.32
5. products from chicken meat	89 063	64 790	71 013	9.61
6. cassava and other products made from cassava.	101 593	75 217	67 429	-10.35
7. Sugar and products	94 196	75 804	42 594	-43.81
8. vegetable products	22 321	16 693	17 708	6.08
9. waste and scrap surplus feed.	19 585	14 255	16 867	18.32
10. Shrimp Products	68 840	48 524	8382	-82.73
Other agricultural products	244 854	183 095	366 707	100.28
Agricultural Products	1216716	895 359	1014193	13.27
Total exports	7550704	5639633	6001376	6.41

Millio

The top 10 exporting countries, Thailand.

Million Baht

Country	2559	2559 (January - September)	2560 (January - September)	The rate of increase / decrease (%)
1. People's Republic of China	207 708	145 205	177 725	22:40
2. Japan	160 853	118 404	128 011	8.11
3. United States	132 497	97 956	100 098	2.19
4. Vietnam	44 679	28 689	56 172	95.80
5. Malaysia	53,600	40 238	45 353	12.71
6. Indonesia	51,650	44 697	38 510	-13.84
7. Myanmar	38 146	28 275	31 816	12:52
8. Cambodia	29 482	22 431	26 181	16.72
9. Taiwan	20 910	15 179	25 569	68.45
10. United Kingdom	34 307	26 606	24 407	-8.27
other country	442 884	327 678	360 350	9.97

Source: Office of Agricultural Economics In cooperation with the Customs Department

Source:

http://www.oae.go.th/oae_report/export_import/exp_topten.php?imex=2

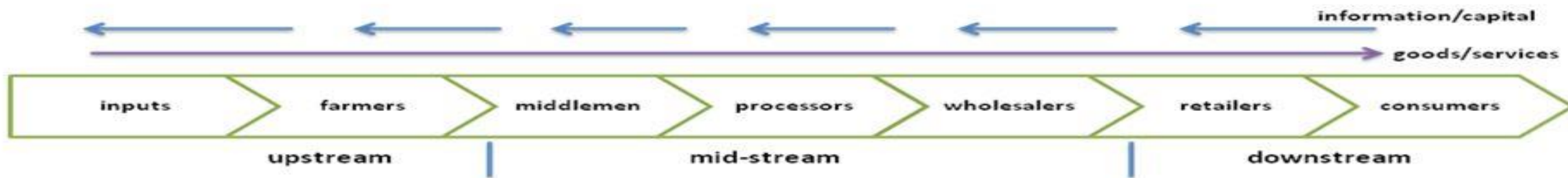


Thailand Agricultural Value Chain

Traditional VS Modern Supply Chain

- Some agricultural products has changed from the traditional supply chain towards the **modern supply chain**, namely, **chicken, organic vegetables and rice, sugar cane and sugar, milk** and to a lesser extent cultured shrimp, while most products remain under the traditional system.

Traditional supply chain



Modern supply chain



Food and Agriculture Value Chain in Thailand

Primary Agriculture

- Domestic Production
 - Plantation
 - Livestock
 - Fishery
- Imports

Processed Products

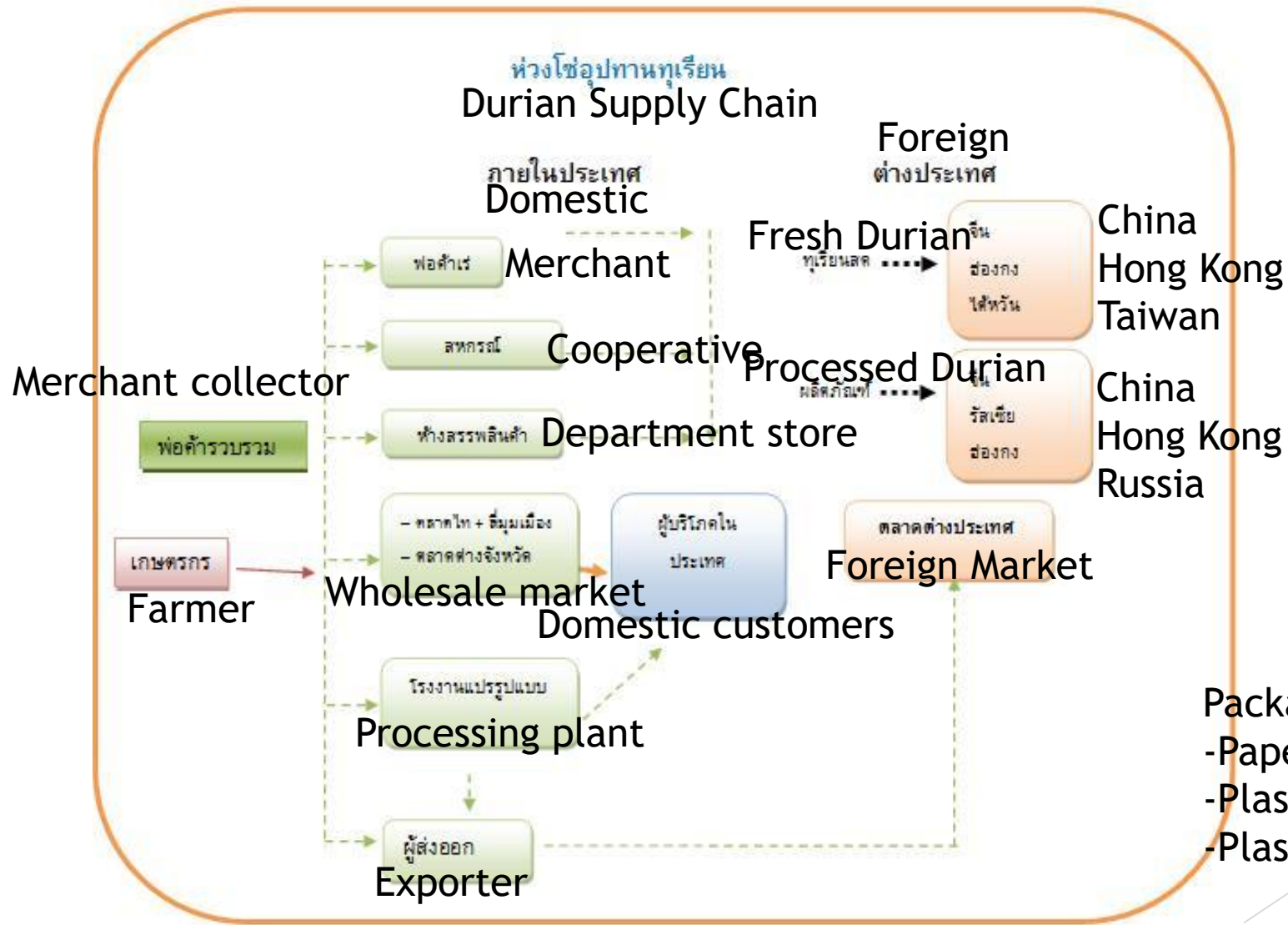
- Processing of Fishery Products
- Vegetable Oil
- Seasoning
- Meat Processed Products
- Fruit and Vegetable Processing

Distribution Channels

- Traditional Trade
- Modern Trade
- Restaurant
- Hotels
- Food Franchise
- Exports

Source: Thailand Convention & Exhibition Bureau

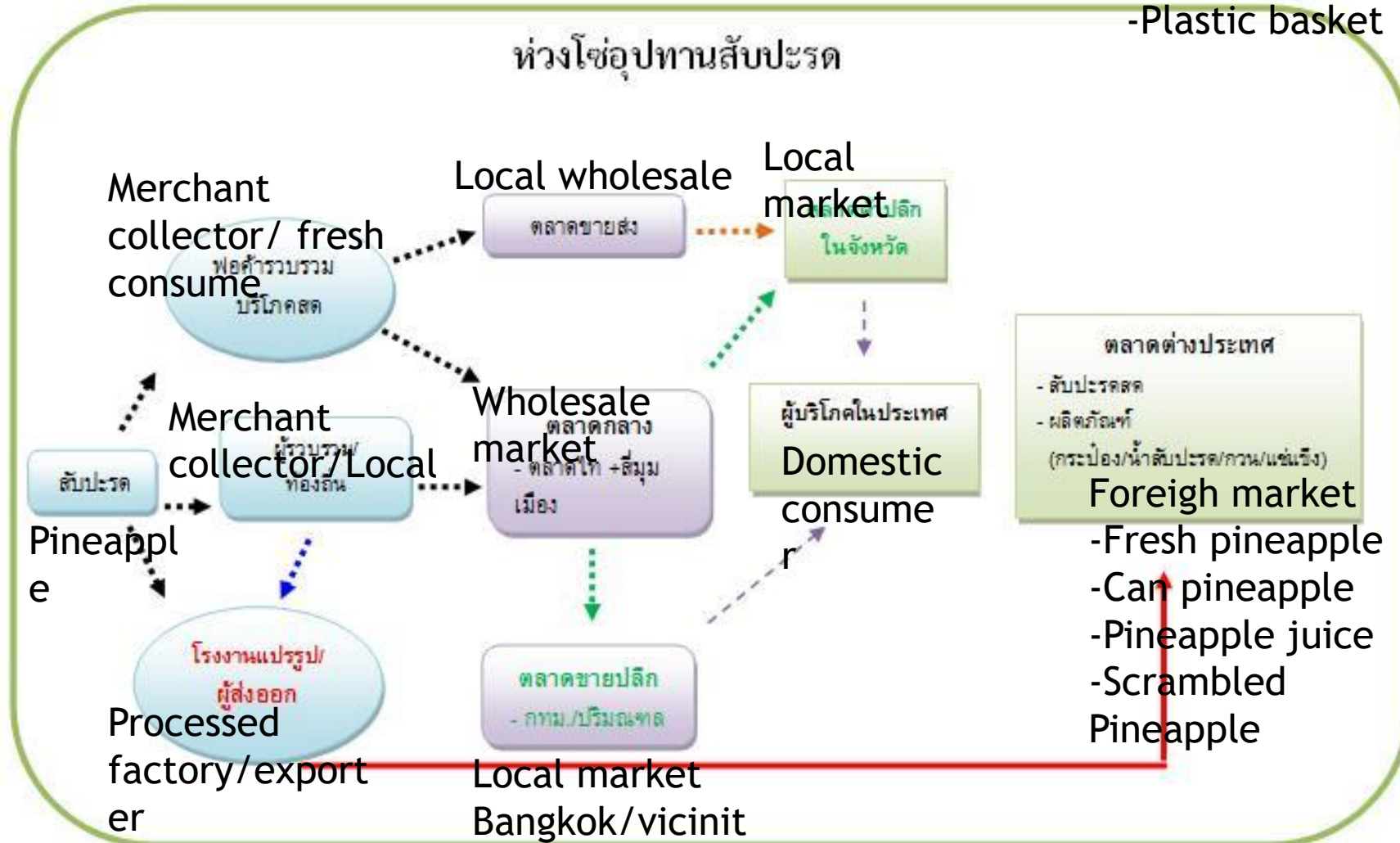
Durian Supply Chain



- Packaging**
- Paper box
 - Plastic net
 - Plastic basket

Pineapple Supply Chain

Packaging
 -Paper box
 -Plastic basket



One Ton Truck & Road Logistic

- ▶ One ton truck is very popular.
- ▶ Road network is very important for transportation and distribution not only in Thailand but also vicinity countries.
- ▶ Cold chain (for sea food) and food chain are distributed all country and vicinity.



From Farm to Markets

- ▶ Truck is an important vehicle for Transportation.
- ▶ Fresh vegetable to wholesale market.
- ▶ Overweight more than 1 Ton.
- ▶ 4 Wheel truck and 6 wheel truck.

Packaging
-Paper bag
-Plastic basket



Six wheel truck

- ▶ More volume and weight.
- ▶ Slower speed than four wheel truck.
- ▶ Economy price shipment.

Packaging
-Paper box
-Plastic net
-Plastic basket



Cold Chain

- ▶ Truck with air condition.
- ▶ Keep sea food and fresh vegetable.
- ▶ Shipment seafood to northern people and east north people.
- ▶ Shipment to Laos.



Food waste and Food Lost

- ▶ Select good quality from poor quality at wholesale market.
- ▶ Time windows within 10 hours.
- ▶ Weight itself on top of below produce. So bellowed produce is bruised and spoiled.
- ▶ Need temperature and humidity control.
- ▶ Accidents from Transportation.

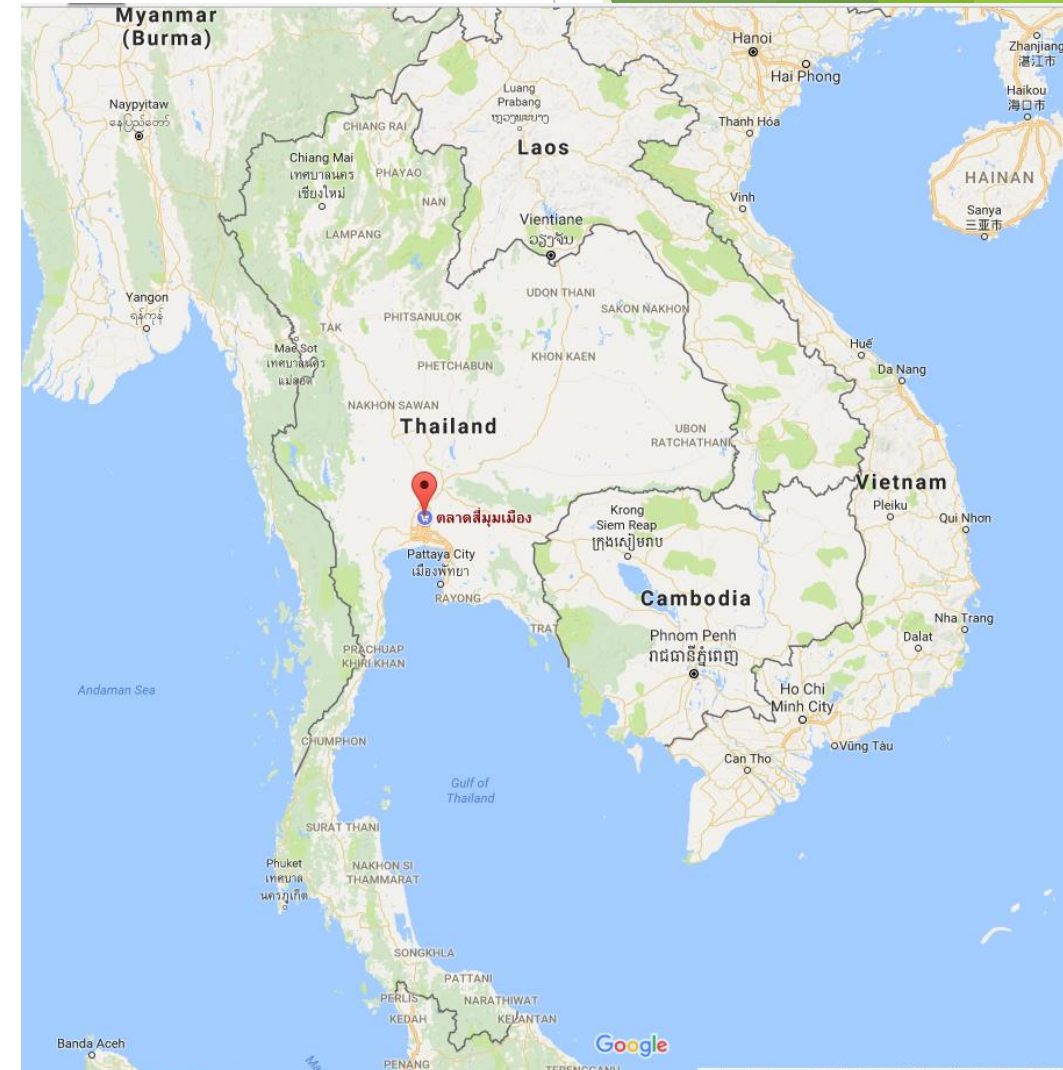


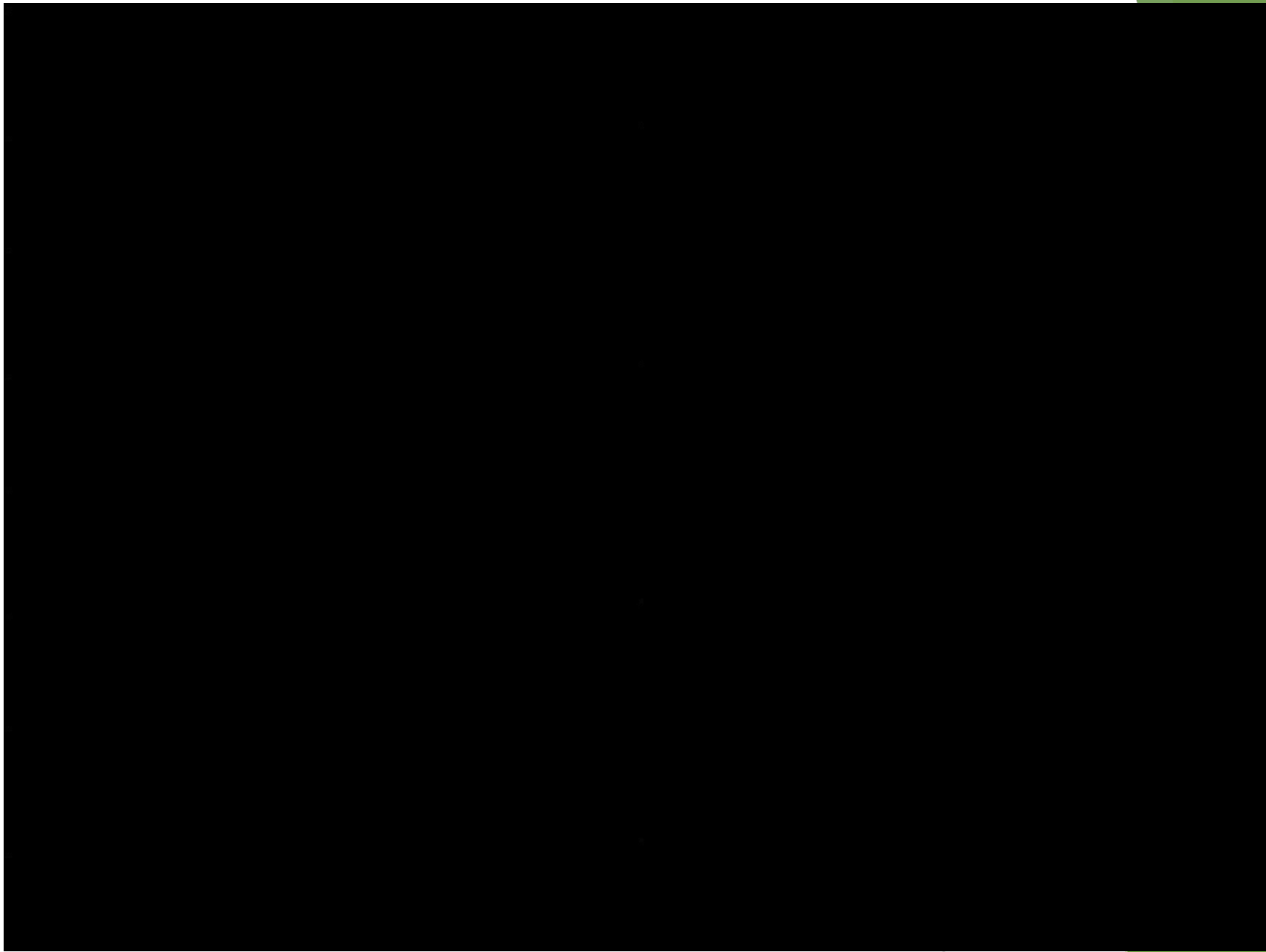
Accidents of Transportation



TALAAD (Market) THAI WHOLESAL MARKET

- ▶ Center of agriculture product in Thailand
- ▶ The biggest wholesale produce market in Thailand <http://talaadthai.com/eng>
- ▶ Introduction to Talaad Thai <https://www.youtube.com/watch?v=1id0hl9nucE>
- ▶ Talaad Simummuang <http://www.taladsimummuang.com>
- ▶ Specific market http://talaadthai.com/map_page

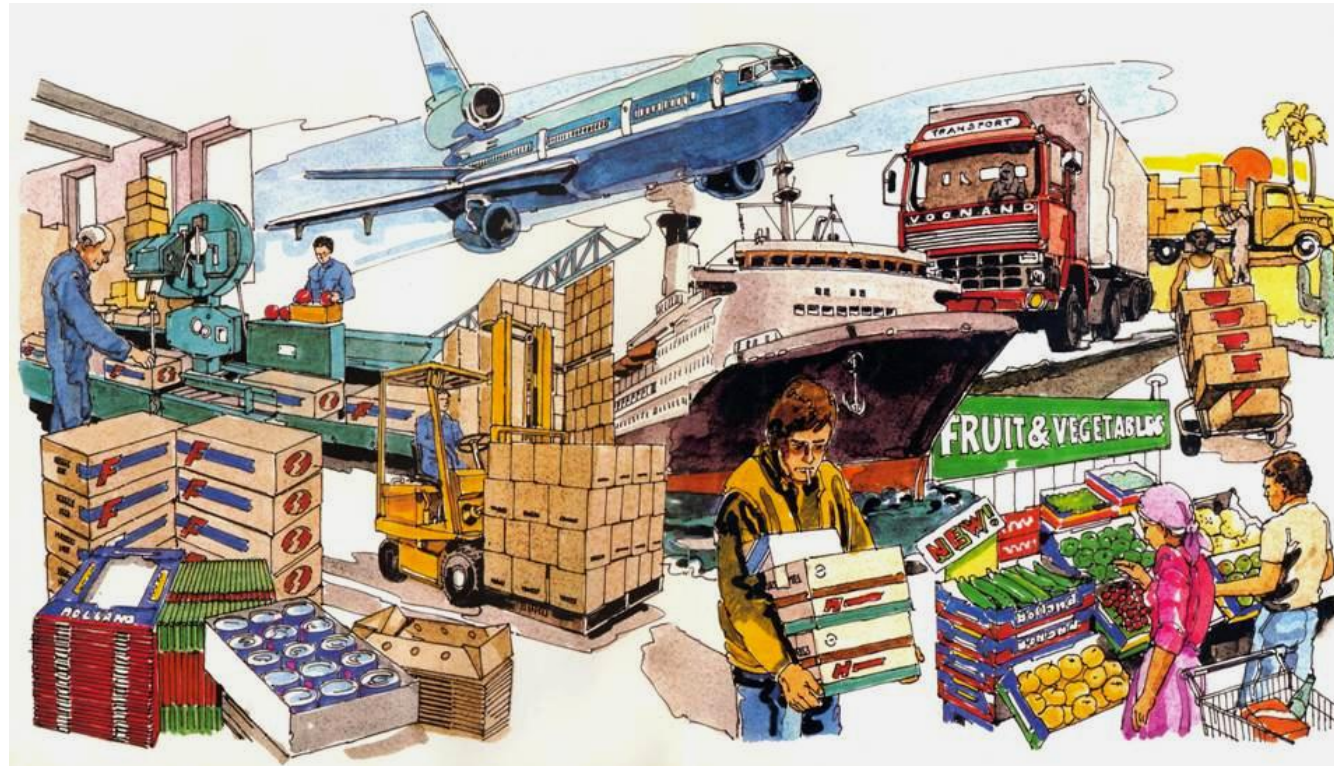




<https://www.youtube.com/watch?v=hNABWI4QjSU>

Packaging Definition Today

- ▶ It's a multi-disciplinary among Sciences, Technology, and Arts of preparing merchandise from sources of production, transportation, distribution until to customers with proper price.



Packaging Function

- ▶ Contain
- ▶ Protection & Shelf life
- ▶ Distribution
- ▶ Communication
- ▶ Uniformity for mass scale
- ▶ Supply chain
- ▶ Varieties of packaging for agriculture product and produce

Packaging Function Today

Not only simple basic functions but also

- ▶ Protect product within required shelf life and all steps in distribution till destination
- ▶ Improve whole supply chain efficiency
- ▶ Meet regulatory and trade requirement
- ▶ Efficient communication
- ▶ Promote sales by presentation product on-shelf , advertising and value added for consumers
- ▶ Support sustainability
- ▶ Enhance company image and Corporate Social Environment Responsibility (CSER)

Production

Consumer

Logistics

Packaging Importance

Marketing

Environment

Retailer

Packaging Importance

For Consumer

- ▶ Security and safety
- ▶ Product and benefit information
- ▶ Product quality within specified shelf-life
- ▶ Longer shelf life
- ▶ Storage at home
- ▶ Use convenience

Packaging Importance

For Production

- ▶ Commercially manufacturability
- ▶ Mass production
- ▶ Increase productivity
- ▶ Product quality consistency

Packaging Importance

For Logistics

- ▶ Safety for operators
- ▶ Efficiency (space utilization and speed)
- ▶ Cost saving
- ▶ Damage protection
- ▶ Export globally
- ▶ Status and Traceability

Packaging Importance

For Marketing

- ▶ An effective of Marketing Strategy
- ▶ Brand image/modernity
- ▶ Differentiation
- ▶ Segmentation
- ▶ Positioning
- ▶ Vehicle for sale promotion

Business competitiveness requires right marketing strategy

Marketing Strategy = 5P

- ▶ 1.Product
- ▶ 2.Place
- ▶ 3.Price
- ▶ 4.Promotion
- ▶ 5.Packaging

Packaging Importance

For Retailer

- ▶ Display for sell
- ▶ Shelf replenishment
- ▶ Product visibility
- ▶ Product payment
- ▶ Vending machine

Packaging Importance

For Environment

- ▶ Reduce product waste
- ▶ Reduce waste by light weighting
- ▶ Save energy and resources by using
- ▶ recycled packaging (recycling creates job)
- ▶ Reduce waste by using biodegradable material

The more population, the more waste

THE WORLD THROWS AWAY OVER 750 MILLION TONS OF GARBAGE EACH YEAR, AND NOT ALL OF IT ENDS UP WHERE YOU THINK.

Packaging waste is only 30 % of total waste..but it creates negative perception

In developing countries 30 % food waste due to poor packaging



Global food waster per year

Packaging Industry by Material Type



Glass



Metal



Paper



Flexibles



Rigid Plastic

Produce are repack at wholesale market

- ▶ For wholesale (10kg., 20kg., full truck)
- ▶ For individual sale (1 or 2 kg.)
- ▶ For supermarket

Packaging
-Plastic bag
-Plastic net
-Plastic basket



Vegetable market

- ▶ Customers are buying produce in market.
- ▶ Small food restaurants buy produce in market.

Packaging

- Plastic bag
- Plastic basket
- Round bamboo basket



Vegetable market

- ▶ HDPE and LDPE plastic is popular.
- ▶ Transparent and tough enough.
- ▶ Plastic is not decompose and create garbage.

Packaging

- Plastic bag
- Plastic basket
- Round bamboo basket



Natural bamboo basket

- ▶ Bamboo baskets are also used as packaging.
- ▶ For wholesale market.



Fruit market

- Packaging
- Plastic bag
 - Round plastic basket
 - news paper



- ▶ Fast moving product



Fruit market

- ▶ Returnable packaging
- ▶ Need deposit money and return money back after return packages.

Packaging

- Plastic bag
- Round plastic basket
- Round bamboo basket
- news paper



Flower market

- ▶ Flower wrapping with Paper are popular.
- ▶ It's good for environment.



Department store

- ▶ Organic veg is very popular for urban people.
- ▶ Higher price compare with normal veg.
- ▶ Need certification for making sure that real organic.

Packaging
-Plastic bag
-Plastic tray



Export packaging

- ▶ Mango, Durian, Coconut, pineapple are popular
- ▶ Foam for cushioning.

Packaging
-Paper box
-Foam



Plastic Packaging Waste & Environment



Q&A

