

Global Trends in Tropical Fruit Production and Trade

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International Tropical Fruit Network



INTERNATIONAL TROPICAL FRUITS NETWORK

Content

- Production trends of major tropical fruits
- Export of tropical fruits
- Import of tropical fruits
- Tropical fruit value chain
- Conclusion - challenges



INTERNATIONAL TROPICAL FRUITS NETWORK

Production trends of major tropical fruits (2008)

Major Fruits Produced in the World (tonnes):
Avocados, Bananas, Mangoes, Papayas, Pineapples

Fruits	2000	2001	2002	2003	2004	2005	2006	2007	2008
Avocados	2,688,053	2,842,755	2,987,257	3,195,636	3,205,488	3,413,984	3,585,358	3,591,989	3,532,011
Bananas	65,109,146	66,835,510	68,007,075	70,470,820	75,680,849	78,861,753	84,320,784	89,099,503	90,705,922
Mangoes	24,913,043	25,143,748	26,271,041	29,359,957	29,087,337	31,251,420	32,995,171	33,866,557	34,343,083
Papayas	6,954,812	8,207,372	8,089,108	7,930,846	8,594,281	8,066,114	8,913,064	9,210,748	9,095,875
Pineapples	15,098,078	15,697,460	15,800,498	16,091,486	16,667,677	17,813,831	19,498,103	21,008,795	19,166,560

Data Source: FAOSTAT

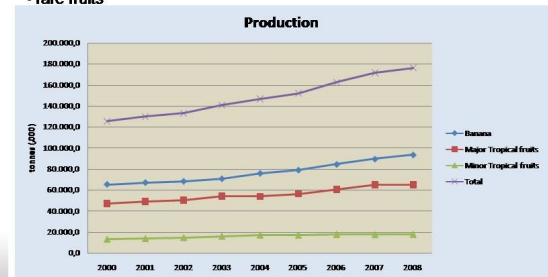


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Production trends of major tropical fruits

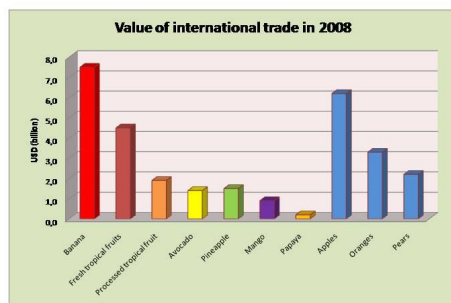
2008 estimations

- banana – 90.7 million tonnes
- major tropical fruits – 66.4 million tonnes
- minor tropical fruits – 18.0 million tonnes
- underutilized fruits
- rare fruits



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Comparison on trade value (2008)



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Production trends of major tropical fruits (2008)

Major Fruits Produced in the World (tonnes):

- Bananas,
- Mangoes, Papayas, Pineapples Avocados,

- World production estimated 82.7 million tonnes in 2008 (82.1 million in 2007)
- Mango – 40 %, Pineapple – 25 %, Papaya – 4 %, Avocado – 4 %
- Asia largest producer, followed by Latin America and the Caribbean, Africa and Oceania
- 2008 Asia largest producer of mango – 74 %, Latin America / Caribbean – 16 %, Africa – 10 %
- Pineapple, Asia – 49 % of production, Latin America / Caribbean – 38 %, and Africa – 12 %
- Papaya – Asia – 45 %, Latin America / Caribbean – 39 %, Africa – 16 %
- Avocado – Latin America / Caribbean – 68 % Asia – 12.3 %, Africa – 12 %, Oceania – 12.3 %

Data Source: FAOSTAT



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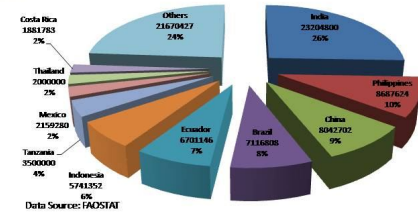


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Production trends of major tropical fruits (2008)



Major Banana Producers:
India, Philippines, China, Ecuador, Brazil, Indonesia
Banana Production 2008 = 90,705,922 tonnes



Data Source: FAOSTAT

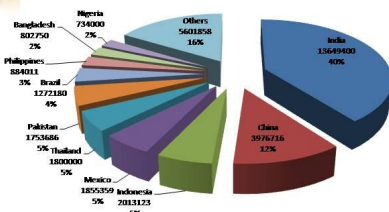


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Production trends of major tropical fruits (2008)



Major Mango Producers:
India, China, Indonesia, Mexico, Thailand, Pakistan
Mango Production 2009 = 35,035,641 tonnes



Data Source: FAOSTAT

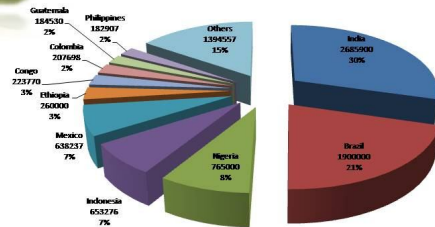


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Production trends of major tropical fruits (2008)



Major Papaya Producers:
Indonesia, Thailand, Colombia, Philippines, Peru
Papaya Production 2009 = 10,213,069 tonnes



Data Source: FAOSTAT

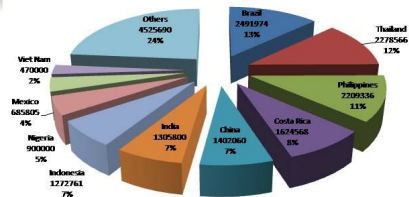


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Production trends of major tropical fruits (2008)



Major Pineapple Producers:
Philippines, Thailand, Costa Rica, Indonesia, Brazil
Pineapple Production 2009 = 18,448,674 tonnes



Data Source: FAOSTAT

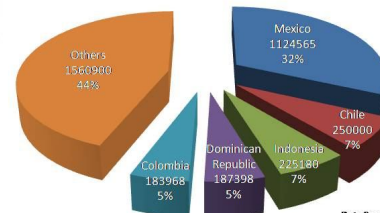


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Production trends of major tropical fruits (2008)



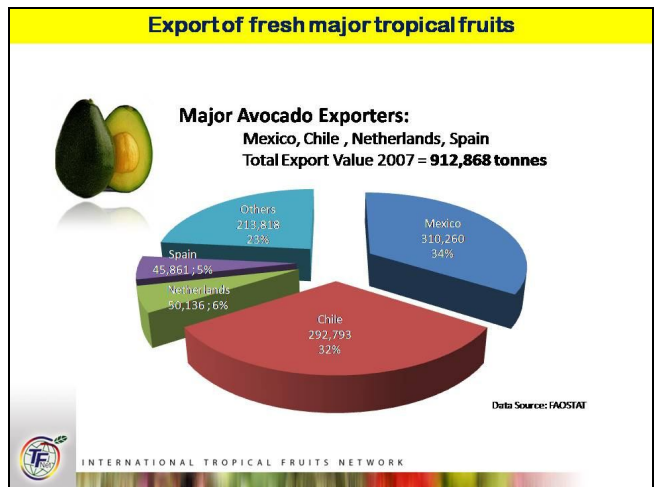
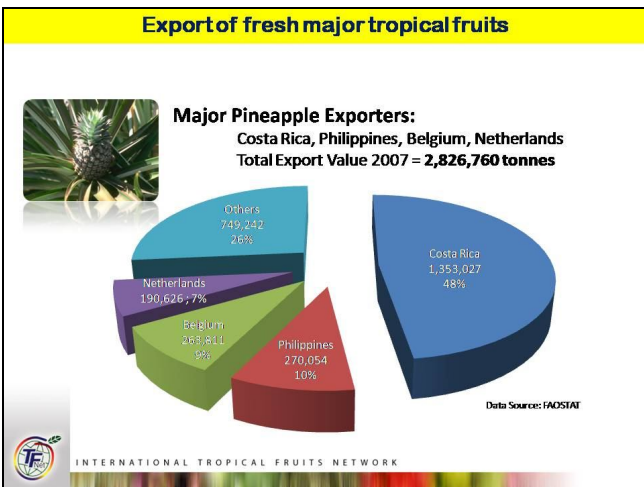
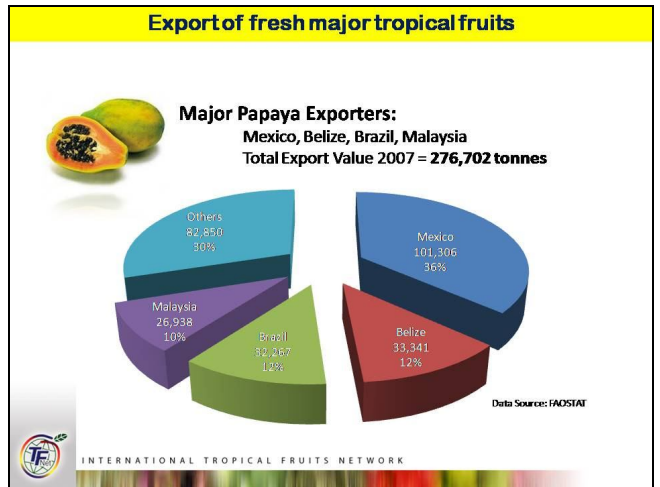
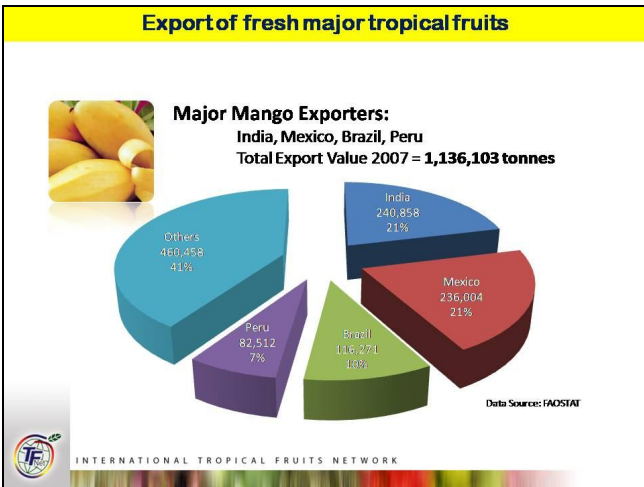
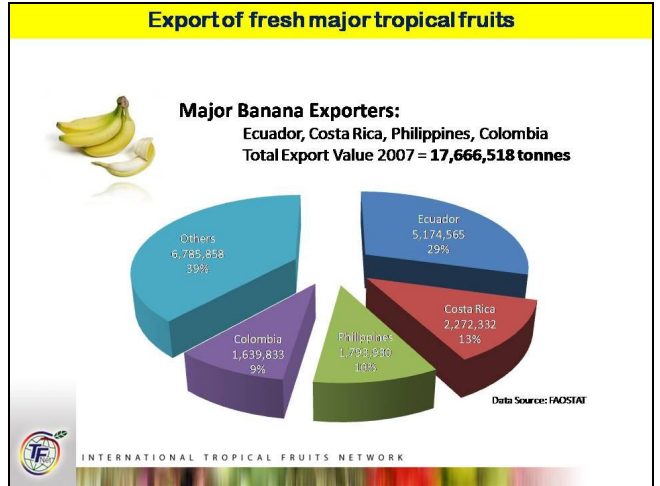
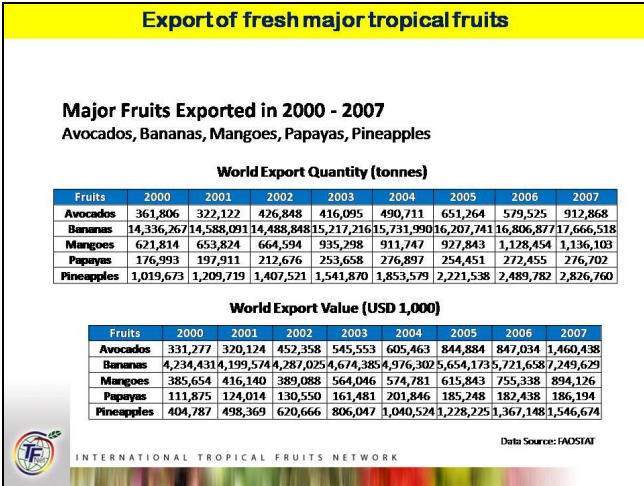
Major Avocado Producers:
Mexico, Chile, Indonesia, Dominican Rep., Colombia
Avocado Production 2008 = 3,532,011 tonnes



Data Source: FAOSTAT



INTERNATIONAL TROPICAL FRUITS NETWORK



Import of fresh major tropical fruits

Major Fruits Imported in 2000 - 2007 Avocados, Bananas, Mangoes, Papayas, Pineapples

World Import Quantity (tonnes)

Fruits	2000	2001	2002	2003	2004	2005	2006	2007
Avocados	346,359	323,649	406,555	432,298	492,727	665,424	614,005	779,479
Bananas	14,436,949	13,641,745	13,902,466	14,690,879	15,080,530	15,226,569	15,931,043	16,029,175
Mangoes	621,810	637,033	685,188	804,079	799,651	754,499	850,499	901,218
Papayas	160,403	185,586	197,883	234,300	265,230	254,046	263,295	258,578
Pineapples	1,051,520	1,152,603	1,315,832	1,462,465	1,708,146	1,962,308	2,293,153	2,495,569

World Import Value (USD 1,000)

Fruits	2000	2001	2002	2003	2004	2005	2006	2007
Avocados	413,685	416,953	470,972	678,575	706,322	958,500	941,708	1,330,633
Bananas	6,096,191	5,889,722	5,852,153	7,046,825	7,858,257	8,324,287	8,515,638	9,426,787
Mangoes	513,032	543,049	520,032	693,192	668,632	750,666	864,321	1,025,527
Papayas	139,894	155,077	164,576	193,946	232,768	216,167	214,824	223,518
Pineapples	628,153	720,341	870,671	1,168,949	1,365,925	1,462,380	1,811,223	2,055,161

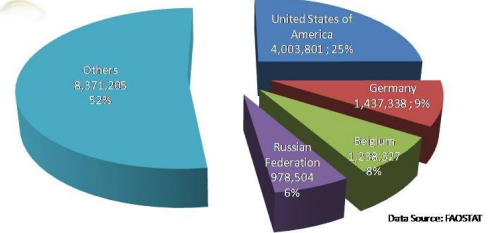


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Data Source: FAOSTAT

Import of fresh major tropical fruits

Major Banana Importers: USA, Germany, Belgium, Russian Federation Total Import Value 2007 = 16,029,175 tonnes



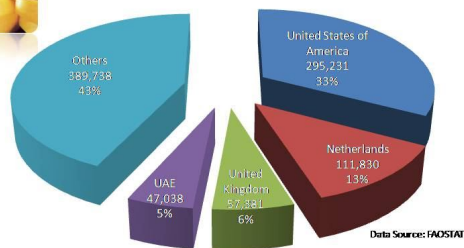
Data Source: FAOSTAT



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Import of fresh major tropical fruits

Major Mango Importers: USA, Netherlands, United Kingdom, UAE Total Import Value 2007 = 901,218 tonnes



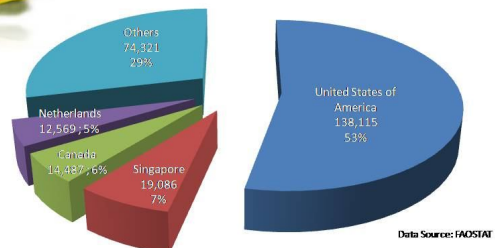
Data Source: FAOSTAT



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Import of fresh major tropical fruits

Major Papaya Importers: USA, Singapore, Canada, Netherlands Total Import Value 2007 = 258,578 tonnes



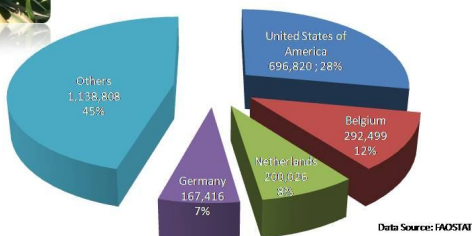
Data Source: FAOSTAT



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Import of fresh major tropical fruits

Major Pineapple Importers: USA, Belgium, Netherlands, Germany Total Import Value 2007 = 2,495,569 tonnes



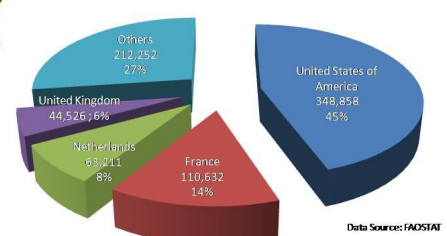
Data Source: FAOSTAT



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Import of fresh major tropical fruits

Major Avocado Importers: USA, France, Netherlands, United Kingdom Total Import Value 2007 = 779,479 tonnes



Data Source: FAOSTAT



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Export of processed tropical fruit products

World Export Quantity (tonnes)

Products	2000	2001	2002	2003	2004	2005	2006	2007
Citrus juice, concentrated	48,337	46,293	65,634	78,446	79,109	80,419	66,884	85,156
Citrus juice, single strength	167,276	157,810	58,532	50,654	57,589	79,410	95,105	120,552
Grape Juice	522,722	552,649	588,922	617,681	661,180	712,407	748,871	875,991
Grapefruit juice, concentrated	196,391	185,225	168,509	227,554	237,486	150,121	151,447	158,422
Juice of Grapefruit	163,884	179,449	193,440	169,840	176,476	124,579	181,036	176,068
Juice of Pineapples	376,678	406,006	347,885	445,493	445,555	384,629	263,274	299,692
Lemon juice, concentrated	16,876	12,263	51,226	47,010	55,953	62,105	64,157	60,814
Lemon juice, single strength	29,478	31,230	29,887	24,650	24,076	25,585	30,030	35,704
Pineapple Juice Conc	27,562	27,796	62,847	246,056	93,304	248,738	439,584	352,832
Pineapples Cand	1,074,047	1,078,279	1,012,110	1,118,113	1,148,796	1,255,885	1,286,911	1,172,978

Data Source: FAOSTAT



INTERNATIONAL TROPICAL FRUITS NETWORK

Export of processed tropical fruit products

World Export Value (USD 1,000)

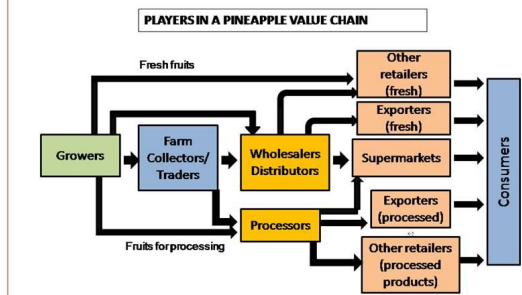
Products	2000	2001	2002	2003	2004	2005	2006	2007
Citrus juice, concentrated	39,491	32,597	62,110	85,431	84,186	91,612	83,449	119,364
Citrus juice, single strength	121,324	127,242	54,942	47,448	50,931	78,784	76,123	85,869
Grape Juice	352,579	324,621	340,033	405,429	498,465	535,704	584,512	819,562
Grapefruit juice, concentrated	126,198	104,742	96,465	148,342	148,873	148,215	235,203	196,461
Juice of Grapefruit	132,018	137,843	152,149	123,532	131,632	95,613	182,118	146,894
Juice of Pineapples	207,691	227,426	241,288	365,807	367,962	329,600	197,527	236,763
Lemon juice, concentrated	13,612	10,168	48,178	43,018	52,488	42,730	50,765	67,261
Lemon juice, single strength	33,531	36,462	31,287	32,451	33,370	30,200	39,399	48,890
Pineapple Juice Conc	17,083	17,977	49,763	120,581	90,232	163,304	295,049	257,620
Pineapples Cand	516,540	525,277	575,630	658,978	701,194	814,858	841,177	870,297

Data Source: FAOSTAT



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Challenge in developing the tropical fruit industry



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Market and value chain analysis

AVERAGE RETAIL TO FARM GATE RATIO OF MANGO

Country	Farm gate price (USD)	Wholesale price (USD)	Retail price (USD)	Retail to farm gate ratio
India	0.17	Na	0.43	2.52
Philippines	0.33	0.84	1.26	3.81
Indonesia	0.26	0.52	0.83	3.19

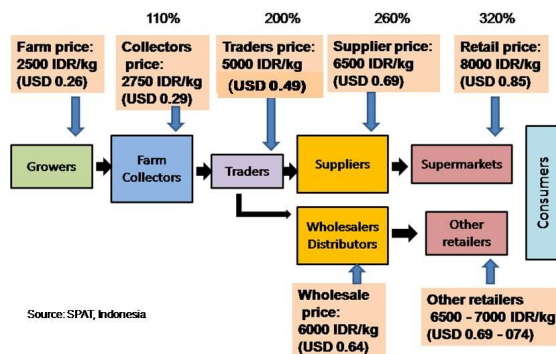
Source: Dr. SK Mitra (India), Dr. A.P. Aquino (Philippines)
SPAT (Indonesia)



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Market and value chain analysis

Retail to farm-gate price ratio on mangoes (peak season) - Indonesia



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Value chain enhancement



Farmers' group supply direct to Supermarkets - Lumajang, East Java, Indonesia



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Value chain enhancements



INTERNATIONAL TROPICAL FRUITS NETWORK Farmers' cooperative supply direct to Supermarkets – Thailand

Market access – European market



Wholesale market in Cologne, Germany INTERNATIONAL TROPICAL FRUITS NETWORK

Market access – European market



Pineapples in supermarket, Germany



Peruvian mangoes – fresh market, Germany



Pineapples in fresh market, Rome



banana, papaya and pineapple, fresh market, Germany



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Market and Quality Assurance



Aor To Kor Quality Market, Bangkok



Benh Thahn market, Ho Chi Minh



Aor To Kor Quality Market, Bangkok



Mangoes – Jakarta exhibition



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Market access – China (Jiangnan Fruit Trade Area, G'zhou)



Local jackfruit and papaya



Papaya from Hainan



Small quantities of rambutan



Durian from Thailand



INTERNATIONAL TROPICAL FRUITS NETWORK

Market access – China (Jiangnan Fruit Trade Area, G'zhou)



Banana from Thailand



Mangosteen from Thailand



Local guava



Local pineapple var 'queen'



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Conclusion: challenges in developing the tropical fruit industry



THANK YOU



INTERNATIONAL TROPICAL FRUITS NETWORK

Implementation of IndoGAP – Increasing the Competitiveness of Indonesia Tropical Fruits

DR. Winny Dian Wibawa

Director of Fruit Crops
Ministry of Agriculture
2010

Background



GLOBAL MARKET

- Growth of Tropical Fruit share in total fruit trade : 20% in year 2000 → 36% year 2007
- Consumer awareness (quality assurance system)
- Higher standard requirements
 - Quality and safety issues
 - Environmental issues
 - Workers safety, health and welfare issues

DOMESTIC MARKET

- Import of horticulture (fruit & vegetables)
- Growth of convenience stores/supermarket
- Peoples' welfare

COMMITMENT TO IMPROVE PRODUCT COMPETITIVENESS Indonesia Good Agricultural Practices (Indo-GAP)

- Initiated in 2005, covered only fruits
- Legal aspect : Ministry of Agriculture Decree on GAP No. 61/2006
- Since 2009 covered fruits and vegetables
- Legal Aspects : Ministry of agriculture Decree on GAP No. 48/2009

OBJECTIVES

- General reference of good fruit & vegetables cultivation
- High productivity, good quality, and optimum benefit
- Environmentally friendly, considering farmers' safety and prosperity as well as sustainable farming



SCOPE

(INDO GAP) continue

1. Criteria
2. Registration & Certification
3. Land
4. Seed and Plant Variety
5. Planting
6. Fertilization
7. Plant Protection
8. Irrigation
9. Harvest
10. Post Harvest Handling

11. Tools and machineries
12. Environmental Preservation
13. Labors
14. Hygienic Facilities
15. Farmer's health and welfare
16. Disposal place
17. Monitoring, Documentation and Traceability
18. Complaint
19. Internal evaluation
20. Closing statement

14 CRITICAL CONTROL POINTS (MAJOR MUST)



1. Land free from hazardous contaminants
2. Land slope <30% for vegetables and seasonal fruit.
3. Soil / medium is free from hazardous contaminants and poisonous materials
4. Land conservation activity is implemented on the steep slope
5. Nightsoil is prohibited for fertilizer.
6. Fertilizer is stored separately to agricultural products.
7. Farmers are able to explain the way and reason of application of pesticides

14 Major Must CCPs continue

8. Pesticide that used is not expired
9. Pesticide is stored separately to agricultural products
10. Irrigation water is free from hazardous contaminant
11. Harvesting container is in a good condition, clean and free from contamination
12. Clean water is used for washing the harvested product
13. Package is labeled that contain information to indicates the products
14. Packaging area is separated to fertilizer and pesticides storage

Comparison of Indo GAP and ASEAN GAP

- ◉ Grouped into four modules :
 - Food Safety
 - Environmental Management
 - Worker health, safety and wefare
 - Produce Quality
- ◉ 226 control points
- ◉ More detail
- Grouped into tree levels:
 - Prima 1 → Food Safety
 - Prima 2 → Food Safety and Product Quality
 - Prima 3 → Food Safety, product quality and environmental management
(Worker health, safety and wefare are integrated in every activities)
- 100 control points
- Less detail but covers all of the points in ASEAN GAP

Current alignment of national GAP programs with ASEAN GAP

Country	Food safety	Environmental management	Worker's health, safety and welfare	Produce quality
Thailand	C	P	P	C
Malaysia	C	P	P	S
Indonesia	C	C	P	P
Singapore	C	N	N	S
Philippines	C	N	P	S
Brunei Daruslam	C	N	N	N

T = Total alignment C = close alignment P = partial alignment
 N = no alignment S = covered by another national standard

Audited by Independent Auditor from GLOBAL GAP (17 checklists)

1. General
2. Storage and fertilizers
3. Plant protection
4. Packing house
5. Packing and storage areas
6. Packing
7. Principals of hygiene
8. Rodent and bird control
9. Glass procedure/lamp
10. Sanitizing
11. Sanitary facilities (in storage room)
12. Harcesting equipment
13. Intern transport
14. Waste and Pollution
15. Patches
16. Sanitary facilities (out in the field for harvesting)
17. Washing after harvesting

TOOLS for ASSESING IndoGAP



Checklist



Guidance for Farm Registration



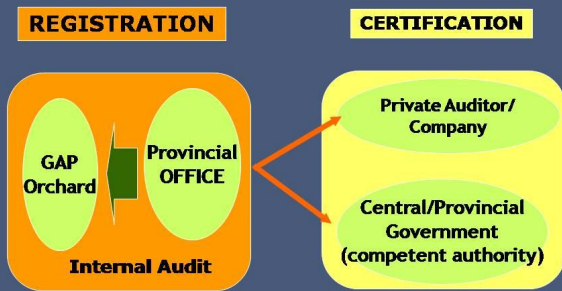
Guidance for On line registration

STANDARD OPERATING PROCEDURE

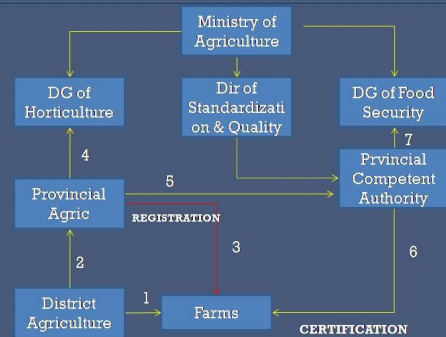


Specific Commodity, Specific Location, Specific Market

Farm Registration prepared for certification



Mechanism of GAP Implementation

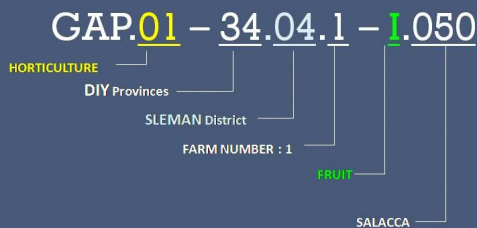


Registration Number of GAP Farm

GAP.01 – Prov. District. 1 – I.001

Segment 1 Segment 2 Segment 3

Example of Farm Number



Challenge of GAP Implementation

- Small scale & Individual farms
- Scattered
- Unstructured Supply Chain (established traditional supply chain)
- Low technology inputs
- Unorganized /less organized farmers
- Lack of database of production

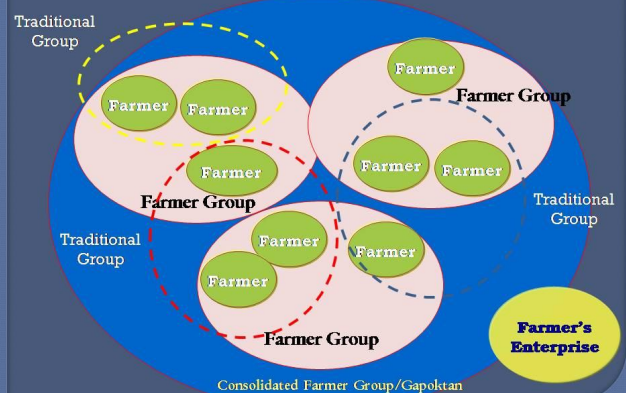


- Reliable supply chain (predicted harvest, correct type (variety), amount, quality, continuity, price, size, safety)
- Traceable → **TRUST**

Strategy of Implementation

- Focus on main production centers (community orchards)
- Empowerment of farmer groups (1)
 - Technology transfer & implementation
- Intensive guidance (involving "champion")
- Improvement of supply chain (empowerment of traditional supply chain)
- Strengthening Farmer institutions
 - Commodity Association
 - Consolidated farmer groups
- Involvement of private sectors (retailers/exporters)
 - Partnerships
- Involvement of researchers/academic
- Development of Commodity Consortium

ILLUSTRATION OF FARMER INSTITUTION



GAP REGISTERED FRUITS FARMS

No.	Provinces	No. Of Farms	No. Of Commodity	No.	Provinces	No. Of Farms	No. Of Commodity
1.	Central Java	2,388	5	8.	South Kalimantan	48	1
2.	Yogyakarta	1,071	1	9.	West Kalimantan	24	1
3.	East Java	273	7	10.	North East Nusatenggara	16	4
4.	West Java	549	10	12.	South Sulawesi	6	4
5.	S. Sumatra	132	6	13.	Lampung	26	2
6.	W. Sumatra	112	10	14.	Bali	15	3
7.	N. Sulawesi	50	1	15.	Jambi	16	1
8.	Bengkulu	12	2				

- Total GAP Registered farms 4.788 farms, 21 commodities
15 Provinces, 74 Districts.

- Published : 229 SOP Fruits, 24 Commodities
21 Provinces, 141 Districts

Impact of GAP Implementation

- ⊙ Better domestic market appreciation (modern market)
- ⊙ Open access to international market



MARKET DESTINATIONS

EXPORT

- ⊙ Mangoes :
 - Hong Kong, Singapore, Brunei, China, France, Germany, South Korea, Malaysia, Taiwan, Middle East
- ⊙ Mangosteen :
 - China, Hong Kong, Singapore, Malaysia, India, Middle East
- ⊙ Salacca : China, Malaysia, Singapore
- ⊙ Pineapple : South Korea, Iran, Middle East

DOMESTIC : - Convenience Stores
- Supermarket
- Fruit Specialty Stores

CONCLUSION

- ⊙ Implementation of GAP requires :
 - price incentives (export/modern market)
 - Intensive guidance
- ⊙ GAP implementation closely related with "other factors" (institution, supply chain & market)



Smallholder organizations, quality improvement and credit availability to enhance smallholder contribution to value addition along the tropical fruits value chain - Philippine experience

**LORNA E. HERRADURA, Ph.D
BPI, Philippines**



Philippines

- Suitable climate and fertile soil to grow a wide variety of agricultural products
- Abundance of a variety of Philippine tropical fruits for processing
- Market leader in canned pineapple and juice

Source : http://www.boi.gov.ph/image/tropical_fruit_purees_&_juices.pdf

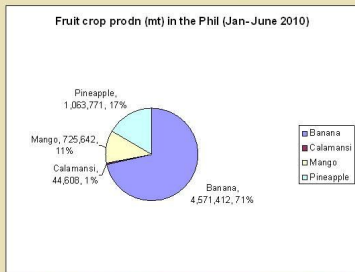


Major fruits in the Philippines:

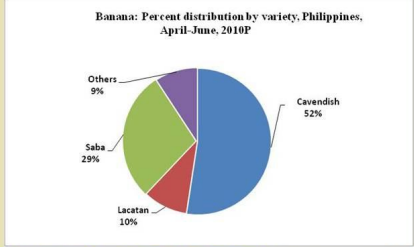
- Predominantly grown in large commercial plantations:
 - Banana
 - Pineapple
- Predominantly grown in small farms:
 - Calamansi
 - Mango



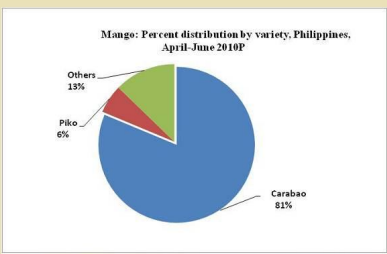
Volume of Production of Major Fruits in the Phil.



Banana: Percent distribution by variety, Philippines, April-June, 2010P



Mango: Percent distribution by variety, Philippines, April-June 2010P



- Food manufacturing
 - food and beverage processing
 - most dominant industry in Philippine manufacturing (40% of total output)
- Significant increase in demand for processed fruits
 - changes in today's lifestyle
 - growing concern on health and healthy food products
 - dietary preference
 - improvement in socio-economic status

▪ Companies of mango processors:

- Single proprietors (common among micro, cottage and small industries)
 - Luzon - 17
 - Visayas - 11
 - Mindanao - 4
- Large local companies
 - San Miguel Corporation
 - RFM Corporation
 - Universal Robina Corporation

Source : http://www.boi.gov.ph/image/tropical_fruit_purees_&_juices.pdf

Philippine tropical fruits used for processing:

- Banana
- Pineapple
- Mango
- Calamansi
- Papaya
- Guava
- Guyabano
- Mandarin
- Pummelo
- Durian



Value adding of tropical fruits:

- Juice/ purees - banana, pineapple, mango, calamansi (lime), papaya, guava, soursop (guyabano) and mandarin
- Jams
- Marmalades
- Pastilles
- Wines
- Dried fruits
- Flour and powder (banana)
- Alcohol or beer (banana)



Processed mango- one of the country's export winners

- Carabao variety - usually used for processing
- mango puree
- juice
- dried mangoes
- concentrates
- frozen mangoes
- glaze
- edible parts
- mango in brine
- mango preserves



Processed mango

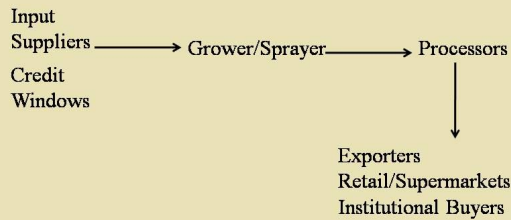
- global demand has been increasing
 - juice concentrates, dried mangoes, mango puree
- dried mangoes - accounted for 84% of total export value of dried fruits

Production - 47,232 mt/yr

- export - 13%
- domestic market - 87%



Philippine Processed Mango Industry Supply Chain



Source: Digal and Concepcion, 2004

Formation of smallholder organizations:

- industry clustering of the Department of Trade and Industry
- agribusiness enterprise support program of the Department of Agriculture
 - encouraged the formation of industry associations and cooperatives
 - for institutional development and capacity building

Councils

e.g. Regional industry development councils of major commodities

- Regional Mango Industry Development Council
- Philippine Mango Development Council
 - mango is one of the priority crops under the High Value Crops Law
 - supported by the major programs (MAKAMASA) of the Department of Agriculture

Associations, Cooperatives, Confederation, Foundation

- private - led

- to address industry concerns
- lobby for government action or intervention and assistance
- meet volume requirements and negotiate for prices
- Mango Producers Exporters Association and the other mango cooperatives
- Mango Producers and Exporters Confederation (MPEC)

Associations, Cooperatives, Confederation, Foundation

- Mango Industry Foundation Inc.
- Philippine Food Processors and Exporters Organization, Inc.
 - planning, development and sourcing of raw materials, improvement of manufacturing efficiency and productivity, promotion of sound trade practices
- Philippine Exporters Confederation Inc.
 - mandated to strengthen the country's export industry through promotion and development programs

Source: Digal and Concepcion, 2004

Options for quality improvement

- Technical assistance/market and R&D support, congresses and symposia
- Preparation of IEC (information, education and communication) materials on production, post harvest and hot water treatment (HWT) at the exporters' and traders' level



Government institutions

- Department of Agriculture
 - Bureau of Agricultural Research (BAR)
 - The National Technology Commercialization Program (NTCP) e.g. fruit wines
 - Bureau of Plant Industry (BPI) and Agricultural Training Institute (ATI)
 - capacity building programs for good agricultural practice (GAP)



Government institutions

- Department of Science and Technology (DOST)
 - Industrial Technology and Development Institute (ITDI)
 - Small enterprise technology upgrading program (SET-UP) – provision of technology
- technology needs assessment, innovation systems support, manpower training, consultancy and technical advisory services, product standards and testing, packaging and labeling, database management and info system, linkages and networking
- provision of Food Safety Trainings such as Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Points (HACCP)



Government institutions

- PCARRD - Mango Information Network (MIN)
 - provision of information relevant to mango production (production, prices, government policies)
 - technomarts through regional consortiums
- State Colleges and Universities – provision of info
- Special government programs –USAID program (GEM2)



Setting up of product grades and standards

- facilitate disposal for trading

▪ Bureau of Product Standards (BPS)

- dried mangoes -
 - grading
 - sulfur dioxide residue
 - moisture content
 - packaging
 - labeling
- mango puree -
 - grading
 - general requirements (total soluble solids, titrable acidity and microbial count)
 - sampling
 - methods of analysis
 - labeling



Processors - follow buyer standards
- ensure acceptability in the export market

- US - no sugar, artificial preservatives and food coloring
- Germany and Netherlands- sulfite levels less than 500 ppm
- Japan - sulfite levels not more than 5 ppm



- Small irrigation facilities by local govt units (LGU) and special projects (e.g. MRDP)
- Address issues on logistics
 - Shipping through roll on-roll off (RORO) technology
 - improves inter-island shipment
 - lessen transport cost and fruit quality deterioration
 - Direct farm- to- market linkage (DPWH)

Source: Digal and Concepcion, 2004; Brown et. al., 2006, Socio-Economics SOA and AB Series No. 8/2008.

Options for credit availability

- credit facilities and windows

Agricultural Credit Policy Council (ACPC) – Innovative Financing Scheme (IFS) Special Agricultural Financing Window

- tasked by DA to review all credit facilities available to growers, processors and exporters
- tasked to create a policy environment that will encourage more participation of formal banking institutions in lending to the agriculture sector

Usual partners:

- DA- Quedan and Rural Credit Guarantee Corporation (Quedancor) and other specialized government banks
- Self reliant team (SRT) program
 - Collateral-free credit scheme grounded on strong credit values
 - Harnessed by continuing training and skills development program

Self reliant team (SRT) program

- Composed of 3-15 members residing in the same barangay and involved in the same project
- Finance the working capital or production requirements of farmers, fisherfolks and “agripreneurs”
- Loan can be production activities, processing, packaging, manufacturing etc.
- P 50,000 loan /member payable within 3 yrs

Usual partners:

- Development Bank of the Philippines (DBP)
 - High Value Commercial Crops
- Land Bank of the Philippines (LBP)
 - Todo Unlad Program and its Cooperative
- Export Credit and Guarantee Facility for exporters
 - one of the non bank financial intermediaries

Informal lenders

- Input suppliers
 - provide inputs for the farmer and purchase the mangoes through contract buying
- Contract growing
 - agriculture-based company transfers farm production technology to local independent farmers or farmer’s groups

Source: Digal and Concepcion, 2004; Digal 2005



MARAMING SALAMAT PO



Minimizing Post Harvest Losses and Enhancing Farmers Role in the Value Chain of Tropical Fruits

International Tropical Fruits Network Workshop
Bandung, October 27 - 28, 2010

"Helping Indonesia to Grow"

Market Opportunity

- Super markets have grown at a rate of over 20% a year for the past ten years
- Shift in big cities from only buying produce at small wet markets to supermarkets or a combination of both
- Requirements in the cities have increased dramatically with urbanization. Consumers require a wider range of choices and quality
- Imported fruit makes up approximately 80% percent of all fruit sold in supermarkets



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Constraints

Demand:

- ❑ Taste and Preferences toward high quality fruits – but with premium price
- ❑ Low purchasing power – only cities and urban dwellings
- ❑ Income growing – demand growing
- ❑ Wet markets are not dynamic



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Constraints (cont'd)

Supply:

- ❑ **Pre-Harvest (Production practices)**
 - Difficulty in accessing inputs such as high quality seeds
 - Disaggregated fruit production of old varieties –small farm size
 - Excessive use of pesticide hence residue
 - Improper farm management and GAP
- ❑ **Harvest**
 - Harvesting at improper maturity and time
 - Harvesting methods: free from breaks, bruises, spots, rot, decay
- ❑ **Post harvest**
 - Lack of packaging and storage facilities
 - Pre-cooling; Cooling; Cold chain
 - Rough handling of produce throughout the value chain – poor transportation
- ❑ **Institutional**
 - Lack of market information and marketing options at the farm gate
 - Limited working relationship between farmers and buyers – weak bargaining power
 - Non-conducive agribusiness climate: Policy issues



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AMARTA's Strategy

Market driven project – identifying major distributors and commodities along the axis from Bali to Lampung and also include the north Sumatra, Medan – Berastagi) area. Covers three major ports (Surabaya, Jakarta, Medan) and major demand centers. Alternatives are:

- 1) Bananas in east Java, which will affect 800 farmers.
- 2) Citrus in Bali, which will affect several hundred farmers.
- 3) Mangos in Bali, which will affect 800 farmers.
- 4) Pineapples in west Java, which will affect several hundred farmers.
- 5) Bananas in north Sumatra, which will affect 1,400 farmers.
- 6) Citrus in north Sumatra, which could affect several thousand farmers.
- 7) Pineapples in north Sumatra, which will affect several hundred farmers.

AMARTA decided to do Banana and Citrus in North Sumatra; Strawberry and Pineapple MD2 in West Java.

Distributors : Sewu Segar Nusantara, Mulia Raya, Horti Jaya, Masari Multifruit, Bali Mangosteen Shipper, Lotus Distribution



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AMARTA's Areas of Interventions

I. Farmers Role: Pre-harvest and Harvest

- ❑ **Facilitate improvements in production**
 - Provide planting material (tissue culture)
 - Provide extension materials and information for GAP and SOP and effective substitutes for prominent commercial pesticides
 - Introduce new technology: *double row for banana; SOP for citrus*
 - Provide technical assistance to key producers
- ❑ **Introduce proper harvesting technique**



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II. Farmers and Distributors Role: *Post Harvest Handling and Linkage to Market*

- ❑ Provide technical assistance and technology interventions to intermediaries
- ❑ Facilitate investment in packing and shipping facilities for high value horticulture
- ❑ Facilitate the availability of inputs for packing materials



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III. Institutional : Establish and engage Regional Agribusiness Competitiveness Alliance (RACA) to Assist with Advocacy Facilitate stimulation of enabling agribusiness environment

- ❑ Established RACA in Both Provinces. Composed of champions stakeholders. In West Java work closely with UNPAD while in North Sumatra with Senators.
- ❑ Activities:
 - ❑ Train alliance members on policy analysis, communication skills, managerial and organization skills, writing proposals
 - ❑ Policy advocacy with government offices and parliament through hearings and audiences.
 - ❑ Awareness workshops of all stakeholders to exchange discussed views on agribusiness constraints and proposed solution.
 - ❑ Facilitate market penetration
- ❑ Results:
 - ❑ Improve the local wholesale market area of Pasar Barastagi
 - ❑ Improved rural roads
 - ❑ Access to caretour
 - ❑ Collaborating with local trading community and farmers to identify practical ways of making the Merak and Sub Terminal works.



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CASE 1: Banana in Deli Serdang

- ❑ On-farm: *tissue culture planting materials; double row; GAP and SOP; good harvesting technique*
- ❑ Post-harvest: *packing house; storage, collection, sorting, grading facility*
- ❑ Marketing: *collaborate with distributor; arrangement with caretour*
- ❑ Institutional: *150 farmers groups and forming one RACA*



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CASE 2: Citrus in Karo

- ❑ On-farm: *GAP and SOP; good harvesting technique*
- ❑ Post-harvest: *sorting, grading facility*
- ❑ Marketing: *collaborate with distributors to Jakarta, Batam, and Riau*
- ❑ Institutional: *200 farmers groups and forming one RACA*



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CASE 3: Strawberry in West Java

- ❑ On-farm: *Provide planting materials; GAP and SOP; good harvesting technique*
 - ❑ Post-harvest: *packing house; collection, sorting, grading facility; pre-cooling; cold storage in collaboration with Local Agric. Office*
 - ❑ Marketing: *collaborate with high end supermarkets in Bandung area; branding – "red ripe strawberry"*
 - ❑ Institutional: *working with about 11 farmers groups*
- Note : it was a very profitable operation but stop in 2009 because of un-available of seeds*



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CASE 4 : Pineapple – MD2 in West Java

- ❑ On-farm: *Provide planting materials – MD2 variety; GAP and SOP; good harvesting technique*
- ❑ Post-harvest: *packing house; collection, sorting, grading facility; pre-cooling; cold storage in collaboration with Local Agric. Office*
- ❑ Marketing: *collaborate with high end supermarkets in Bandung area*
- ❑ Institutional: *working with about 2 farmers groups; universities; local Gov. office of Agric.*

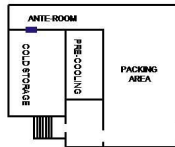


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CASE 5: Work With Local Government Facilitating the Operation of the Merek JTA Facility

Facilitate the expansion and market access for the Citrus and Pineapple industry as well as other fruits and vegetables by developing the Merek JTA packing facility. AMARTA proposes to:

- Provide technical assistance for pack house design
- Provide a grant for development of Cold Storage
- Provide a grant for packing and grading equipment
- Provide technical assistance for citrus and pineapple production packing, processing and marketing.
- Provide technical assistance for development of greenhouse industries for both fruit/vegetables and cut flowers
- Provide a grant for a sample greenhouse operation for production of fruit/vegetables and flowers



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Some Figures: Outcome and Impact

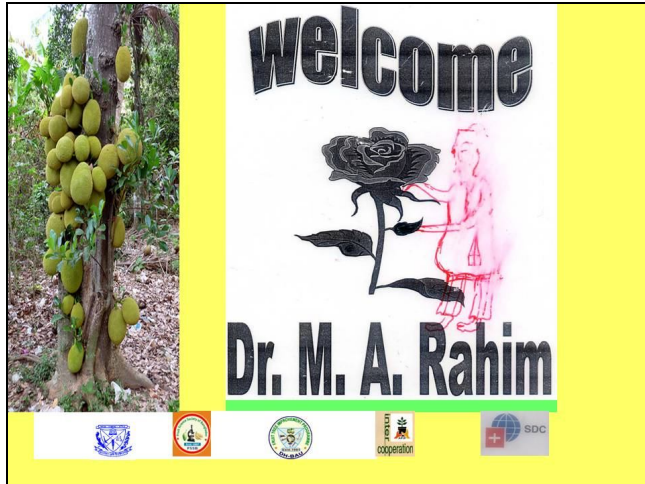
- Improvement in Technology farming and post harvest : 4,152 ha
- Number of active farmer groups : 330
- Increase in produce sold to the market : Banana 87 %, Citrus 60 %
- Number of newly introduced technology: 53
- Number of new private-public partnership formed : 4



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THANK YOU
TERIMAKASIH

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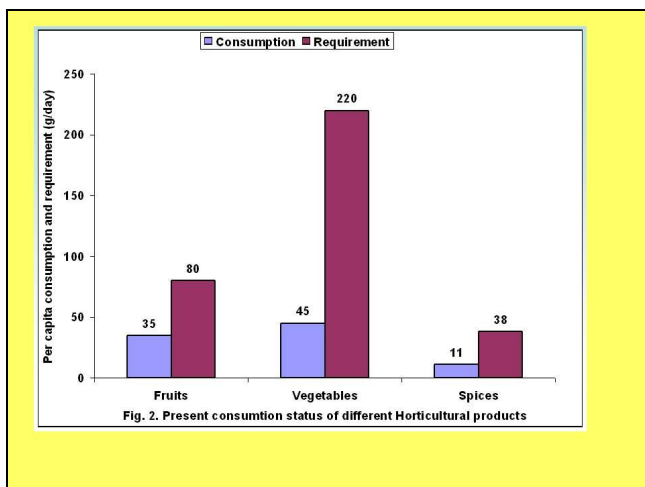
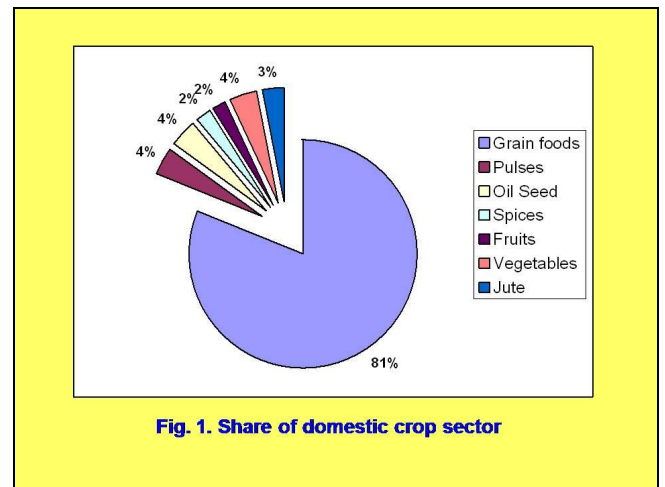
Improving the value chain and linking the market for fruit growers in Bangladesh

M. A. Rahim (marahim1956@yahoo.com), K. S. Islam¹, M. S. Alam², F. Islam³, M. H. Rhaman⁴, N. A. Nahar¹, N. Naher¹, M. A. Hossain³, K. Fatema¹, M. M. Rahman¹

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Bangladesh Agricultural University (BAU)
Mymensingh 2202, Bangladesh
¹ Intercooperation, ²BAU-GPC, ³BARI

Bangladesh

- ↓ Bangladesh is an agricultural country lying between 20°34' to 26°38' N latitude, and 88°01' to 92°41' E longitude
- ↓ It enjoys sub-tropical monsoon climate
- ↓ The country has a total area of 1,47,570 square kilometers with the population of about 140 million
- ↓ Agriculture contributes for 32 percent of its gross domestic product (BBS, 2008).



Major Fruits of Bangladesh

Late Summer

Major quick growing fruits

Minor Fruits of Bangladesh

Baccaurea sapida

Artocarpus lakoocha

Averrhoa carambola

Diospyros discolor

Dillenia indica

Garcinia cowa

Late Summer

Minor fruits

Baccaurea sapida
জুক

Artocarpus lakoocha
ফকি

Averrhoa carambola
কম্বোজ

Diospyros discolor
মবে

Dillenia indica
পম্বা

Garcinia cowa
কলি

Late Summer
মওসম

Minor Fruits

Phyllanthus emblica

Rose apple

Spondias dulcis

Averrhoa bilimbi

Sapota

Flacourtia jangomas

National fruits of Bangladesh

•Nutrition Fruits and nutritional food security

The crucial gap stays: Micronutrients – the 'hidden hunger'

Deficiency in calories + protein	= HUNGER	≥ 0.83 billion underweight 10m in Bangladesh
Deficiency in vitamins & minerals	= MICRONUTRIENT DEFICIENCY	2 – 3.5 billion malnourished 40m in Bangladesh
Excess of calories	= OVERCONSUMPTION	≥ 1.1 billion overweight 10m in Bangladesh

Source: World Watch Paper 158, EBS 2007

Jackfruit-the national fruit of Bangladesh

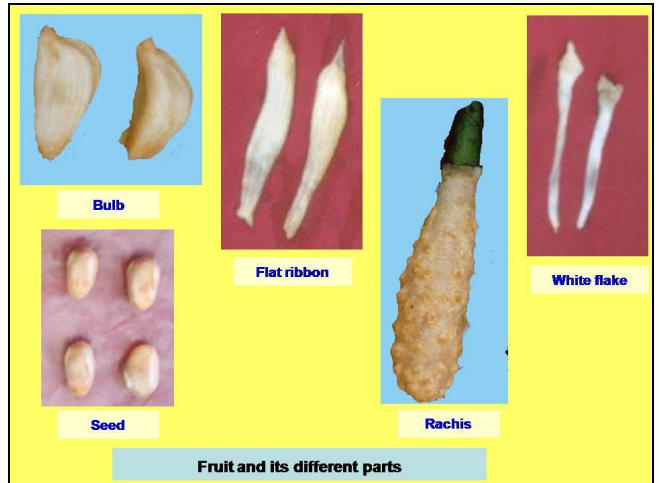


Nutritional status of jackfruits

	Pulp (ripe-fresh)	Seeds (fresh)	Seeds (dried)
Calories	98		
Moisture	72.0-77.2 g	51.6-57.77 g	
Protein	1.3-1.9 g	6.6 g	
Fat	0.1-0.3 g	0.4 g	
Carbohydrates	18.9-25.4 g	38.4 g	
Fiber	1.0-1.1 g	1.5 g	
Ash	0.8-1.0 g	1.25-1.50 g	2.96%
Calcium	22 mg	0.05-0.55 mg	0.13%
Phosphorus	38 mg	0.13-0.23 mg	0.54%
Iron	0.5 mg	0.002-1.2 mg	0.005%
Sodium	2 mg		
Potassium	407 mg		
Vitamin A	540 I.U.		
Thiamine	0.03 mg		
Niacin	4 mg		
Ascorbic Acid	8-10 mg		

Value added products from jackfruits

- Jam
- Jelly
- Pickles
- Leather
- Chips



Products



Papadam



chips



stain for clothes



fresh

Products



jackfruit in water



Product



- Leather



- Leather



- chips

Products



- chips



- bulb in sugar syrup



- bulb in vinegar



- jam

Products



- leather in special pack



Nutrition and Poverty alleviation

- Staple food
- Income generation
- Employment
- Marketing
- Socioeconomic uplift
- Fodder
- Agroforestry



Employment and income generation



Causes of loss

1. Metabolic changes

- ✘ Respiration
 $\text{Sugar} + \text{O}_2 = \text{CO}_2 + \text{H}_2 + \text{Heat}$

- ✘ Ethylene production
 C_2H_4 (Ripening hormone)

2. Mechanical injuries

- ✘ Improper harvesting
- ✘ Bruising during post harvest handling
- ✘ Favours water loss
- ✘ Favours decay

Harvesting is done in two ways



1. Mango fruits are harvested by Hand-picked
2. Mango fruits are plucked with harvester/ Collector



Two Serious Post-harvest Diseases

Anthracnose

Stem end rot

- Hot water treatments of mango at 55°C for 5-10 minutes

Conventional methods used for Hot water Treatment



Stem end Rot



Anthracnose



Mango Packaging



Padi Straw



Bamboo basket



Packaging materials





HORTEX Foundation

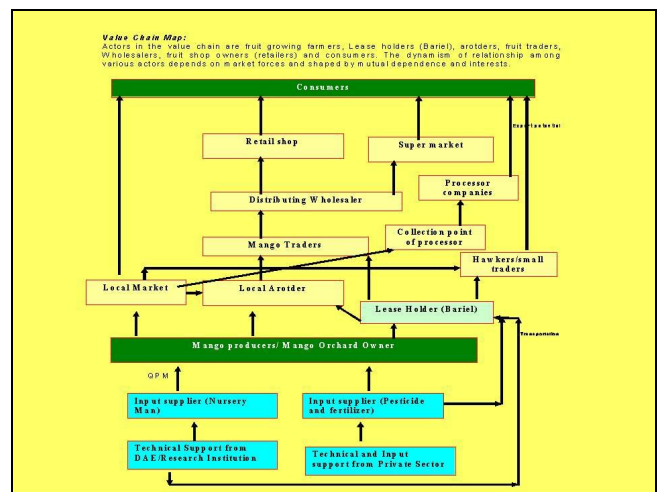
- Horticultural Export Development Foundation, in short Hortex, is registered under Companies Act of 1913 as an Association not for profit, for export development of horticultural crops from Bangladesh.

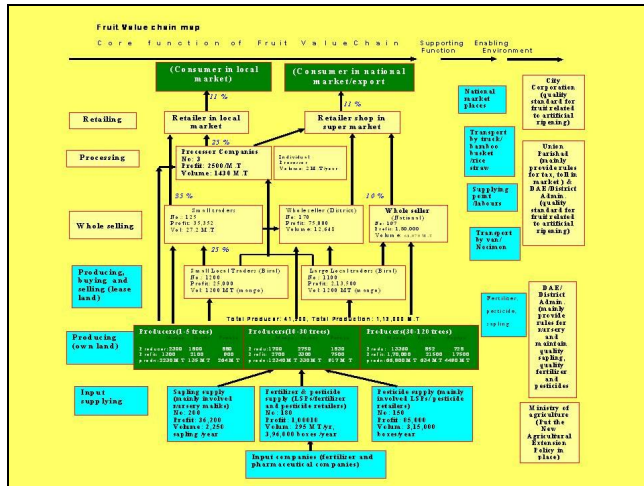
Hortex does not directly get involved in either production or export. It works through the private sector and NGOs and provides them technical assistance and all sorts of support services required. Hortex involves in development, promotion and marketing of exportable horticultural produces, particularly high-value non-traditional crops to high-price non-conventional international markets.

It has developed a model zone for export-oriented fruit production and a variety of other crops for export and assists in marketing of these crops to the upper segment of the EU, Middle East and South East Asian markets and elsewhere.

It has also successfully introduced baby pineapple year-round and undertook development programmes for frozen vegetables, ornamental plants, particularly Chinese palm and orchid cut-flowers for export.

Hortex follows strictly EU and HACCP standards on sowing, irrigation, pest management, harvesting, grading, packaging, transportation and cool chain management all throughout.





SWOT Analysis

Strength	Opportunities
<ul style="list-style-type: none"> Soil and climatic condition are suitable for fruit production Better variety and higher quality of fruits Availability of skilled labor Profit margin is high compare to other crop 	<ul style="list-style-type: none"> High demand of quality and fresh fruit in packaged form, particularly among the urban households Fruit processing that can be a viable industry having export potential Export potential
Weakness	Threats
<ul style="list-style-type: none"> Lack of investment fund Lack of awareness among the farmers on safety use of pesticide Lack of colorful varieties Access to technical knowledge from Government Research Institute 	<ul style="list-style-type: none"> Inadequate and intermittent supply of electricity Import of foreign fruits Higher interest rate Lack of preservation facilities Use of chemical especially carbide

Competitive Advantages:

Processing horticultural products are considered as prospective as potential sub-sector having high demand and substantial level of profit. The sector consists of reasonable number of competitive advantages, which are listed below

- Favorable climate and suitable soil condition exist in greater Rajshahi for production of good quality standard sized mango, jujube and papaya
- Cheap available labor
- Processed food has great market potential
- Excellent road network development and convenient transport facilities with capital city and other region
- Export potential in middle East and Europe
- Profit margin is high compare to other crop

Constraints:

- Inadequate supply of quality planting material leads to low yields and cheated farmers by seeding suppliers.
- Lack of colorful lucrative variety according to demand of export market.
- Lack of regular bearing fruit(mango) leads to less production
- Inadequate knowledge on modern production technique
- Lack of knowledge on post harvest techniques and safety ness leads to damage of fruits.
- Lack of proper knowledge and awareness on packaging system leads to low price and damaged fruits during carrying.
- Over use of pesticide leads to high production cost and also health hazard.
- Access to export market.

Possible interventions:

- Farmers including poor and extreme poor have better access to quality inputs for better production
 - Access to QPM
 - Promotion of environment friendly inputs
 - Promotion of safe and judicial (quality, quantity, time, method, sprayman health use of quality pesticides and fertilizers)
- Farmers adopt improved production/ management techniques for fruits production
 - Promotion of improved technologies and management practices (for producers including orchard owners, LSPs and biral)
 - Homestead tree improvement / enrichment (special initiative for extreme poor)
 - Facilitate SPAs to organize technical session on mango, papaya and jujube
 - Introduction of new varieties
- Farmers have access to profitable markets for better margin
 - Access to profitable markets at local/national level through better packaging, harvesting and post harvest handling
 - Development market linkages by: exploring potential for more efficient domestic supply chain
- Development of Innovation for extreme poor
 - Enrolment of EPs in fruit production and marketing

Thank you



Empowering of Small Farmers in Markets

By Juejan Tangtermthong
Executive Director



AFMA

- The Agricultural and Food Marketing Association for Asia and the Pacific (AFMA)
- An international non-profit organization based in the FAO Regional Office for Asia and the Pacific (RAP), Bangkok
- Operates under membership contributions, its own activities and financial support from the international agencies.



AFMA's mandate

- to carry out technical cooperation among food and agricultural marketing institutions of the countries in Asia and the Pacific.



AFMA's members



What we do

- Study tour
- Projects
- Workshop
- Training
- Publications



Small farmers in markets

- Case studies of small farmers who gain access to high value markets
- Studied in 2007-2008
- By AFMA/FAO



Small farmer

- One farmer or one farmer family for labor and management
- disadvantages and less competitive



Identifying cases



- Identified from countries in Asia
- Selected for 10 cases
- Including fresh produce, rice, live stock and dairy



Ten Selected Case studies

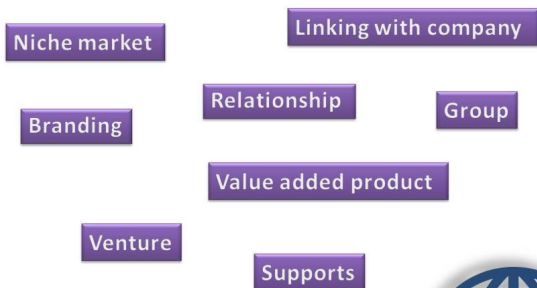


Study

- Visited farm
- Interviewed farmers and others stakeholders in the chain
- Observed their production until produce was delivered to the market



How they be in the market?



Value adding

- Using processing (e.g. juice processing, frozen, meat ball)
- Get certificate (e.g. Halal, abattoir license, Global GAP)



Organizing into group

- Helps collect and assemble produce in one place
- Attracts trader or other supports
- a socialize group or group in the same area.



Venture

- Including open up for initiative, information and news
- They try new crop, new products and take it as an opportunity.



Niche market

- non-traditional market
- such as institution buyer, group of buyers or health shop



Network

- Helps to keep farmer in the chain
- They have long relation with company
- They are mentor to other farmers



Focus

- Focus and commitment to their production



Major Factors

No.	Case Studies	Country	Vulnerability	Group Organization	Market	Niche	Network	Focus
1	Room Bai Housewife rice producer group	Thailand	✓	✓	✓	✓	✓	✓
2	Sakaest Organic Asparagus Farmer Group	Thailand		✓			✓	✓
3	Hongsouphap Village Rice Farmers	Lao PDR		✓		✓		✓
4	Laidhoy Village Vegetable Farmers	Lao PDR		✓	✓	✓	✓	✓
5	Dragon Fruit Farmer in Long An	Vietnam	✓	✓	✓		✓	✓
6	Ham Bai Pomelo Farmer in Vinh Long	Vietnam	✓	✓			✓	✓
7	CV Laktabridia Goat Dairy Farmer in Bandung	Indonesia	✓	✓	✓	✓	✓	✓
8	CALCOA Vegetable Farmers Cooperative	Philippines		✓		✓		✓
9	Carambola (star fruit) grower	Malaysia	✓		✓		✓	✓
10	HS Itada cattle farmer	Malaysia	✓		✓		✓	✓

Empowering small farmers

1. Working with private sectors

- Customers know them.
- They provide service and information to customers and farmers.
- They run business effectively and make it competitive.



Empowering small farmers

2. Avoiding subsidies

- provide farmers, buyers, marketers with appropriate services and information
- avoid give free inputs, it makes them weak
- Link them up



Fundamental factor

- Produce good quality, safety produce and meet requirements



Extension workers should advise farmers of their different options, but they should never tell them what to do.

Source: Reproduced from Marketing Extension Guide (5): Horticultural Marketing © FAO 2006



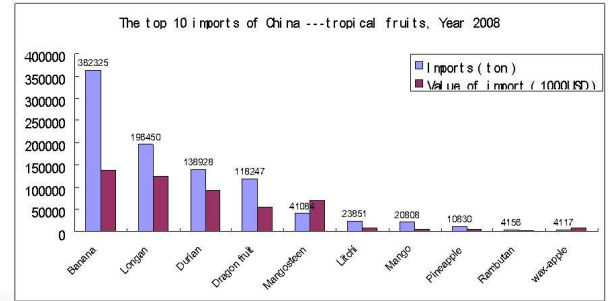
A Prospect for China's Potential Market of Tropical Fruit

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China Tropical Fruit Imports



- Main fruits imported are banana, longan, durian and dragon fruit
- Potential for pineapple, mango and rambutan



INTERNATIONAL TROPICAL FRUITS NETWORK

1. The Present Situation of Tropical Fruit Trade between China and ASEAN

Import of Banana

1.1 Rapid Growth in Fruit Imports of China

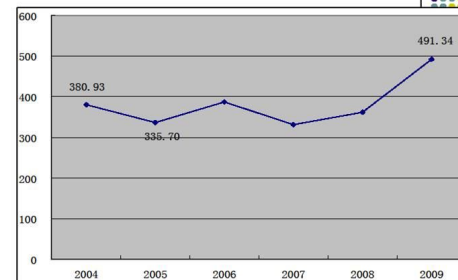


Fig. 1 China's import of banana, 2004-2009 unit: thousand MT

Import of Pineapple

1.1 Rapid Growth in Fruit Imports of China

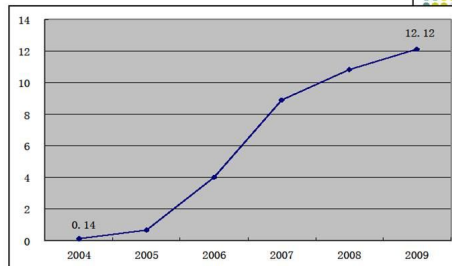


Fig. 2 China's import of pineapple, 2004-2009 unit: thousand MT

Import of Longan

1.1 Rapid Growth in Fruit Imports of China

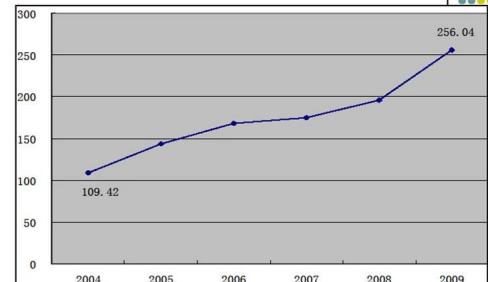


Fig. 3 China's import of longan, 2004-2009 unit: thousand MT

Import of Durian

1.1 Rapid Growth in Fruit Imports of China

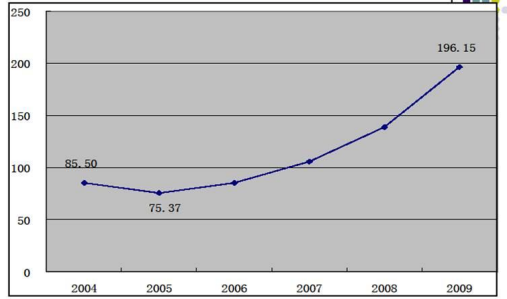


Fig. 4 China's import of durian, 2004-2009 unit: thousand MT

Import of Dragon fruit (Pitaya)

1.1 Rapid Growth in Fruit Imports of China

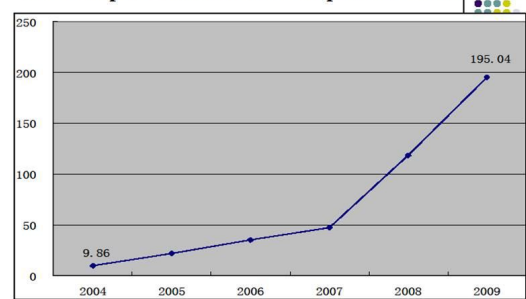


Fig. 5 China's import of dragon fruit, 2004-2009 unit: thousand MT

Import of Coconut

1.1 Rapid Growth in Fruit Imports of China

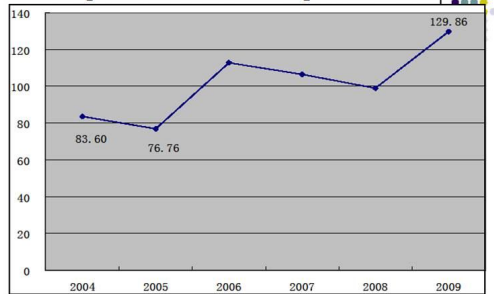


Fig. 6 China's import of coconut, 2004-2009 unit thousand MT

Import of Mangosteen

1.1 Rapid Growth in Fruit Imports of China

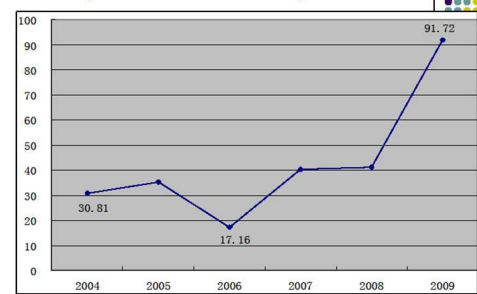


Fig. 7 China's import of Mangosteen , 2004-2009 unit thousand MT

Import of Lychee

1.1 Rapid Growth in Fruit Imports of China

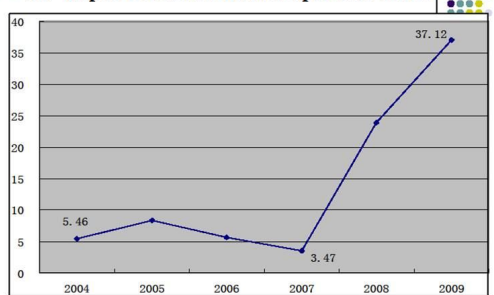


Fig. 8 China's import of lychee, 2004-2009 unit thousand MT

Import of Mango

1.1 Rapid Growth in Fruit Imports of China

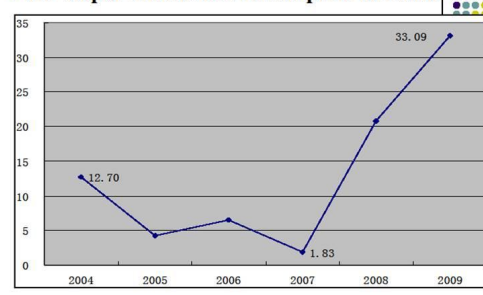


Fig. 9 China's import of mango, 2004-2009 unit thousand MT

1.1 Rapid Growth in Fruit Imports of China

Most of fruits import from ASEAN countries

Table 1 China's imports of major tropical fruits and their sources, 2009

	Imports (Thousand MT)	Major importing countries and the percentage of total imports	Imported from ASEAN
Banana	491.3	Philippines (71.7%) , Thailand (3.6%) , Vietnam (3.9%)	98.6%
Longan	256.0	Thailand (54.44%) , Vietnam (45.56%)	100%
Durian	196.1	Thailand (100%)	100%
Dragon Fruit	195.0	Vietnam (99.97%) , Thailand (0.03%)	100%
Coconut	129.9	Vietnam (91.35%) , Indonesia (6.04%) , Philippines (2%)	100%
Mangosteen	91.7	Thailand (89.77%) , Indonesia (8.90%) , Malasia (1.33%)	100%
Lychee	17.1	Vietnam (62.04%) , Thailand (37.96%)	100%
Mango	33.1	Burma (93.16%) , Thailand (3.58%) , Philippines (0.8%)	98.5%
Pineapple	12.1	Philippines (93.6%) , Thailand (0.3%)	93.9%
Papaya	0.4	Malasia (13.17%) , Philippines (67.3%) , Thailand (1.4%)	81.86%

China-decreasing export (fresh fruits)

1.1 Rapid Growth in Fruit Imports of China

In contrast with the rapid growth of imports, China's exports of major tropical fruits have decreased year by year

Table 2 Chinese Exports of Major Tropical Fruit Unit: Thousand MT

Year	Banana	Longan	Lychee	Pineapple
2004	23.4	1.5	9.7	5.8
2006	22.8	3.1	9.8	3.7
2009	13.1	0.9	8.0	2.5

China-Increasing import (fresh fruits)

1.2 Larger Increase in Imports of Major Processed Fruits

Table 3 China's imports of major processed tropical fruits Unit: MT

Year	Canned Pineapple	Dried Longan Pulp	Ordinary Pineapple Juice	Canned Lychee	Canned Longan
2004	1622.9	55461.4	82.3	0	107.4
2006	2628.3	58895.3	164.3	0	0.07
2009	6781.8	133616.2	490.1	2.6	160.7

China-Import increasing (processed fruits)

1.2 Larger Increase in Imports of Major Processed Fruits

Most of processed fruits import from ASEAN countries

Table 4 China's imports of major processed tropical fruits and their sources, 2009

	Imports (MT)	Major importing countries and the percentage of total imports	Imported from ASEAN
Canned Pineapple	6781.8	Philippines (30.29%) , Thailand (47.8%) , Indonesia (21.5%)	99.63%
Canned Lychee	2.65	Thailand (91.3%)	91.3%
Dried Longan Pulp	231.96	Thailand (95.76%) , Burma (3.46%)	100%
Canned Longan	1200.66	Thailand (100%)	100%

China-export is decreasing (processed fruits)

1.2 Larger Increase in Imports of Major Processed Fruits

Some processed fruit products which China had comparative advantages , such as canned pineapple, canned longan , showed declining in export

Table 5 The Export of China's Major Processed Tropical Fruits Unit: MT

Year	Canned Pineapple	Dried Longan Pulp	Ordinary Pineapple Juice	Canned Lychee	Canned Longan
2004	77064.5	311.2	7583.2	19483.7	1638.7
2006	64501.5	287.0	3532.2	21908.6	2313.9
2009	64462.6	231.9	9687.9	22033.4	1200.7

2. The Economic Effects of Tariff-free Trade in Tropical Fruits between China and ASEAN

• 2.1 Enrich the Consumer Market of Tropical Fruits in China

China's net imports of tropical fruits are growing fast, which reflects from one aspect, Chinese consumers' demand for tropical fruit is increasing day by day. It can be said of China - ASEAN Free Trade Area and the implementation of zero tariff tropical fruit, greatly enriched the Chinese consumer market of tropical fruits, effectively meet Chinese consumer's demand for tropical fruits.

• 2.1 Enrich the Consumer Market of Tropical Fruits in China

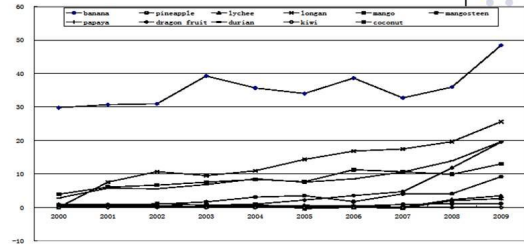


Fig.10 The Trend of Net Imports of Major Tropical Fruits between China and ASEAN,2000-2009

• 2.2 Improve the economic efficiency of trade

Trade Formation Effect

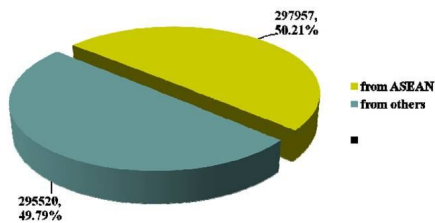


Fig.11 The market share of banana in China, 2000 unit: MT

Banana-2004

• 2.2 Improve the economic efficiency of trade

Trade Formation Effect

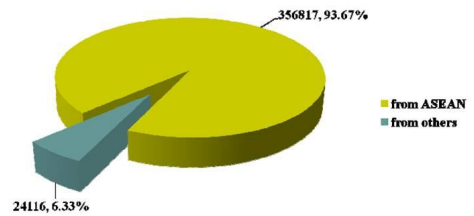


Fig.12 The market share of banana in China, 2004 unit: MT

Banana-2008

• 2.2 Improve the economic efficiency of trade

Trade Formation Effect

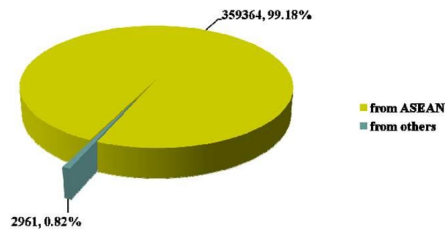


Fig.13 The market share of banana in China, 2008 unit: MT

Lychee (2002)

• 2.2 Improve the economic efficiency of trade

Trade Diversion Effect

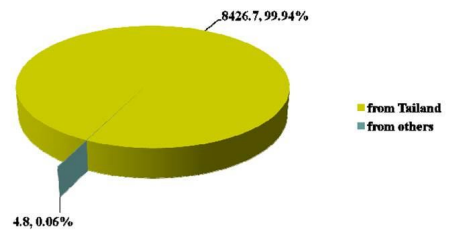


Fig.14 The market share of Lychee in China, 2002 unit: MT

Lychee (2009)

2.2 Improve the economic efficiency of trade

Trade Diversion Effect

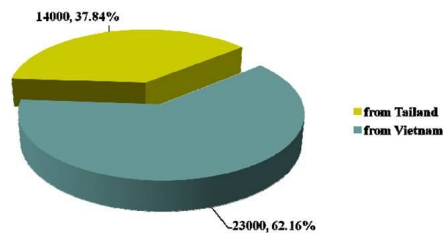


Fig.15 The market share of Lychee in China, 2009 unit: MT

Export-marginal growth Import-faster growth

2.3 Led to the trade deficit between China and ASEAN

Table 6 Trade Deficit between China and ASEAN Unit: 100 million US\$

item	2004	2005	2006	2007	2008	2009
Export	0.07	0.11	0.13	0.14	0.15	0.15
Tropical Fruits Import	2.88	3.09	3.44	4.46	5.58	8.40
Deficit	2.81	2.98	3.31	4.32	5.43	8.25
Export	429	554	713	942	1141	1063
Total Amount Import	630	750	895	1084	1170	1076
Deficit	201	196	182	142	29	4

3. The potential market for tropical fruits in China

China's production still growing

3.1 The Tropical Fruits

The large quantities of importing tropical fruits from ASEAN have not affected China's production of major tropical fruit

Table 7 The Output of China's Major Tropical Fruits Unit: Thousand MT

Year	Banana	Lychee	Pineapple	Longan
2001	527.2	95.4	86.9	62.1
2002	555.7	152.3	82.7	94.4
2003	590.3	112.3	82.2	91.1
2004	605.6	155.5	80.8	101.8
2005	651.8	144.1	84.8	109.1
2006	690.1	150.7	89.1	110.7
2007	779.7	170.7	90.5	116.9
2008	783.4	150.7	93.4	127.1
2009	883.4	169.6	104.26	126.0

Loosing competitiveness

3.1 The Tropical Fruits

China's tropical fruits have not international competitiveness because of higher producing cost

Table 8 Comparison With Imp. Price and Ex. Price of China's Major Tropical Fruits Unit: US\$/Kg

Year	Banana		Lychee		Durian		Longan	
	Ex. Price	Imp. Price	Ex. Price	Imp. Price	Ex. Price	Imp. Price	Ex. Price	Imp. Price
2004	0.28	0.25	0.59	1.21	0	0.61	0.73	0.63
2005	0.32	0.30	0.75	1.35	0	0.64	0.41	0.51
2006	0.32	0.30	0.61	0.90	0	0.63	0.69	0.51
2007	0.32	0.34	0.76	0.87	0	0.67	0.76	0.56
2008	0.45	0.38	1.21	0.35	0	0.67	1.25	0.63
2009	0.51	0.36	1.19	0.56	0	0.63	0.91	0.61

3.2 Processed Tropical Fruits

China has a certain comparative advantage in some processed tropical fruit products, such as canned pineapple, ordinary pineapple juice, canned lychee, canned longan

Table 9 China's import and export of major processed products of tropical fruits from the world Unit: MT

Year	Canned Pineapple		Ordinary Pineapple Juice		Canned Lychee		Canned Longan	
	export	Import	export	Import	export	Import	export	Import
2004	77064.49	1622.95	7583.20	82.33	19483.67	0.00	1638.67	107.44
2005	72083.65	2832.65	4941.21	113.32	23071.68	0.00	1868.26	0.11
2006	64501.49	2628.27	3532.19	164.28	21908.57	0.00	2313.89	0.07
2007	80864.66	2957.85	5078.90	180.62	21430.84	94.00	2047.28	8.54
2008	76766.34	5526.27	5178.19	256.27	26031.73	2.00	2480.40	1.33
2009	64462.56	6781.78	9687.92	490.09	22033.43	4.36	1200.66	160.70

3.2 Processed Tropical Fruits

However, compared with ASEAN countries, China has not competitive in processed tropical fruit.

Table 10 China's import and export of major processed products of tropical fruits from ASEAN

Year	Canned Pineapple		Ordinary Pineapple Juice		Canned Lychee		Canned Longan	
	export	Import	export	Import	export	Import	export	Import
2004	261.66	1620.23	304.00	37.12	7874.84	0	1245.68	107.44
2005	358.22	2813.68	0.00	90.86	9069.40	0	1109.00	0.11
2006	1288.76	2615.80	0.00	97.97	8709.07	0	1850.61	0.07
2007	232.62	2916.60	30.40	154.50	8555.46	1.73	1409.56	8.54
2008	503.66	5517.80	80.00	211.94	11125.26	1.40	2091.51	1.33
2009	483.55	6756.80	282.50	451.48	10054.53	2.42	946.46	160.70

Year	Dried Longan Puple		Concentrated Pineapple Juice		Copra		Mango Juice	
	export	Import	export	Import	export	Import	export	Import
2004	218.69	55446.75	0.00	51.99	0.00	188.57	12.03	97.33
2005	190.25	44384.92	2.22	40.84	0.00	326.16	30.00	28.24
2006	192.99	58895.17	0.00	53.96	0.00	456.65	53.60	74.43
2007	189.82	80995.68	0.00	63.21	0.00	1062.89	23.94	62.08
2008	161.45	76116.72	0.00	37.28	0.00	1545.87	39.56	134.38
2009	161.23	133615.45	0.00	109.13	0.00	2913.40	8.00	226.42

Conclusion

- This study indicates that China's demand for tropical fruit and correlative processed products has been increasing since the establishment of Free Trade Area between China and ASEAN, because of the disadvantages in China's tropical fruit. Therefore the potential market of tropical fruit and correlative processed products is huge and unpredictable.

Thank You!