

	منظمة الأغذية والزراعة للأمم المتحدة	联合国 粮食及 农业组织	Food and Agriculture Organization of the United Nations	Organisation des Nations Unies pour l'alimentation et l'agriculture	Продовольственная и сельскохозяйственная организация Объединенных Наций	Organización de las Naciones Unidas para la Agricultura y la Alimentación
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COMMITTEE ON COMMODITY PROBLEMS

INTERGOVERNMENTAL GROUP ON BANANAS AND TROPICAL FRUITS

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MARKET POTENTIAL FOR MANGOSTEEN AND SALACCA

I. INTRODUCTION

1. At its last session, whilst considering the case study of the market segmentation of minor and underutilized tropical fruits, the IGG on Bananas and Tropical Fruits requested that a case study on one or two minor tropical fruits, mangosteen and salacca (also known as salak), be prepared for its next session.
2. Preliminary research by the Secretariat revealed a paucity in information on these fruits, and therefore, a meaningful study of the market potential was not possible. Following consultation with IGG members and observers to identify previous market analysis carried out on these fruits; it became clear that none was available, as these fruits fell under the truly “under-utilized” category. The only source that had some information through its membership was the International Tropical Fruits Network (TFNet), but most of these were agronomic rather than economic.
3. The Secretariat understands that information necessary to carry out a market evaluation may be available at the national level in countries that are producers of these fruits. To undertake a supply and demand analysis of mangosteen and salacca, the Secretariat would require more detailed information from member countries, a summary of which is discussed and listed in the conclusion of this document. Hence, for this session, the Secretariat has prepared this Conference Room Series (CRS) document to provide members with a brief overview of the current production and partial intra-regional trade of mangosteen in particular and focussed on the information required to perform a credible market analysis. Delegates are requested to consider this CRS document and advise the Secretariat on whether further work should be carried out.

II. MANGOSTEEN

A. PRODUCTION AND EXPORT

4. Mangosteen (*Garcinia mangostana*) is believed to have originated from the Malay archipelago and is grown commercially in Southeast Asia (Thailand, Indonesia, Vietnam, Malaysia and the Philippines). It is grown on a smaller scale in India, Sri Lanka, Australia, Hawaii, Puerto Rico, Costa Rica and Mexico.

5. Thailand is the largest producer and exporter of mangosteen in the world, accounting for more than 50 percent of global output (Table 1) and nearly 90 percent of exports. Other notable producing countries include Indonesia, Vietnam, Malaysia and the Philippines.

Table 1: Main mangosteen producing countries (2009)

	Country	Area (hectares)	Production (tons)
1.	Thailand	51 000	200 000 ¹
2.	Indonesia	12 000	105 558
3.	Vietnam	10 000	40 000 ²
4.	Malaysia	7 300	28 350
5.	Philippines	1 050	4 200 ²

¹ 2010.

² Secretariat's estimates.

6. Mangosteen exports from Thailand in 2010 was estimated at 100 000 tonnes, 50 percent of which were to China, 30 percent to Vietnam and 20 percent to other ASEAN and European countries. Indonesia also exported mangosteens to China and Singapore, but quantities were less than 5 percent of that shipped from Thailand¹.

7. Mangosteen is the sixth most popular tropical fruit imported by China, the largest import market for the fruit. Except for 2006, there had been a gradual increase in mangosteen imports into China: from 35 200 tonnes in 2005 to 41 084 tonnes in 2008. In 2009, imports of the fruit more than doubled to 91 718 tonnes, of which almost 90 percent were from Thailand, 9 percent from Indonesia and 1 percent from Malaysia (Table 2). The total value of mangosteen exported to China increased from USD 39.54 million in 2005 to USD 144.38 million in 2009 (Table 2).

Table 2: Imports of mangosteens into China 2005-2009

Year	Total number (MT)	Total amount ('000 USD)	Indonesia		Malaysia		Thailand	
			(MT)	('000 USD)	(MT)	('000 USD)	(MT)	('000 USD)
2005	35 200	39 547	4 008	4 370	406	468	30 785	34 709
2006	17 161	25 217	4 521	7 721	287	458	12 352	17 039
2007	40 404	62 230	6 810	13 560	154	335	33 439	47 934
2008	41 084	69 565	7 530	14 957	1 802	3 446	31 750	51 162
2009	91 718	144 382	8 160	14 280	1 224	2 110	82 334	127 992

Source: Customs Statistics Yearbook of China.

B. MARKET POTENTIAL OF MANGOSTEEN

8. Mangosteen is gaining popularity with consumers and has the potential to be further developed into a mainstream tropical fruit export for the following reasons:

- Demand has been increasing in producing countries as well as in export markets, such as China, Japan, the European Union and the United States; and

¹ Indonesian exports of mangosteen to China increased from 22.2 tons in 2001 to 4 037.6 tons in 2007.

- The nutrition and medicinal value of the fruit have been established and documented. It has been reported to possess natural medicinal properties similar to antibiotic, antiseptic, anti-inflammatory, anti-allergic and anti-convulsant. It has also been used in traditional medicine to cure ailments ranging from skin disorders to dysentery. Xanthenes, a photochemical found mainly in the rind of the fruit, is now being commercialized as a health supplement.

9. Agronomically, the plant has no serious pests or diseases, and labour requirements are not high, except during harvesting, while environmentally, the tree makes a good crop mix with other species of tropical fruit trees.

C. CONSIDERATIONS IN DEVELOPING THE MANGOSTEEN MARKET

10. In developing the mangosteen market, some issues that need to be addressed include:
- Technical requirements. The internal fruit quality is affected by poor handling during harvesting. Therefore, the fruits have to be handpicked and screened to ensure that the pulps are free of physiological conditions such as gummosis and “glassy pulp”. Special scanning equipment is required to screen the fruits.
 - Compliance with the sanitary and phytosanitary requirements of the importing countries. Mangosteens exported to Japan require vapour heat treatment, while, those bound for the US market need to be irradiated. Phytosanitary requirements for the Chinese market are less stringent, but nevertheless require phytosanitary certificates.
 - Seasonality. Glut and low prices are problems during the main season. Research and development in staggering the production as well as processing the fruit into other products, such as jams and juices, could minimize this adverse effect.

III. SALACCA

11. Salacca, or *Salacca edulis*, belongs to the palm family Arecaceae and is native to Indonesia. It is a short stem palm with long leaves characterized by fruits that are found in clusters at the base of the palm. Each fruit has a brown, scaly skin; hence, the fruit is also known as snakefruit. With the skin removed, the fruit is made up of three lobes of crunchy, cream coloured pulp, with a hard dark seed. Depending on the variety, the fruit tastes sweet and acidic; salacca is available all year round.

12. Salacca is commercially grown in Indonesia, Malaysia and Thailand. Indonesia has varieties of salacca that are well developed for commercialization; the most popular are the *salak pondoh*, *salak bali* and *salak gulabatu*. Market information of this fruit is essentially non-existent.

A. PRODUCTION AND EXPORT OF SALACCA

13. Salacca is mainly produced in Indonesia. However, planted areas decreased from 36 210 hectares in 2005 to 31 174 hectares in 2009 when production reached 829 000 tonnes. The recent volcanic eruption in central Java destroyed an estimated 16 000 hectares of salacca which is expected to see further declines in output over the next few years. Malaysia recorded an area of 1 931 hectares in 2009 with a production of 2 260 tonnes.

14. Export of salacca from Indonesia remains low, but has been increasing in recent years, particularly to China, Malaysia and Singapore.

B. POTENTIAL OF SALACCA AS AN EXPORT COMMODITY

15. Salacca has traditionally been sold in the domestic market in Indonesia. However, with improved packaging to prolong shelf life, exports of the fruit have been carried out to Malaysia, Singapore and China.

16. Although there appears to be an export market potential for the fruit, a few issues have to be addressed:

- The fruit has a short shelf life. Therefore, research is required on controlled atmospheres, optimum storage conditions and packaging for it to be exported; and
- More aggressive promotion is imperative, in order to expand the market for the fruit because the fruit is relatively unknown, to consumers outside of Indonesia, Malaysia, Singapore, China and Thailand.

IV. CONCLUSION

17. Mangosteens appear to have a better market potential than salacca, based on their popularity, existing production, consumption and trade potential. With the recent lifting of the ban on imports of mangosteen into the United States and the increasing exports of the fruit to Japan, the future for mangosteen exports appear brighter. However, issues concerning sanitary and phytosanitary requirements need to be resolved through bilateral agreements.

18. For the salacca market to develop, more effort is needed, including promoting the fruit, as it is currently relatively unknown.

19. More detailed market information would allow for a thorough demand analysis, and the inclusion of market research of consumer attitudes would greatly enhance the understanding of these markets.

20. If the Group wishes the Secretariat to carry out a more meaningful analysis, then the Group is requested to provide the following information:

- Apparent consumption
- Distribution channels
- Market shares
 - supplies-wholesaling
 - retailing
- Economic factors affecting demand
 - income levels
 - purchasing power
 - product pricing along the value chain
- Non-Economic Factors affecting demand
 - consumer habits and preferences
 - consumer demographics (population, age distribution, income distribution, education)
 - quality and perceptions of product quality
 - consumer knowledge and awareness
- Market promotion – types and impact

21. Supporting quantitative analysis of demand would require the following information:

- Time series of monthly consumption and retail prices of mangosteen and salacca, possibly covering the last 5 to 10 years;
- Time series of monthly consumption and retail prices of the competing fruits covering the same time period;
- Time series of monthly consumption of total food expenditure; and
- Producer prices of these fruits with references to the same time horizon.