Australian Government

Department of Agriculture,
Fisheries and Forestry

Forecasting of Expected Demand and Growth Opportunities in Australian Tropical Fruits Markets

June 2005

Final

Contents

Executive Summary


- This project has been undertaken to identify potential marketing initiatives and frame local market growth prospects for what has been described as Tropical Fruit. It has assessed the global trends through publicly available documents via the World Wide Web, several databases the researchers have access to, as well as hard copy produce industry literature housed on the researchers' premises. This information has been combined with data collected by qualitative interviews with a selection of domestic market stakeholders.
- It was found that the views of products included in the **Tropical Fruit** category varied significantly. Some products were seen as products or categories by themselves, while others were seen as part of the category. These variations have required this project to define a Tropical Fruit category structure of 3 tiers of products.
- The higher volume products that include Bananas, Avocados and Mangoes are established. These products require different growth and promotional strategies to the lower volume lines that require more consumer education and have a strong need to win the confidence of the fresh supply chain.
- It is clear that a base platform of supply chain management and products consistency is required before some of the tier 2 & 3 products will enjoy the benefits of specific marketing activity.
- This report concludes that it has been possible to extract sufficient information in order to provide a degree of direction for future marketing initiatives. Some "wake-up call trends" were identified. They included the increased production of tropical fruit in developing countries, maturing attitudes in key product groups that lead to cross-border cooperation on a co-operative basis and the likelihood that if tropical fruit gains acceptance and becomes 'mainstream', margin erosion will occur.
- The lack of international literature on the products included and the corresponding presence of numerous Australian articles, reports and conference papers suggests that Australia is actually ahead of the pack in terms of tackling the production and post harvest end of the value chain for Tropical Fruits even if sustainable demand solutions are still elusive. It appears that Australia will in most instances have to seek its own solutions to the demand issue rather than relying upon an adapted successful overseas model. However, it is important to understand that it is possible for the stakeholders of these to learn from other products and categories. There is no need nor the luxury of time to reinvent the wheel in its entirety.

Top 5 Global Tropical Fruit Trends


The top 5 Global trends and their potential impact on the local market are listed below.

1. Increasing global production in third world producing countries.

- –Increasing global volumes at lower production cost, which is forecasted to lead to pressure on prices in export fresh and processed markets.
- –Increasing pressure to grant access for imported tropical fruits, which will be available at competitive prices.
- –An increasing range of partnering options to provide extended availability for the Australian domestic market.

2. Supply chain alignment and partnerships.

- –Working precedents for adoption of supply chain management in the local market.
- –Increasing barriers to export market entry from other global producers with more advanced supply chain management.

3. Market positioning based on delivering health / energy benefits.

- –An opportunity for sales at a price premium if these benefits are acknowledged.
- –An associated requirement to develop a supply chain.
- –An associated requirement to develop and execute a trade and consumer marketing program to position products.

4. Organic or Eco production

- –An opportunity for sales at a price premium if these benefits are acknowledged.
- –An associated requirement for a cost effective Organic /Eco production system, accreditation system and supply chain.
- –An associated requirement to develop and execute a trade and consumer marketing program to position products.

5. Development of new products forms and uses

- –Opportunities for sales as high value ingredients. (IE Pharmaceutical, health, cosmetics)
- –Opportunities for new uses in Food Service (IE Meal & beverage additives)
- –An associated requirement for dedicated market development and supporting R&D.

Tropical Fruit ~ A Category Definition

This market and does not view the full range of fruit produced in tropical regions as one category. Therefore, there is a need to break these products up into a structure that will allow effective plans to firstly be compiled, and secondly to secure the support of all involved with these products. Therefore this report has adopted the tiered structure below. (NB The Food and Agriculture Organisation of the United Nations (FAO) classifies mango, pineapple, papaya and avocado as *major* tropical fruit. Lychees, Durian, Rambutan, Guavas and Passionfruit are referred to as *minor* tropical fruits.)

Tier 1 Banana, Avocado, Melon, Mango, Pineapple.

These are mainstream consumer products and are managed separately. Consumers understand these products, they are widely distributed and most have the scale to invest in marketing support activity.

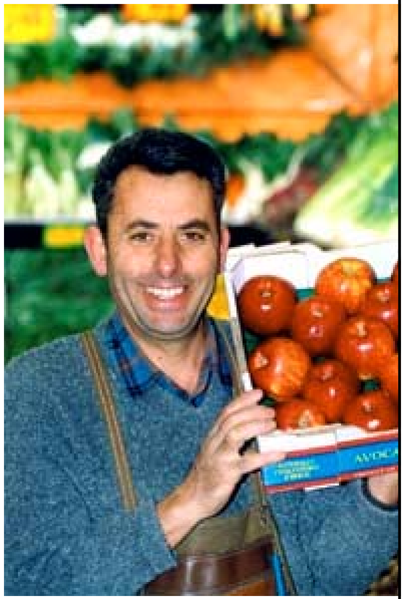
Tier 2 Papaya, Passionfruit.

These two products are on the fringe of Tier 1. Whilst these products are understood by most consumers, they have more specialist uses, shorter seasonal windows and consequently lower volumes.

Tier 3 Custard Apple, Durian, Lychee, Longan, Mangosteen, Rambutan.

This group of products are know by those with Asian ethnicity they are not understood by the majority of consumers. They are struggling to generate volumes and do not enjoy widespread fresh supply chain support. This is the group of products most people perceive as the "Tropical Fruit" category. The positive work in Lychees has them close to reaching tier 2.

Domestic Market Conditions

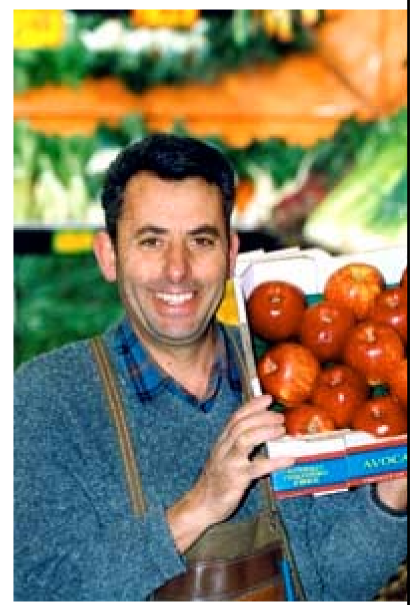


- Structural challenges in domestic market
  - Retail channels dominated by 2 supermarkets, which hold 65% of the fruit and vegetable market. Supermarkets offer fringe tropical fruits as a range statement.
  - Food service channel increasing their share of stomach but is more fragmented.
- Changing consumer demographics and buying behaviour
  - Aging health conscious population with more single person households seeking single portion serves. Lower domestic food preparation skills and knowledge.
  - Less formal meals, more snacks on the run and typically shopping for tonight's meal.
  - The Asian influenced demographic was more accepting of the tier 3 products. However, all indications are that most of the new Asian migrants who are seeking to buy tier 3 products will seek out a least cost product in a local fresh market.
- Fruit Snack category competition levels are increasing
  - More fresh fruit alternatives at better value (IE Grapes and Summerfruit). In the 2 year period ending June 04 the price average retail price of fruit was $2.82 per kg, which is substantially less than the retail price of tier 3 products that are seeking to generate growth.
  - The processed nutritional snacks ($450m PA) and the shelf stable fruit products ($280m PA) continue to develop and market new products. These alternatives are providing welcome consistency and are capturing share of the snack market.
- An market information culture of low visibility
  - This has masked wholesale selling costs and "clouded" market signals to producers. The wholesale sector, who are distribution enablers for the smaller growers or low volume lines, are not all skilled at market development.
  - This uninformed status compounds the tendency to resort to a commodity price-setting mode.

RETAILworks

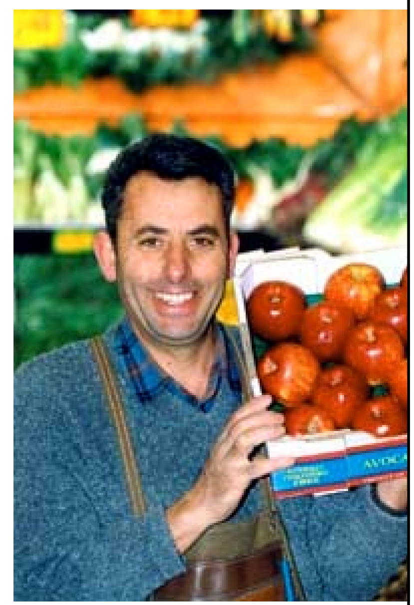
Domestic Market Conditions

- Market poorly informed and a commodity price setting mechanism
  - Price setting is driven by supply volumes, anchored in commodity trading principles and when under pressure, is prone to erode category value. These practices challenge the capacity for longer term product positioning and category building. Local tropical growers of Tier 2 & 3 are viewed as weak in supply chain management. Particularly in forecasting and quality consistency.
- An increase in imports is anticipated by local wholesalers
  - Thailand & China are increasing aligning their export output. Processing options are likely to be covered by this increasing production output.
  - Local wholesalers will provide an easy entry point for new imports.
- Fruit & Vegetables are still a self serve category
  - Fruit & vegetables are the only perishable category that consumers can touch and self select before they purchase.
  - This creates some positives in the shopping experience. Especially for supermarkets and a large part of how their credibility with fresh food is attributed to this part of the shopping experience.
  - As this category is self serve, it is dependent on correct product identification at the checkout. Systems and processes that aid this identification can influence whether products are ranged and viably traded.



Domestic Market ~ Specific views on Tropical Fruit

- Wholesalers & Retailers do not view tropical fruit as one category.
  - Some Tropical Fruits are viewed as products in their own and are providing clear examples of what is required to increase sales.
  - Tier 3 product is seen as challenged and requires different solutions.
- The Tier 1 products have shown what is required
  - Consistent value, consistent quality and availability, managed informed supply chains and ongoing promotional support. The wheel does not need to be reinvented.
- Tier 3 product
  - Growth within the products was deemed at steady. Uptake primarily has been from higher income earners and a slow uptake middle to lower income earners. Asian varietals have a generic growth based on immigration from Asia.
  - Sweetness in the tier 3 fruit was a strong influence to grow sales.
  - Supermarket's range the tier 3 products as a customer service. Wholesalers spoke of the supermarket purchasing the tier 3 products more for show than for sales. With their Monday mornings tasks often requiring the discarding of what is on show and replacing it with new stock. Continuing this practise will result in deletion from the range.
- Valued added product potential
  - This is not understood by the fresh market wholesalers and specialist retailers, as they are essentially focussed on trading in whole fresh product. This reflects the low awareness and skills of this part of the supply chain in product development. Especially when fresh cut sales (all fresh produce) in the US are estimated at over $10 billion to $12 billion annually. This represents about 10.5% of total produce sales (retail and food service).
  - The Australian domestic markets are generating similar growth with "fresh cut sales", but this is mostly with vegetables.



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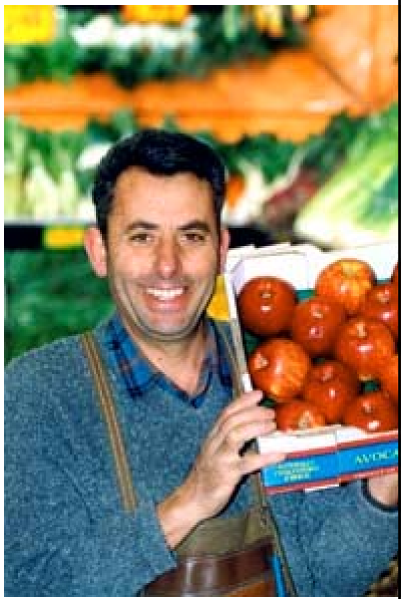
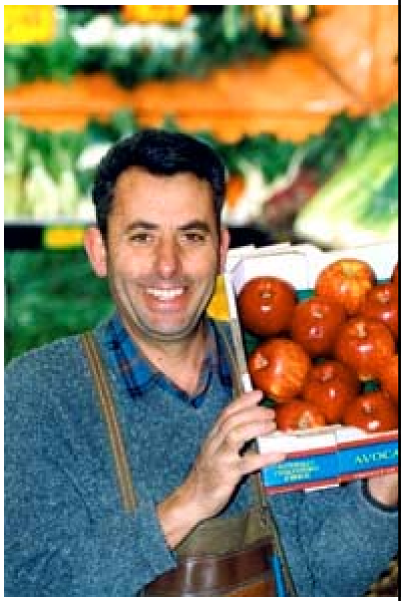
Domestic Market ~ Specific views on Tropical Fruit



- GMO & Organic
  - GMO was not a concern amongst those interviewed. All indications are lack of experience with this issue has insulated this perspective.
  - Organic products were discounted as a "fad" that would pass. This view is in vast contrast to the prevailing consumer attitudes and precedents of other fresh categories. Again it reflects the constraints of working with wholesalers who are not skilled at product development. It is also evident that with such a low volume of sales, there is a valid concern about dividing the sales into an organic range.
- Consumer demand – relationship to availability.
  - Product on show all year round would assist in increasing sales. When the products were not available and pricing inflated, it required a lag time to get sales at sustainable levels.
- Packaging
  - Suggestions of packaging of products was not welcomed. It was seen as an impediment and unnatural. Boxed product sold during seasonal peaks, was seen as an acceptable type of packaging. It is concluded that this strong aversion too packaging stems from the Fresh Fruit and Vegetable industry practice of pre-packing 2nd grade product. Furthermore, Asian consumers are hesitant to buy product pre packaged as they are used to viewing and assessing product before they buy.
  - Packaging innovations in other mainstream categories invite packaging solutions.
- Pricing
  - Some products are sold by the each (Avocados) and others per kg (Bananas), which creates opportunities for tier 2 & 3 products, to set the retail price at the most advantageous entry level. IE A kg of product can be too expensive for a first time user.
  - Price within the retail market drives volume, but quality products can always achieve a premium price. Many thought to lower price in the tier 3 lines, would lead to the products increased acceptance by the lower income Caucasian.
  - The independent Fruiterers accepted that "price is long forgotten after the taste is remembered", implying that consumers will pay for quality.

Domestic Market ~ Specific views on Tropical Fruit

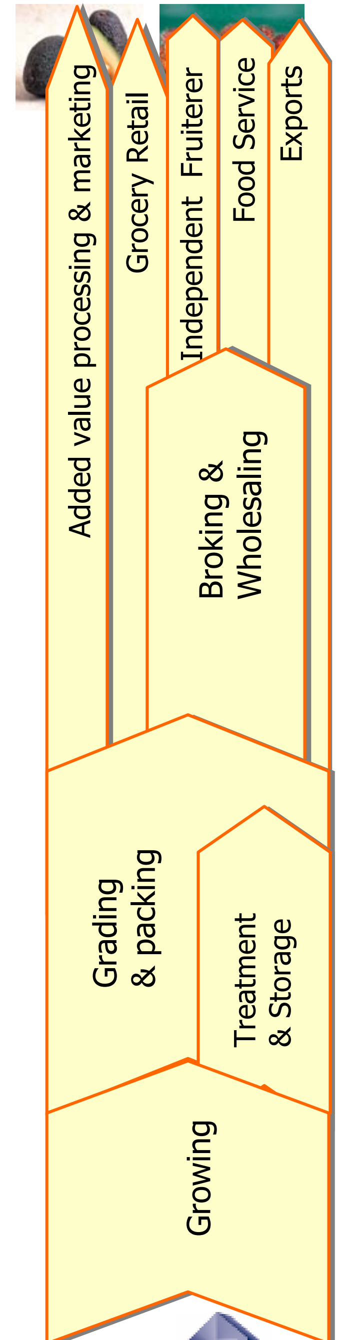
- **Conclusions on specific views on tropical fruits**
  - There are 3 levels of tropical products that need to be treated differently. The products defined in tier 1 are established consumer products with organised supply chains and degrees of marketing support. These products are past being viewed as Tropical Fruits and should be managed differently.
  - The products that are in tier 2 and 3 are viewed as the Tropical Fruit range and these are the products that require the support. If these products are going to achieve an ROI on investments in marketing support they will need to organise their supply chains.
  - Local market wholesalers are not skilled and or orientated to developing markets for products. They are more focussed on basic commodity trading skills and will need to be supported to range new product forms or specifically target new distribution channels.
  - Supermarkets are ranging the tier 3 lines as a range statement rather than as products that are profitably trading. This approach may be driven by the views of category manager but long term it is not sustainable. These products will need to trade in volumes that are profitable, or they will be deleted from the range.



RETAILworks

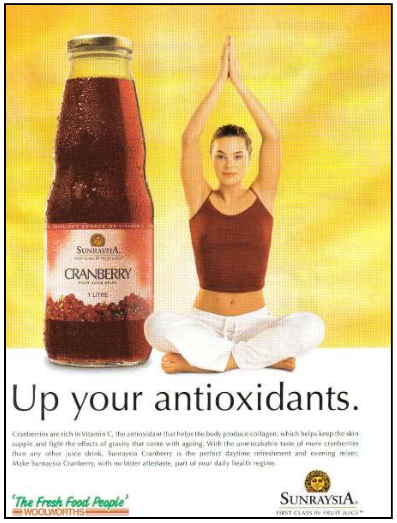
Growth enablers & marketing opportunities

- **Supply chain alignment**
  - This is both an opportunity and an entry level requirement. The tier 1 products understand what is required.
    - The California Avocado Commission recently launched AvoHQ.com, an intranet linking packers, importers and more than 20,000 growers in various nations as part of a strategy to provide year-round support for the industry (Freshinfo, 2005).
  - The tier 2 & 3 products are yet to resolve how their supply chain delivers. Distributors are frustrated with lack of credible forecasting, fragmented supply base, variations in product grade standards and inconsistent coolchain management.
    - Chilean avocado exporters to the UK attribute their marketplace success in 2004 to their efforts to generate partnerships with importers (Freshinfo, 2004).
  - ***"This report concludes that the supply chain for tier 2 & 3 products should be addressed as a priority before investments are made in marketing initiatives"***
- **Assuring taste and sweetness benefits**
  - Many developments are underway to assure the taste of fruit, they are centered on delivering a promised taste benefit. They include;
    - Technologies to assess maturity prior to picking and assess fruit content for brix and soluble solid levels when grading.
    - Conditioned to be for sale as "Ripe and Ready" IE Pears, Summerfruit.
  - These creates a potentially powerful basis to promote product. But it is totally **<u>dependent on the capacity of the supporting supply chain</u>** to deliver the promised benefit.



Growth enablers & marketing opportunities

- **Position your product around specific health benefits**
  - The general health benefits of fruit and vegetables are accepted by consumers, but potentially too broad to provide direct leverage for growth of tier 3 tropical fruit.
  - Tasmanian Salmon promotes the benefits of preventing heart disease by providing Omega-3 with their product. This is the type of direct link that needs to be established.
  - Internationally the health benefits from Bananas have a wide and diverse promise of health benefits "The New England Journal of Medicine has stated that in addition to bananas helping to keep us fit, they can also help overcome or prevent illnesses and conditions such as depression, PMS, anemia, blood pressure, brain power, constipation, hangovers, heartburn, morning sickness, mosquito bites, nerves, ulcers, temperature control, seasonal affective disorder (SAD), smoking, stress and strokes. The International Banana association in Washington, D.C., recently suggested that merchandisers promote the health benefits of bananas to consumers such as the high level of potassium (recommended for hypertension) and high blood pressure (www.food-management.com, March 2005)."
  - If credible and specific benefits can be associated with certain products they can be part of how these products are positioned. Mangosteen, Durian and Papaya have health benefits that are acknowledged by some communities and have potential for a health positioning platform.
- **Position your product around specific energy benefits**
  - The strategy of position on providing "energy" has been adopted by major food producers. It is a strong fit with the busy lifestyle demands, and is complimented by the sponsorship involvement of sporting role models.
  - This has potential with the higher volume and everyday tier 1 products.

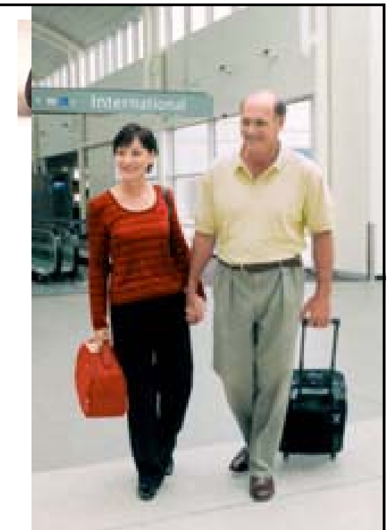


Growth enablers & marketing opportunities


- **Establish specialist retailers as tropical fruit experts**
  - Support can be provided and relationships built with retailers who will continue to sell tropical fruit. This can generate direct consumer feedback and guide product development and marketing activity.
  - Provide a simple set of tools, including ticketing, signage, availability & ripening charts, recipes so the retailers know when the season starts. *"Don't just courier them a parcel of material. Keep in regular contact and respond to their needs."*
  - Reworking the wholesale pack-size may make it easier for the retailer to buy and display new products.
  - Consumers need to know what the product is and how to eat it or they will not buy. They trust the advice of the specialist retailers.

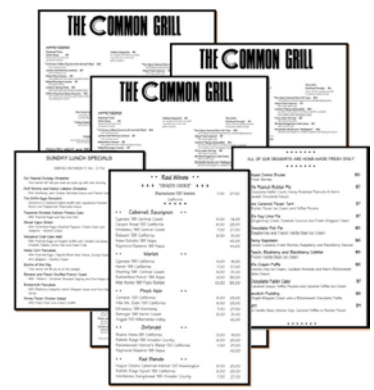
- **Tasting Programs**
  - Majority of all fresh food purchase decisions are now made in store, with over 80% of shoppers making unplanned purchases.
  - Tastings are a proven generator of impulse sales and easily scalable. The market has an existing infrastructure of service providers. They brings product into direct contact with customers. They provides retail food theatre and increase customer and consumer knowledge.
  - Best supported with sharp messages, which will pass the knowledge to the consumer.

Growth enablers & marketing opportunities



- **Use product samples to stimulate to new users…give it to them..it is cost effective**
  - US school programs are giving school children smaller grade apples. Similar programs are running in NZ and have been used in WA and NSW. In UK there are commitments to changing school lunch programs and these programs started with trails of product provided by growers.
  - This approach stimulates trial and potentially creates new users. The costs of the inventory are typically less then the cost of the marketing and advertising needed to stimulate a similar scale of trial.
  - Tropical fruit will need to target appropriate "adult consumption occasions".
    - Options could include intermission breaks in theatres, smaller snacks on airlines and desserts or special treats at signature social functions.

- **Build leverage off Food Service exposure**
  - Work with the leading restaurants and or food service suppliers to get the availability and benefits of tropical fruit understood. Provide support to develop recipes that have potential to translate into home consumption. IE Not overly complicated and allowing the natural taste features of the products to be experienced.
  - Get tropical fruits onto menus and with that reaching new consumers. Being featured in a signature dish in a restaurant generates high exposure.
    - There are opportunities for different product forms (whole product through to pulps) through different food service channels.
  - A high proportion of the changes in the Australian diet, particularly the inclusion of the Asian cuisine, have levered off introduction through food service.



Growth enablers & marketing opportunities


- **Use packaging for portion size control, product ID, ease of prep and the communication of benefits and uses.**
  - Strawberries are now sold in punnets and have steadily increase the volume sold into the domestic market in the last 5 years.
  - Mushrooms are now generating incremental sales of specialty variants in prepackaged punnets. For 15 years mushrooms have provided paper bags for product storage and these bags have carried usage and nutritional information.
  - Grapes and stonefruit are using a versions of punnet to tailor the portion size and better manage the retail waste attributed to excessive consumer handling. The portion sizes for these fruits are typically 500g to 750g.
  - A recent development in with an added value asparagus product, it was found that the portion size needed to be reduced to 125g, as only some individuals in the household eat asparagus.
  - Asian consumers use fruit as gifts. This could be catered for with smaller wholesale carton sizes, where 4-6 fruit are presented as a gift option.
- **Pack the product to an entry level size and price point.**
  - In all the above instances the portion size has been reduced. The strawberries are 250g the mushrooms are 200gm and these portion sizes allow for a lower entry level price point.
  - This is a first principle for all "Fast Moving Consumer Goods", but it is not part the way that fresh fruit products are developed and launched. Adopting this approach is about a different marketing planning process, rather than developing a new way to the market.

Growth enablers & marketing opportunities

- **A coordinated PR strategy**
  - PR is the most cost effective way of getting messages to target consumers. The users of PR, who are generally the managers/writers of food orientated magazines and newspapers, welcome "easy to use" media solutions.
  - A good PR strategy typically builds a suite of stories, recipes and images and makes this available to the users of PR, at times that coincide with seasonal availability and key consumption occasions.
  - Today's information technology can easily distribute or make this suite of recipes, stories and images available to PR users.
  - Effective PR aligns the targeting of consumers, the distribution of PR stories, images and recipes with material to retail distributors. Used correctly, this alignment can also be a catalyst to win the support of retailers.

RETAILworks

Growth enablers & marketing opportunities

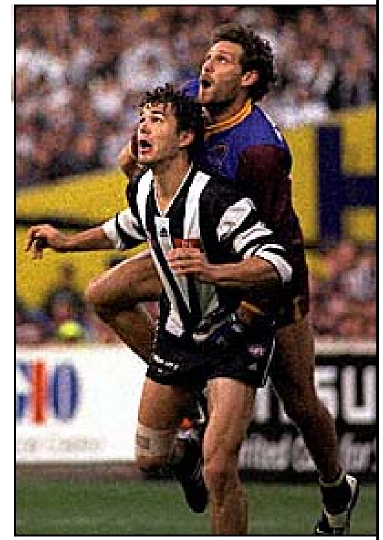
- **Partnering alliances with other brands and products**
  - Allows exposure and sales opportunities that can only be generated jointly.
  - Ideally make the tropical fruits the differentiating feature in a new product.
  - Options include:
    - The energy booster in "Freshly Squeezed Juice" market,
    - Brand alliances with liquor brands,
    - Inclusion as a dried ingredient in cereals,
    - The key ingredient in an adult Cocktail...."Passionfruit" to deliver the tropical perception,
    - The key taste ingredient in Salsa, Chutney, Jams, Jellies and Preserves. These opportunities invite the development of specific products like pulps for easy use by the food service segments.
- **As a "high value" added ingredient**
  - Some products have potential to serve as high value ingredients due to the attributes they bring.
    - In Brazil, Papaya is close to being considered a medicinal product because of their protective effect on the digestive system.
    - Malaysia is using dried longan, which is perceived to nourish the qi (natural energy), to nourish ones blood and calm the mind and improve heart and spleen functions.
  - The challenge is to maintain the value of the tropical fruit ingredient. This challenge is compounded by the increasing volumes being produced globally.
  - A positive example is reflected in freeze dried blue mussel powder, which is viewed as having medicinal benefits, and sells for A$80 per kg. Other processed mussel meats and products sell for A$2 to A$7 per kg. Clearly these sorts of product options need more detailed research.

Growth enablers & marketing opportunities

- **Organic or Eco production claims….GM**
  - Globally there are increasing segments of the food market being supplied from organic or eco accredited food production systems. These products are meeting an increasing consumer concern for how their food is produced.
  - Locally the organic category of food has struggled to capture modest volumes and reach estimated .4% of the total food market. In the US the organic category has reach 1.8% of total food.
  - Adopting this approach requires alterations to production techniques. This report suggest that this option has scope for the larger volume tier 1 products. If it is adopted in part, for the tier 2 & 3 products, it will introduce a strong risk of diluting sales and confidence in the these products.
  - Locally the Eco Banana has been successfully positioned at a price above the standard cavendish banana.
- **Global partnering and year round ranging**
  - Globally alliances are being formed in other fruit categories. Gold Kiwifruit is grown in 4 counties and production and marketed is aligned globally through one organisation. New Apple varieties like Jazz™ are produced and marketed based on licensing agreements. These programs are ensuring the supply to the market is aligned, product is consistent and that the value added further back up the chain is acknowledged and paid for by distributors.
  - This same approach has potential for the tier 2 & 3 tropical fruits. They will need to work with other counter seasonal global producers to ensure year round availability of their product with local retailers. The potential benefit is that the consistent availability translates into higher levels of consumption.

Growth enablers & marketing opportunities

- **Aligning products with consumer events**
  - Certain events are known to be the stimulus for peak consumption of certain products. The biggest avocado consumption day in the US is Superbowl Day, due to the increased guacamole dip preparations for parties held for this key sporting event (San Diego Union –Tribute, 2005).
  - The California Avocado Commission states that 42% of total annual retail sales of avocadoes occur during the ten most important holidays periods, such as July 4^{th}, Easter, Presidents Day, Memorial Day and Father's Day (California Avocado Commission, 2004).
  - The Australian sporting calender has a number of similar events that are enjoyed by consumers who are "grazing" similar types of food.
  - With the Asian interest in the tier 2 & 3 products, it is highly likely that aligning the promotion and PR for these products, around the occasions and events for this community, has potential to increase sales.



Selected Product specific developments ~ Tier 1

- ## Avocado
  - Israeli Agrexco, changed their European marketing strategy from a price to a distribution net work focus.
  - An Ohio State University study indicates that avocados act as a “nutrient booster”, allowing the body to absorb significantly more cancer-fighting nutrients like alpha-carotene and lycopene than other fruit and vegetables. It is also believed that the rich presence of Lutein helps to prevent prostrate cancer. Other health benefits attributed to Avocado relate to Diabetes sufferers (California Avocado Commission, 2005).
- ## Bananas
  - Merchandising units are being designed to eliminate handling of bananas by the supermarkets.
  - Chiquita is in the process of developing flavoured bananas.
  - Bio bananas are gaining market share. In 2002 the Dominican Republic exported 44,000t of bio bananas which equates to half of the global production at that time. That also represented an export growth of 80% compared to 1999. In 1999 the USA, Canada, Europe and Japan imported a total of 45,000t of bio bananas. A year later the same countries imported 75,000t. In 1999 bio bananas were 40% more expensive than conventional bananas. In 2000 this figure dropped to 30%. In 2002 this figure dropped to 20%. For the Dominican Republic in 99/00 was able to get an additional $2.5–$3 US Dollars per carton of bio bananas (Fruchthandel, 2002).
  - Dole is quoted as stating that “Dole has shifted its management attention from supply to the market side of the business, paying more attention to strengthening its distribution network and supply partnerships with the retail sector.”
- ## Mango
  - It appears fresh cut mango, if treated with a combination of hexylresorcinol, isoascorbic acid, and potassium sorbate (all food-safe compounds derived from natural products) assists storing slices in plastic containers to prevent browning and drying (Agricultural Research, 2000).
  - A Japanese company has launched a milk product, 30% milk and 16% mango puree, aiming to bring unusual combinations with fruit to the consumer as an alternative way to enjoy dairy products. (Dairy Industries International, 2004).

Selected Product specific developments ~ Tier 1

- **Melon**
  - Malaysia has introduced organic cube-shaped watermelons. The shape is achieved by growing it in a glass box.
  - Watermelon producers in South Carolina are growing mini-melons with Mohican, Sunseeds and Syngenta Pureheart, they obtain a premium price in supermarkets. *(Southeast Farm Press, 2004).* Mini-melons weigh only three to six pounds, fit in the palm of your hand and are just as juicy as traditional size watermelon but have thinner rinds and no seeds. *(Newsweek, 2004).*
  - Germany imported 246,000 tonnes of melons in 2002 which was an increase of 34% compared to 1991. Half of this quantity was watermelon. The marketing drive is that they are refreshing and rich in mineral trace elements *(Fruchthandel, 2003).*
  - Global melon consumption is rising by 4% per year. Consumption tables are headed by Spain (10.5kg per population), Italy (8kg per population) and France (7kg per head of population). Germany and Hungary 2kg of melons are consumed. *(Fruchthandel, 2004).*

- **Pineapple**
  - Dole has developed a pineapple display tray for 11 pineapple. Dimensions 40cm x 60cm and the Pineapple are standing up. *(Fruchthandel 2002*).
  - Brazilian researchers have developed a new pineapple variety called Gomo de mel which translates into "honey segments." Its two characteristics are a) it can be peeled as an orange and b) its near perfect cylindrical form means that very little fruit flesh is lost during processing. *(Fruchthandel, 2005).*
  - The trade looks at pineapple in two categories (yellow pineapple and sweet pineapple). In general 48% of world pineapple production is processed into juice or concentrate, a further 30% is canned. The remaining 20% of world annual production (1million t) is for the fresh fruit market. The fresh fruit market has increasing steadily since 1980. In 1995, fresh fruit made up 14% of world pineapple production.
  - The trend is definitely towards sweet pineapple consumption and increased fresh pineapple consumption (Fruchthandel, 2004).

Selected Product specific developments ~ Tier 2


- **Passionfruit**
  - A restaurant in DC substituted traditional rum with a mango-flavoured one, mixed it with sparkling wine and fresh passionfruit juice and called it "Passion." *(Restaurant Business, 2004).*
  - Knipshildt Chocolatier produced a 'ginger and passion syrup' for spicing up coffee, dressings, marinades, sauces & desserts *(Gourmet Retailer, 2005).*
  - Commercial users of juice and syrup are clearly valid target markets. Passionfruit is unlikely to succeed long term if it is only marketed as a fruit for fresh consumption.
  - Consumer and market awareness needs to be raised in terms of how it can enhance flavours of other products.
  - The name "Passionfruit" is too good to miss and the word-play appears to be under-utilised *(Produce News, 2004).*

- **Papaya**
  - A US milkshake company who offers products such as "green-tea" milkshakes and Latin-inspired smoothies consisting with fresh fruit such as melons, mangoes and papayas also uses papaya as a milkshake flavouring (Restaurant Hospitality, 2004).
  - An article in Fruchthandel 2002 discussed two related papayan marketing concepts aimed at increasing allocating floor space and stock turn. The concept emerged from the Brazilian papaya marketer Caliman International. A new shipping/display box ensures papaya arrive at retail in better conditions and require less handling. The cartons are more stable due to new design features and allow for greater air circulation. An inner layer prevents internal bruising as papaya no longer touch each other. The fruit is no longer wrapped individually in paper which was considered to be a potential transmitter of disease. Instead, the fruit is placed in moulds which keep the fruit in place. The outer box is designed to fit onto common retail displays. Each fruit is covered by an extended sticker that not only promotes the Caliman brand but also includes a PLU number, a barcode and an instruction for consumers as to when the fruit should be consumed.
  - In Brazil, papaya is close to being considered a medicinal product because of their protective effect on the digestive system. (Fruchthandel, 2002).

Selected Product specific development ~ Tier 3

- ## Custard Apples
  - Cherimoya are sensitive to extremes of heat and cold and, like avocado, can't be chilled before they ripen. Experiments with storage temperatures of 12ºC and 22ºC (normal room temperature) have been done to see if the ripening process can be delayed. At 12ºC ripening was delayed but the fruit produced less acid (which is a delicate component of the cherimoya's flavour) and there was more starch present, which reduces sweetness. It seems that storing fruit at 22ºC is better for fruit quality although shelf life will be shorter, while 8–12ºC is the ideal temperature to actually store and hold cherimoya (where they can be stored for approximately 14–28 days, depending on ripeness, variety and size) (www.cherimoya.orcon.net.nz).
  - The same website also reports that frozen cherimoya pulp, with the seeds removed by hand, is sold in Chile. A University of Chile researcher has now developed a cherimoya 10–15cm wide and weighing up to 1.8kg, symmetrical, easy to peel, seedless, with 25% more flesh than ordinary cherimoya. The only drawback being the large fruit were subject to cracking.
  - Wegmans, a speciality US based fresh food retailer markets cherimoyas as being free of cholesterol, low in fat and as a good source in Vitamin C. (www.wegmans.com).
  - Industrial fruit processor Tropico states that custard apples are widely used in juice drinks, beverages, baked goods, cereals, yogurt and ice cream and offers to process the fruit not only to demand but also at varying Brix levels, ranging from 12 degree for single strength juice to 50 degree for juice concentrate (www.tropico2000.com).
- ## Durian
  - Soap, Perfumery and Cosmetics (July 2004) advises the cosmetic industry is now investigating the benefits of using certain properties of Durian and Mangosteen fruits. Durian, "King of Fruits" has a distinctive odour and presence of monoamine oxidize inhibitors which significantly raise blood pressure; Harmane alkaloids; and Cyclopropenoid fatty acids in Durian seeds. Mangosteen as "Queen of Fruits" has the presence of xanthone in Mangosteen which also has health benefits.
  - A student from a Thailand University has come up with a process for turning dried Durian into a breakfast serial by applying the same superheated steam method used in drying paper, coal and wood to produce the dried-food product.

Selected Product specific development ~ Tier 3

- **Logans & Lychee**
  - Malaysia are using dried longan, which is perceived to nourish the qi (natural energy), to nourish ones blood, calm the mind and improve heart and spleen functions.

- **Mangosteen**
  - The Mangosteen market appears to be using fruit mainly for purees. Mangosteen has recently been produced for a whole fruit puree beverage. (Packaging Digest, 2004).
  - Mangosteens are generally offered to niche markets such as Japan and Harrods, in London where retail price is approximately one pound each.
  - Traditionally India, China, Malaysia, Thailand, the Philippines and Vietnam have used Mangosteen for health benefits which have previously been unknown across other parts of the world. **However, Mangosteen juice is now been promoted and making record sales in North America, the U.K., Australia, New Zealand and Japan due to its powerful anti-inflammatory properties for treatment of eczematous and hyperkeratotic skin conditions such as psoriasis.** It is also being produced as a tea in the Caribbean, for treatment of fatigue and low energy states. The main beneficial components in Mangosteen juice consist of (1) the beneficial antioxidants and (2) the medicinal properties of Xanthones (www.kntimes.com).

- **Rambutan**
  - The Dole Fruit Company Annual Report includes a word wide product list. This features Rambutan in Syrup, a Rambutan Snack Cup as well as a Rambutan with Pineapple Snack Cup. (www.dole.com).
  - An article in Produce News (2004) suggests that it is possible to grow Rambutan pesticide free in Guatemala and achieve organic certification. Marketing Rambutan in clamshells with four to five fruit per clam shell in the US market is discussed in the same article. Indicative retail price per clamshell is US$4.99. Foodservice operators are buying Rambutan in bulk for jelly, syrup and sorbet production.

Scope for application of growth & marketing options

- Profiled below is a matrix of the scope for application of the growth and promotional options identified. There are some common options that need to be seen for the platform they provide. They are Supply Chain Alignment and Assuring taste or sweetness benefits. These two options are enablers for other improvements and in combination provide the basis to evolve and deliver what customers and consumers will purchase.

	Tier 1					Tier 2		Tier 3					
Identified Growth & Promotional Options	Avocado	Bananas	Mango	Melons	Pineapple	Passionfruit	Papaya	Custard Apple	Durian	Logans	Lychees	Mangosteen	Rambutan
Supply Chain alignment	X	X	X	X	X	X	X	X	X	X	X	X	X
Assuring taste or sweetness benefits	X	X	X	X	X	X	X	X	X	X	X	X	X
Health marketing positioning		X					X		X			X	X
Energy marketing positioning	X	X											
Teach specialist retailers							X	X	X	X	X	X	X
Tasting program			X	X	X	X	X	X	X	X	X	X	X
Product samples to drive new users				X			X	X	X	X	X	X	X
Pre packaging for ID and promo info													
Packaging for entry level price point						X	X	X	X	X	X	X	X
Co-ordinated PR strategy	X	X	X	X	X	X	X	X	X	X	X	X	X
Alliances with other brands/products						X	X	X	X	X	X	X	X
Organic or Eco production benefits	X	X	X	X	X	X	X						
Global partnering for year round supply						X	X	X	X	X	X	X	X

Growth prospects and strategy priorities


- Profiled below is a high level forecast of growth prospects for the products covered in this project. In essence the tier 1 high volume products have some scope for growth. The lower volume tier 2 & 3 products, with the exception of Papaya and Lychee who have higher levels of awareness, will need to improve performance substantially to generate growth.
- It needs to be remembered that the domestic market will become even more competitive. Most fruits are expanding their production and investing to support in this additional volumes. Staples like Apples and Citrus are in decline and will invest to arrest this decline. These conditions are a significant external factor that will effect the growth of fresh tropical fruits.

Tier	Products	Growth next 3 years	Growth Strategy Priorities
1	Avocado	++	• Marketing maintenance support • Explore health/energy positioning • Develop and maintain supply chain partners
1	Bananas	+	• Marketing maintenance support • Explore health/energy positioning • Develop and maintain supply chain partners
1	Mango	++	• Align the fresh supply chain • Marketing initiative to increase local consumption • Develop and maintain supply chain partners
1	Melons	+	• Fresh market supply chain • Differentiation of "guaranteed taste product" • Develop and maintain supply chain partners
2	Pineapple	+	• Fresh market supply chain to ensure quality • Differentiation of "guaranteed sweet product" • Develop and maintain supply chain partners
2	Passionfruit	N	• Develop food service segments
3	Papaya	++	• Align the fresh market supply chain • Develop pharmaceutical/health use segments
3	Custard Apple	(-)	• Align the fresh market supply chain • Retailer education package
3	Durian	N	• Align the fresh market supply chain • Retailer education package • Develop pharmaceutical/health use segments • Tailor the product portion size • Align PR strategy
3	Logans	N	
3	Lychees	+	
3	Mangosteen	N	
3	Rambutan	N	

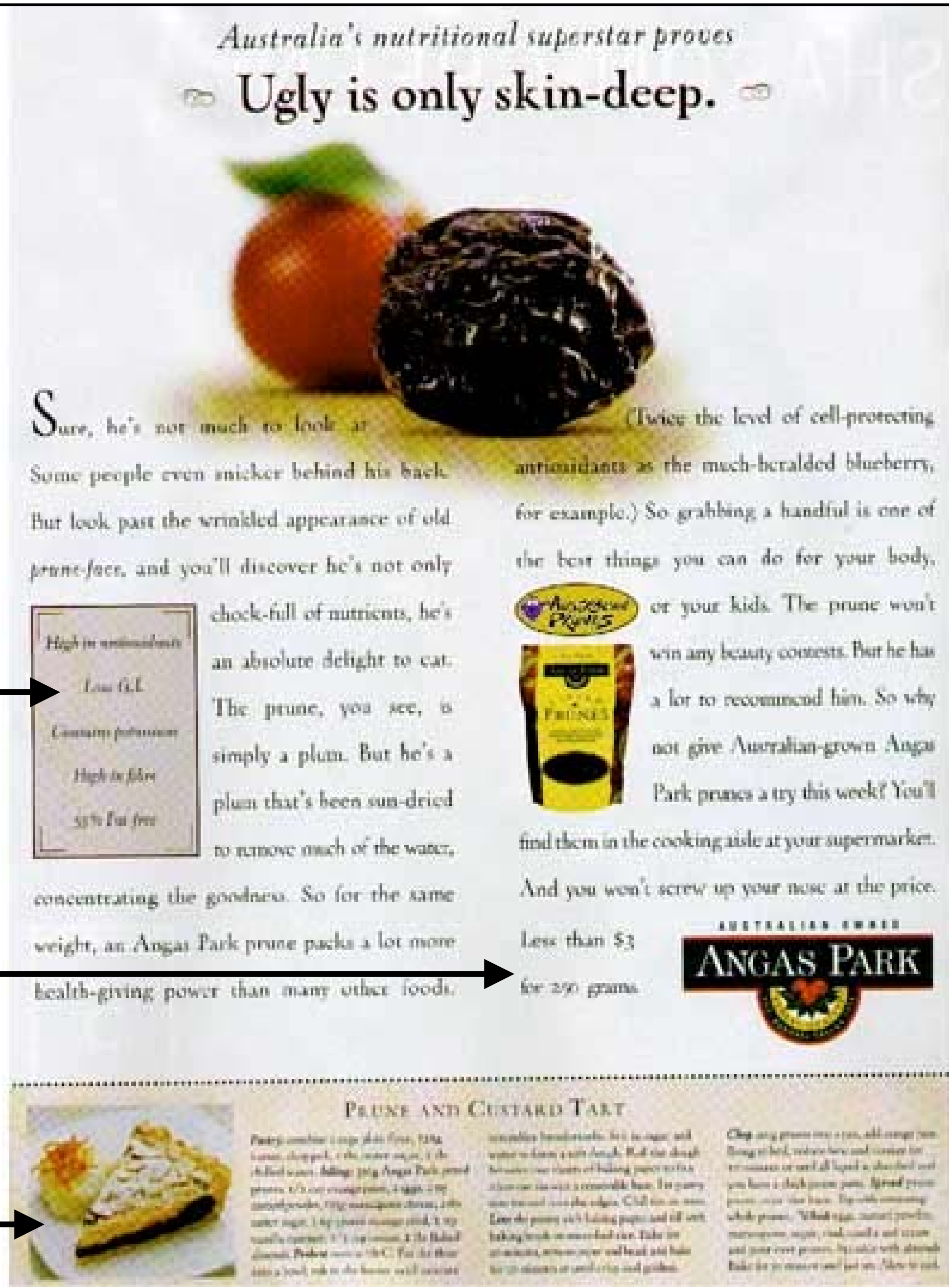
N = Neutral

- This report recommends that the wider definition of tropical fruits, as per the scope of the brief for this project, is not translated into a framework for how support is provided.
- This wider group of products are traded and perform very differently. They are at different stages of consumer and supply chain acceptance and require different types of support.

Domestic market example

This is an example of a product that is distributed on the domestic market. This products has adopted a combination of the growth and promotional options outlined in this report.

- Specific health benefit
- Packaged portion size and $3.00 entry level price
- How to use recipe



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