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APICULTURE STRATEGIES IN MALAYSIA: PLANNING IMPLEMENTATION

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INTRODUCTION

Basic Facts about Apiculture



Apiculture is the science of beekeeping. Human being deals with wild bee for more than 8,000 years, by collecting honey, as presented in rock paintings dating from 8000 to 15,000 years. The earliest recorded hives are seen in paintings and drawings on tombs and other monuments in Egypt, and the design spread and matured all around the Mediterranean (Gould, et al 1988). According to Chang et al (2003), beekeeping existed in China Since 1600 B. C. Feral bee colonies were kept in hand made cases. Hives exploit the honeybees' natural tendency to build nests in cavities, and allow beekeepers to easily transport and manipulate bee colonies. This mobility has enabled beekeepers to introduce honeybees around the world, except areas in which bees survival were threatened by extreme environment.

Primitive hives were made of hollow logs, holes built in mud walls, or cones of mud, earthenware, or thatch. Modern beehive is a series of stacked boxes, made up of wood, plastic or cement. The bottom box serves as the brood chamber where the queen actively lays eggs to develop new generation, and some space would be reserved for pollen storage, while the upper boxes provided space to store honey. Each box contains eight to ten frames. A space set in between



frames is called “bee space” – the optimum distance preferred by bees in a natural hive. Bees then produce wax to build honeycomb on the frames, which can be removed individually. When harvesting, the wax caps that cover each cell of the comb would be removed. Honey comb is then placed in a machine to spin the frames and draw the honey out by centrifugal force. The honey is then filtered and stored. Honey quality is determined by its flavor, clarity, and color.

Honeybees live in a matriarchal society, with a queen bee ruling a few thousands or up to 50,000 bees. A bee colony usually consists of 20,000 to 50,000 bees that perform special dances and release chemical substances to communicate with each other. Bees have developed elaborate social structures; they work cooperatively to maintain the integrity of a colony.

The queen, the only sexually mature female in a colony, is the leader of the bee colony. Her main function is to lay eggs. She can produce up to 2,000 eggs in a single day. During her lifetime (up to 3 years, depends on environment), million of eggs can be laid. Fertilized eggs hatch female bees, or called *workers*, while the unfertilized ones become males, or *drones*. A normal colony consist of more workers, and only a few hundred drones. The queen can determine whether to create fertilized or unfertilized eggs.

Although worker bees are female, but unlike the queen, the worker bees cannot lay eggs under normal circumstances because their egg-laying apparatus is modified as a stinger. A worker bee only lives about 50 days. Worker bees are always busy during their lifetimes - foraging for food, guarding the hive against intruders, building combs, hive cleaning, and producing royal jelly for queen and larvae.

Drones, the males in a colony, are bigger in size as compared to workers. They are excellent flyers and have keen sight and smell. Such abilities enable them to locate a queen bee in the broad sky during a mating flight. Since drones perform no other useful task than fertilizing the queen’s eggs, they are driven from the hive to starve or freeze to death when there is not enough food in a hive. They also die after mating from exhaustion and from the rupturing

of their abdomens (Morse, et al 1985).

Industry and Market Analysis

There are a few bee species that are able to produce honey, pollen, propolis, loyal jelly and other supplement products for commercial purposes. The Italian honeybee, *Apis Mellifera* is the default bee that beekeepers use. The Italian is generally considered the best general-purpose bee, and thereby is widely accepted worldwide. Italian bees are also the most common stock bee, and likely are the race to be found in packages or as unspecified breeds and queens for sale. Other production bees are *Apis Cerana* and *Apis Dorsata*, both commonly found in tropical countries in Asia. However, both are insignificant in the world of apiculture due to their inherent characteristic: low productivity, over aggressiveness and instability.

Number of bee hive is normally uses to analyse the respective country’s apiculture, or even the development of world apiculture. According to Food and Agricultural Organisation of the United Nations (FAO), world total number of bee hive in 2004 was 61,680,762 hives. Out of them, 19,001,048 or nearly 1/3 were located in Asia. Beside Asia, beekeeping in Europe and Africa were ranked no.2 and 3 respectively. World distribution of beehive is shown in Table 1.

World Top 5s Ranking	Bloc/ Country	Number of hives	Percent in World
1	Asia	19,001,048	30.8
	-China	7,201,500	
	-Turkey	5,000,000	
	-Iran, Islamic Rep. of	3,400,000	
	-Korea, Rep. of	1,871,648	
2	Europe	15,758,502	25.5
	-Russian Federation	3,409,000	
	-Spain	2,250,000	

3	Africa -Ethiopia -Kenya -Egypt	15,511,710 4,228,610 2,490,000 1,590,000	25.1
4	North and Central America -USA -Mexico -Canada South America -Argentina -Brazil	5,636,111 2,590,000 1,800,000 582,346 5,088,900 2,900,000 830,000	9.1 8.3
5	Oceania -Australia -New Zealand	706,091 360,000 324,590	1.1
	World Total	61,680,762	100

Source: Food and Agricultural Organisation of the United Nations (FAO), p. 31

Table 1: World Beehive Distribution, 2004

In term of country, China was the biggest player in the world (11.7%), followed by Turkey (8.1%), Ethiopia (6.9%), Russian Federation (5.5%) and Republic of Iran (5.5%).

In correlation with the pattern of bee hive distribution, the production of honey, the most important source of revenue for apiculture, also demonstrates a similar pattern. In 2003, world total honey production was 1.3 millions tons, among them, Asia, Europe and Africa contributed 38.4%, 23.4% and 14.3% respectively.

In Asia, major honey production countries were China, Turkey and India. These three countries contributed 80% of total Asia honey production, whereby China contributed more than 50%. In North America, USA, Mexico and Canada were core honey production

countries, contributed more than 90% of total area production. Whereby in Europe, honey production were evenly distributed among its member countries. Key production countries were Ukraine, Russian Federation, Spain, France, Germany, Hungary, Greece and Italy. For Africa, major production countries were Ethiopia, Kenya, Tanzania, Angola, Egypt, etc. In South America, honey production of Argentina contributed 70% of total area production, whereas among Oceania countries, Australia and New Zealand contributed 95% of area production.

World honey production increased steadily for the past 40 years. In 1961, total production volume was 679, 000 tons, shot up to 974, 000 tons in 1980, and hit 1.31 million tons in 2003. In term of country production, China ranked no.1 follows by USA, Argentina and Mexico. Honey production for these four countries contributed about 40% of world total honey production in 2003.

Gu et al. (2003) made a comparison study on bee productivity for China, USA, Argentina and Mexico. According to him, productivity of bees (in term of honey production) in China and USA improved gradually, from 16.02kg/hive to 39.04kg/hive for China, and 23.25kg/hive to 31.72kg/hive for USA, for period between 1965-2003. Adversely, productivity for Mexico and Argentina declined from 35.83kg/hive and 40.00kg/hive respectively, to 31.02kg/hive and 29.31kg/hive for the same period.

Year	World	China	USA	Mexico	Argentina
1965	16.15	16.02	23.25	35.83	40.00
1970	17.44	18.09	22.96	21.85	31.25
1975	16.28	19.24	21.48	27.36	21.18
1980	19.03	34.35	21.88	27.40	34.18
1985	17.29	22.39	15.72	17.50	33.33
1990	19.74	26.39	28.08	31.45	33.57
1995	20.59	28.31	36.05	24.61	38.89
2000	21.45	36.95	38.15	30.30	33.21
2003	22.13	39.04	31.72	31.02	29.31

Source: Food and Agricultural Organisation of the United Nations (FAO), p. 40

Table 2: Comparison of Honeybee Productivity (kg/hive) from 1965-2003 for Key Honey Production Countries

Market

Honey dominated world bee products market owing to its broad usage. There are basically two market segments for honey: the consumer market and the market for industrial honey, the former accounting for the bulk of honey marketed.

The food industry takes the largest share of honey in general. Honey is an important ingredient in all types of food: candy, bread, biscuit, snack, drink, or even as medicine. A large number of down stream products are derived from honey e.g. wines.

In line with the rapid development of world economy and raise in honey production, international honey trade had increases tremendously. Based on FAO statistic, honey cross boarder trade in 1961 was merely 74,467 tons, but shot up to 405,205 tons in 2002. Percentage of honey traded in comparison to total world production also boosted up from 11% to 31.7% during the same period. This phenomenon proves that international honey trade had brought significant effect to both honey production and its price.

Year	Export (Ton)	Export/ Total Production (%)	Export Price (USD/ton)
1961	74,467	11.0	256.3
1970	110,756	13.8	321.9
1980	211,434	21.7	1,198.6
1990	290,876	24.7	1104.5
2000	373,637	29.9	1175.1
2002	405,205	31.7	1718.7

Source: Food and Agricultural Organisation of the United Nations (FAO), p. 44

Table 3: World Honey Export and Average Price

Since honey had become an important trade commodity on the international stage, competitiveness among world exporters had drawn researchers' attention. Gu et al (2003) made a competitiveness study among world main honey exporters - China, Argentina and Mexico (contributed more than 60% of world total honey export since 1980an). According to that study, should price be considered as the single factor, apparently China is the most competitive exporter, since its export prices were much lower than average world export price. It was also observed that its price gap is getting wider, from –USD262.1/MT (1990-94) widen to –USD430.4/ton (2000-02). Adversely, Mexico managed to close its export price gap with world level, from -USD177.3/ton (1990-94) reduced to –USD38.9/ton (2000-02). It is expected that this price trends would prolong, and ultimately China would conquer bigger market share in world market.

However, it has to be agreed that price is not the only factor that affects honey competitiveness. Parker (2001) did a comprehensive competitiveness study on China, USA, Canada and Argentina. Among all, honey production cost, product quality and marketability were factors that have been evaluated. The study concluded that Argentina's honey was the most competitive one, followed by Canada, China and lastly the USA. The study showed that Argentina's honey scored the best in all factors, China loses out in both quality and marketability. Extremely high production cost in USA resulted in its honey competitiveness falling far behind the rest of the countries that were being studied.

Gu et al. (2003) forecasted world beekeeping industry and honey trade would bloom further, due to the raise of honey consumption. Their optimistic forecast was based on the growing favor among peoples towards healthy/natural food. The other contributing factor would be the growing intensity of free trade that would eventually depress honey price in global market.

Malaysia Current Status

Unlike Thailand and Vietnam, Malaysian apiculture is far

underdeveloped; although attempts had been carried out by the government to promote this industry since the 1980s. The rising importance of beekeeping has invariably increased responsibilities of the extension services in the bee-project areas. The services were intensified and strengthened due to the tremendous demand at the state level as early as 1984. Besides the Department of Agriculture (DOA), special-area extension services were also carried out by other agencies like the Rubber Research Institute Malaysia (RRIM), Rubber Industry Small Holders Development Authority (RISDA), Malaysian Agricultural Research and Development Institute (MARDI) and University Pertanian Malaysia (UPM).

The majority of local beekeepers are keeping *Apis Cerana*, an Asiatic species. *Apis Mellifera* is found in more established apiaries located in West Coast particularly in Melaka, Johor, Selangor, Negeri Sembilan and Perak. Generally, apiaries in Malaysia are running in small scale, scattered in suburbs and rural area throughout the country. The survivals of most apiaries are depending on tourism, where incomes were generated from entrance fees collection and selling bee products to visitors. Migratory/mobile beekeeping is less common in Malaysia although it generates income from honey and pollen collections, besides helping to achieve the fundamental aim of having hives strong and health, at the commencement of the nectar flow.

In Malaysia, beside *Apis Melifera*, honey is also obtained from species of *Apis cerana*. The amount of honey produced in Malaysia is very low as compared to world major producers. As a result Malaysia still imports large quantities of low grade honey from China, Australia and the United States.

State	Nos. of Beekeeper	Species of Bee	Nos. of Colony
Selangor	3	<i>Apis mellifera</i>	86
	14	<i>Apis cerana</i>	165
Terengganu	3	<i>Apis cerana</i>	34

Kelantan	1	Apis mellifera	26
	4	Apis cerana	70
Johor	5	Apis mellifera	230
	10	Apis mellifera	260
	15	Apis cerana	417
Perak	24	Apis cerana	373
Pahang	1	Apis mellifera	61
	1	Apis cerana	120
Melaka	2	Apis mellifera	2634
Kedah (Langkawi)	1	Apis mellifera	250
Total	79		4,726

Source: <http://agrolink.moa.my/pqnet/kwln/lebahmadu.htm>

Table 4: Malaysia Beekeeping Project

Total honey produced in 2002 was 118,801.90 kg. Average honey production per hive for various projects was 25.15kg for *Apis mellifera*, whereas *Apis Cerana* only produced 2.5kg per hive per year.

In Malaysia, there is another honey source collected from feral honeybee, *Apis Dorsata*. Honey hunting in Malaysia is an extra income source for villagers and native communities. Like other tropical countries, Malaysia's forest honey constitutes an important non-timber forest product, both as a source of food, tonic and medicine for local communities. Forest honey, though generally not traded across borders, constitutes an important economic resource in local economies. Unfortunately, dynamic deforestation of rain forest in Malaysia could impinge the lives of the giant bees, and of course, the activities of forest honey gatherers, hence the yield may decline (Buchmann et al, 1996).

The weather is probably the biggest single influence of bee nutrition, and hence bee productivity in the world. Rainfall is the most important aspect of the weather to affect beekeeping. In fact it is fairly

clear that honey production and rainfall are strongly correlated. This even holds true for the tropical country like Malaysia also. Heavy downpour drains away nectars, causes bee colonies to be unable to secure sufficient food, hence no honey storage. High humidity causes thin nectar to have difficulty to ripen and yeasts may develop in humid weather, spoiling the quality of the honey and causing a serious reduction in hive population.

Malaysia is endowed with various bee plants. According to a survey research conducted by Mardan et al (1985), of the 46 species of bee plants monitored at Selangor 21 species were major bee plants, 3 were minor bee plants and 12 were pollen plants. 33 of these species were found to flower continuously throughout the year.

According to ICRD, the development of Malaysia apiculture is limited by the following micro environment factors:

- a. Bee diseases. American Foulbrood (AFB) and European Foulbrood (EFB) are common diseases that attack *Apis Mellifera*. These diseases are caused by bacterium *Paenibacillus* larvae. AFB is lethal to bee colonies if treatment is not carried out. Only the spore of *Paenibacillus* larvae can initiate the disease and spores can remain viable on beekeeping equipment for an indefinite period. AFB may recur in a few weeks if the remaining spores are not destroyed.
- b. Parasite problem. The Asiatic mite, *Varroa destructor* is a major concern for local beekeepers. The mite causes the formation of deformed wings and legs in drone bees. These drones failed to emerge from the cells. Seriously infested colony would be absconded or dismissed.
- c. Wasps are commonly found in most areas foraging for nectar from flowers and feeding on rotten fruits. They are observed to occur seasonally in

- this country. In the apiary, wasps were not observed to be nuisance during dry periods when food is abundantly available. However, during rainy period and after fruit season especially in September and October, they are more commonly observed attacking colonies in large numbers. Continuous attack by wasps could weaken the colony and cause it to abscond.
- d. The red ant, *Oecophylla smaragdina*, is a serious pest of honey bees Malaysia. They build their nests on the trees. Normally they attack and carry the bee away to their nests and will eventually cause the bee colony to abscond.

The recent interviews with beekeepers and experts also revealed seasoning bird attacks are another major threat to Italian bees. Unlike *Apis Cerana* and *Apis Dorsata*, *Apis Mellifera* flies slower and higher, therefore, is more easily picked by birds when bees are out foraging for food.

Malaysia Market

Bee products retailing in Malaysia are characterized by different channeling, i.e. either through intermediary particularly departmental stores/retailing shops, or “direct from the farm” (B2C) model, where street vendors and producer/packer owned outlets are the major products marketing channels.

Market survey revealed facts about bee products selling in departmental store/retailing shop:

- No other bee products (bee pollen, bee wax, loyal jelly, etc) except honey are shelved.
- Most honey are presented with attractive packaging, and properly labeled.
- Selling prices are fixed; small discount may be

given by small retailing shops.

- Most honeys are indicated with country of origin, among all brands surveyed, no Malaysian produced honey is found.
- New Zealand and Australia's honey are priced higher than Vietnam and China origin. However, this is not homogeneous.
- Price range is extremely wide. Per kg price ranged from RM10.50 to RM216.00.

Brand Identification	Country of Origin	Packing	Selling Price (RM)	Per kg Price (RM)
Woodland's Manuka Act 4-9+	New Zealand	500g	67.90	135.80
Woodland's Organic	New Zealand	500g	108.00	216.00
Capilano 100% Pure	Australia	400g	11.50	28.75
Capilano EZ-Serve Pure & Natural	Australia	1000g	25.00	25.00
Sweet Meadow Wild Flower	New Zealand	500g	15.79	31.58
Lifestyle Honey Land Clover Honey	New Zealand	500g	10.99	21.98
Golden glory	Australia	1000g	11.99	11.99

Remarks:

1. Selling prices were collected from Giant Hypermarket, The Store, Eonsave, Guardian Pharmacy, Kedai Ubat dan Serbaneka Hai-O and Chinese Traditional Medical Halls located in Johor State during Jan/Feb 2006.
2. Prices listed were lowest price, if same honey was shelved in different selling points.

Table 5: Comparison of Selected Honey Retail Price at Major Departmental Stores

Farm or Owner Name	Location	Brand or Product Identification	Packing	Selling Price (RM)	Per kg Price
Madu Lebah Soon Lee	Air Keroh, Melaka	B-B Town Honey Propolis	1000g	35.00	35.00
		B-B Town Honey Dew	500g	60.00	120.00
Perniagaan Miss Honey	Ulu Tiram, Johor	Fongjian Mi	1000g	70.00	70.00
		Natural Honey	1000g	50.00	50.00
Ratu Lebah Bee Farm	Jalan Kesang, Muar, Johor	Star Fruit Honey	700g	38.00	54.30
		Royal Jelly Honey	700g	38.00	54.30
Dusun Buah-buahan Desaru	Desaru, Johor	Madu Asli	1000g	45.00	45.00
		Madu Tongkat Ali	1000g	75.00	75.00

Remarks:

1. One seller may have a few outlets, but with standardized selling price. Small discount would be given to regular buyers, or when purchased in bulk.
2. Street Vendor A and B have no static selling point. They were canvassing honey from one location to the other.

Table 6: Alternative Honey Retail Price under “Direct from the Farm” Model

Meanwhile, marketing of bee products through this model demonstrates high non-uniformity in term of product variety, packaging and marketing tactic. Features observed are:

- All sellers claimed they are either beekeeper or forest honey collector, and their honeys are “genuine and pure”.
- Products were claimed to be local products, or at least, to create such impression to customers.
- For more established selling outlets, other bee

products such as bee pollen, royal jelly, propolis or bee related products are also available.

- Honey is still the best selling item, but it was differentiated via flavor, grade, ingredient, nectar source, etc.
- Intrusive promotion by promoters is observed in more established outlets. Sometimes misleading statements were made by sellers to convince customers.
- Products packaging is vastly difference from one seller to the others, some were packed attractively and some were poorly packed, or even without product label.
- Honey price range from RM23.00 to RM120.00 per kg. However, mostly were priced at RM35.00 to RM75.00 per kg.
- Well established outlets are favorite tourism spots too; therefore, buyers were formed by tourists

In general, retail price for local produced honey is much higher, as compared to imported shelved honey. Price comparison showed that average selling price of the key bee product - honey, were sold 200-400% higher than imported honey. Theoretically, high selling price can be translated as high demand and/or short of supply. According to Kiew (1995), high selling price of local honey was due to shortage of supply. Local honey is believed to have special medicinal properties, thus, is preferred by local citizens.

Malaysia honey retailing market is a distorted one. Interview conducted shows that out of total 22 local consumers interviewed, 20 or 91% expressed their doubt on current local honey quality. This result is in line with study outcome of Mardan et al (1983), where adulteration of honey was found common in Malaysia market. Observation carried out in Malaysia famous bazaars - pasar malam/pagi or pasar tani found that some honey sellers even added dead bee

or honey comb to make the” honey” look more authentic.

However, in that interview, 77% or 17 respondents still prefer local honey rather than imported honey, if they were given the choice. It is very interesting that the majority of them were not able to explain why local honey is valued higher. The same interview also revealed all respondents have certain level of misunderstanding pertaining to honey, particularly in-respect of honey usage and methods to confirm honey purity/impurity. Observation carried out in various local honey sales points found that baseless claims were made by some of sales persons during conversation with customers too.

All races in Malaysia consume honey. The usages and unique parts of honey were written in bibles and classic books. The Al-Quran (Surah An-Nahl) mentioned that honey is a drink of varying colors, wherein is healing for men. The Bible, Isaiah prophecy (7:14-15) stated that when Jesus Christ was newly born, he was fed with honey. A Chinese classic written in 1861 has said that honey has five therapeutic functions – namely, to eliminate toxic heat, tone energy deficiency, de-toxicate, lubricate dryness, and relieve pain (Lu, 1990).

Malaysia is a net honey importer. Large quantities of honey were imported mainly from China since 1990s. Based on statistics obtained from Statistic Department of Malaysia, total 2, 521 MT of honey were imported in 2004, against 335 MT of export (including re-export). Nevertheless, it was strongly believed that out of the huge export incurred during 2002-04, a large portion was contributed by re-export. This is in view that in 2001, honey import was only 1, 940 MT, but shot up tremendously to 2,432 MT in 2002, skyrocketed to 4,904 MT in 2003 and fell to 2,521 MT in 2004. Remarkably, the export volume during that period also portrayed the same pattern, where in 2001, the export volume was merely 20 MT, suddenly increased to 1,338 MT in 2002, and hit the highest point at 3,829 MT in 2003. All these happened during the period which United State put on embargo on China’s produced honey in 2002, where China’s honeys were claimed contaminated with human hazarded antibiotic. The other reason is that domestic production of honey is unlikely

to boost up in such a short period (more than 10 times in between 2002/03 if all export honey were local produced). Reproduction of honey bee would take many years, and is unlikely to multiply within a year or shorter than that.

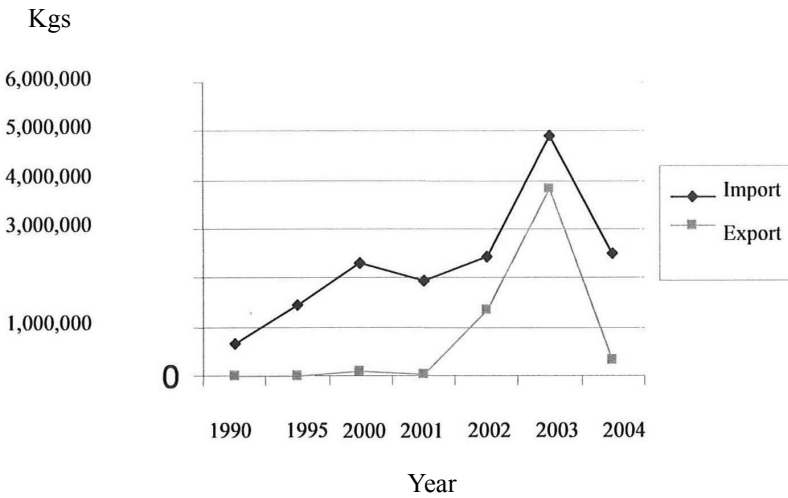


Figure 1: Malaysia Honey Import and Export 1990-2004

Price trend analysis shows that import price of honey in Malaysia were maintained and stable. Overall average import prices were floating in between RM4.62 to RM6.98 per kg. It was noticed that China was traditionally the largest honey supplier for Malaysia, and its price was much lower than other major exporting countries particularly Australia, New Zealand and USA. Average import price of honey (2000 to 2004) from China is RM3.27 per kg, whereas price of Australia, New Zealand and USA are RM8.95, RM16.87 and RM8.76 per kg respectively.

Honey export prices were showed to be steady also, ranged from RM4.65 to RM9.41 per kg, from year 2000 to 2004. However,

by comparing honey import and export prices year to year, it was noticed that for year 2003, average honey export price was lower than import. Other years although demonstrated some positive price gap, where export prices were higher than import, but the gaps were found insignificant. Nevertheless, it is possible if the exports were mainly re-exporting of China originated honey, which cost much lower than Australia, New Zealand and USA.

The market size of Malaysia natural honey is unknown; since no statistic is publishing for analysis. But if assuming Malaysia only produced very minimum amount of honey domestically, and depends on import as the principal source, then import and export figures of 2000 and 2001 can provides a very useful guideline. In 2000, Malaysia imported 2,294 MT of honey and subsequently 1,940 MT in 2001; whereas export remained very low level at 109 MT in 2000 and 20 MT in 2001. This means the variant between import and export (import – export) can be considered as domestic consumption, i.e. about 1,900 MT to 2,200 MT a year. This figure is further supported by FAO statistic, where it revealed that Malaysia honey consumption per capita for year 1999-2001 was 0.1kg/year, considering Malaysian population during these period was about 24 mil (FAO Food Balance Sheet, 2002).

It was also believed that a significant portion of imported honey was catered for further process as food ingredient. Those industrial consumers normally have higher consumption capacity; hence bulk purchase is likely to happen. Further more, honey as a food ingredient also permits more treated quality honey to be used, since further process would change or eliminate its quality features: color, flavor, moisture content, sucrose content, etc. Both factors would allow industrial users to be supplied with cheaper honey for low cost producers as compared to consumer market.

Strategic Decision for Apiculture Industry

Analysis and intuition provide a basis for making strategy formulation decisions. The matching techniques just discussed reveal feasible

alternative strategies. Kim et al (2001) found that this traditional business strategy forming method tends to converge along the same basic dimensions of competition, hence resulted to head to head competition based largely on incremental improvements in cost, quality, or both. They believed innovative companies could break free from the competition pack by staking out fundamentally new market space, i.e. by creating products or services for which there are no direct competitors. The model is named creating new market space, or blue ocean strategies.

The new model started with plotting value curve for existing products or services. It is drawn by plotting the performance of the offering relative to other alternatives along the key success factors that define competition in the industry or category. Figure 2 demonstrates the value curves of existing Malaysia bee products.

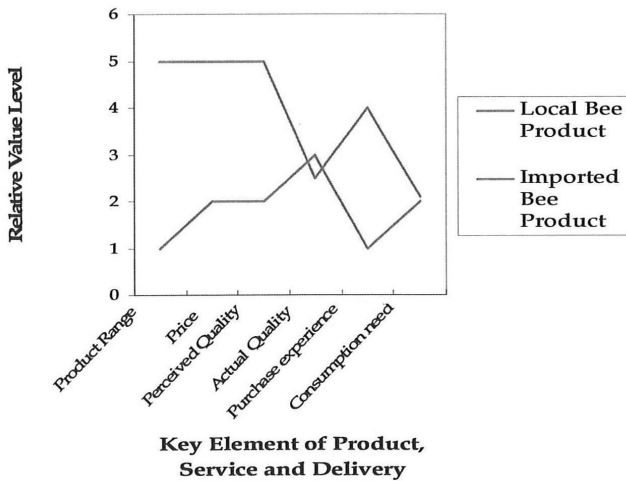


Figure 2: The Value Curve of Existing Malaysia Bee Product

The relative value level and key element of the product, or key success factors (KSF) were carefully examined, based on current market situation. For example, local bee products sellers have broader products range as compared to imported products sellers; therefore, product range (as one of the KSFs) is rated higher for the former. Consumers also perceived that local bee products are higher in value; hence, its perceived quality is placed above imported bee products.

To discovering a new value curve, four basic questions were asked, as shown in Figure 3.

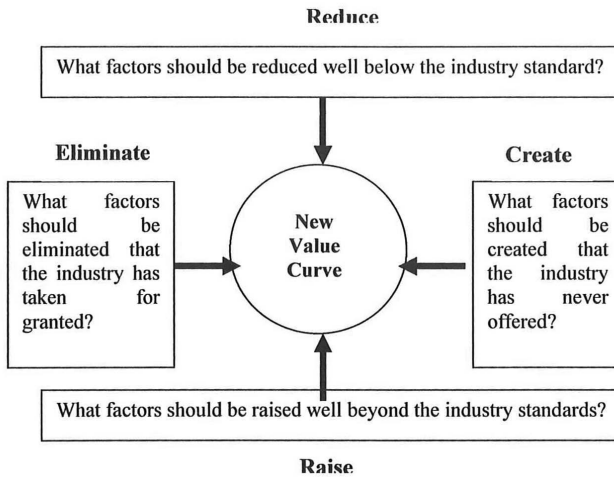


Figure 3: Model of Creating New Market Space

CONCLUSION

When strategy options are derived, and products value curve is formed, it is time for the company to decide what business strategies are to be pursued. The principle that the business must hold to assimilate both is; the strategies of choice must be able to sustain the business towards creating new market space. Therefore, strategy options that

developed and shown in TOWS matrix are mingled and phrased into four core business strategies:

- Strategy One: Establishes a modern apiary footed on localized beekeeping technologies; serves as production, promotion, R & D and beekeeping education centre.
- Strategy Two: Enhances company image as “second to none” premium quality local honey (key product) producer, and therefore; install strong brand name in domestic market place.
- Strategy Three: Enlarges market space by expand market boundary through reconstruction of products KSFs.

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