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Horticultural Crops Development Authority

Serving the Horticulture Industry

Content

Counter-Season Avocado In 2011 Exemplary Growthpg 1

South African production deficitpg 2

Quantity increasing and better quality in Kenya.....pg3

The Netherlands

Flower Auctions' Notes.....pg 4

IFTF EXPO is Ready for International HortiWeek.....pg 4

For Kenyan Export Papers - Just Log Inpg 5

MOTHERS DAY SALES Notespg5

Market trends (European Markets April 2011).....pg 7

Analysis April 2011.....pg 8



AVOCADO FAIR NAKURU NORTH DISTRICT REPORT

OVERVIEW OF NAKURU NORTH DISTRICT

VISION:

A globally competitive horticulture sector in Kenya.

MISSION:

To develop, promote, facilitate and co-ordinate growth of a commercially oriented horticulture industry through appropriate policies and technologies to enhance and sustain socio-economic development.

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Introduction

Nakuru enjoys a diversity of geographical and ecological features: to the South and adjacent to the town, lies Lake Nakuru National Park, wetland of global significance; to the West is the Mau Escarpment, a water tower of national importance; to the North is the extinct 8-12 km wide Menengai Crater, one of the largest craters in the world. Nakuru is the main town within the area of Nakuru County and the fourth largest in Kenya with around half a million inhabitants in 80,000 households. Nakuru is one of the main agricultural Centres of Kenya, surrounded by the vast and rich farmlands of Nakuru County.

Nakuru north district is a new district created from the larger Nakuru with its offices at Bahati centre. Bahati Division has an area of 564 km2 with four locations, 14 sub-locations and 37,000 households. The estimated population density is 282 km2.

The division has a high potential for horticultural production due to reliable rainfall. This favors production of horticultural crops like flowers and fruits which include avocados, strawberry, tree tomato and bananas plus a wide range of vegetables which include ama-

ranth, a coriander (dhanian). Other crops with high potential are beetroot and okra that are grown on the lower part of the district. Export vegetables like snow peas, garden peas and French beans are also grown and marketing is done through contract farming to the exporting companies.

Tomato production is also done targeting the local market though a small percentage used to be sold to Kabazi Cannery (an affiliate company of True Foods Company Nairobi) that of late is not operational. Greenhouse tomato production has also risen in the area. There are also potentials for value addition of the above products.

Avocado production is major agricultural venture in the region since every homestead has one or two avocado trees that are local varieties and much of top working has to be carried out to improve on the varieties. A few farmers have the improved varieties i.e. fuerte and hass and are linked to the market through Sabeen Exporters.



To promote the production and marketing of avocado in the Nakuru county region HCDA in collaboration with other stakeholders organised a branded show in Nakuru. The venue was at a prominent avocado farmer by the name Benjamin Wainaina in Bahati on the 4th April 2011

Theme: Promotion of New Technologies in Avocado Production, Post Harvest Handling And Utilization.

OBJECTIVES	OUTCOMES	REMARKS
To promote new technologies <ul style="list-style-type: none"> • Crop variety diversification • Water harvesting 	Planting of the required varieties- i.e. fuerte and hass. Water harvesting to be done during rainy season.	Most farmers have the local variety, so need to diversify and need to have water pans
Linkage to the buyers	One exporter present in the area explained to the farmers on the export market requirements and the importance of quality and quantity of the produce.	Many farmers decided to plant the avocado fruit tree since there is a ready market.
Plant clinic	Farmers were shown how to dig the hole-3ft x 3ft and how the soil mixes are done. Pests and diseases identification was emphasized by the MOA and the chemical companies.	Some farmers have always dug small holes for the avocado seedling. Pest/disease identification is now easier for the farmer.
Value addition on avocado fruits	Demonstration on how to make avocado juice was done by one of the service provider and emphasis was put on the avocado lotion and hair treatment. Avocado oil pressing machine was also demonstrated by the ATDC group	Farmers were interested in the value addition techniques, more so in the machine
Avocado quality production	Grafting of the fruit seedlings was	The farmer has registered

OBSERVATION

- The fair was very educative to the farmers and stakeholders since it was held at the farm level and one could see the avocado orchard.
- Low prices and lack of market information were the major marketing problems experienced by most farmers
- Other marketing problems facing farmers during marketing of avocado included damages when ripening, unreliable market, lack of transport facilities and lack of support in marketing.
- Damages when ripening originated from the poor harvesting methods used by farmers. Farmers prick the fruits which then fall off the hard ground. During ripening, the fruits begin to rot from the side in which they fall on the ground.
- Despite all these problems, some farmers do not experience marketing problems, as they sell to middlemen, local markets and to exporters.

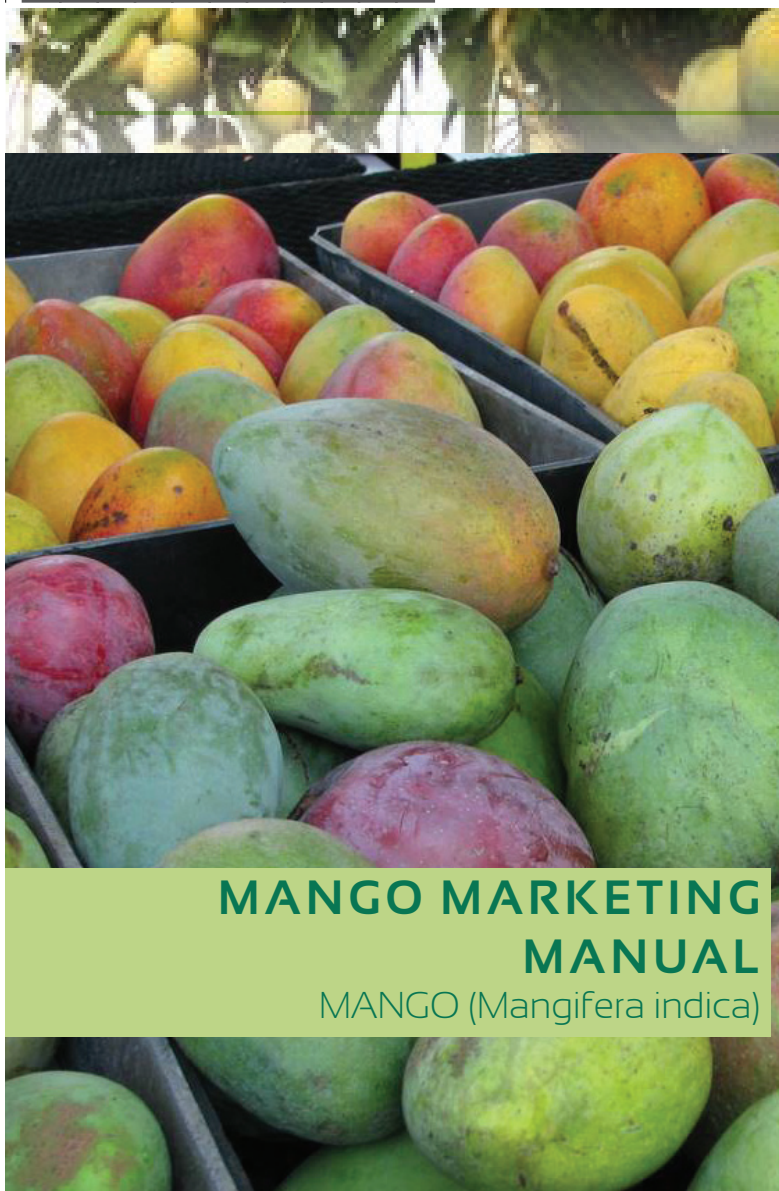
CHALLENGES

- Major challenges noted were lack of transport facilities, low prices, lack of market information and damages/rotting when ripening.
- Production and marketing
- Information on avocado is lacking or distorted resulting to exploitation of farmers.
- The farmers lack information and experience on the marketing dynamics of the avocado and the horticulture in the region.

CONCLUSION

The Farmers in the region are willing to plant the new varieties of avocados and also agreed to do top working of the traditional varieties. Marketing of the avocados is crucial for increasing the available money in the farming sector. The Avocado fair was very successful and the major objectives were actually met.

There is need for HCDA and other stakeholders to aggressively promote the production and marketing of avocado in the Nakuru county as an important source of income for the farmers.



MANGO MARKETING MANUAL

MANGO (*Mangifera indica*)

Family name: Anacardiaceous

INTRODUCTION

Mango is native to Southeast Asia from India to the Philippines and was introduced to East Africa in the 14th century. Currently, most mango exports, including small quantities of green immature mangoes (for pickles), are sea-freighted. The main market for Kenyan exports is in the Middle East countries. Other markets include Holland, U.K, Belgium, South Africa, Germany and France. Other exporting countries are Brazil, Pakistan, India, South Africa and Mexico, which compete with Kenya.

The world trade in mangoes has been increasing over the years, and both exports from Kenya and local consumption is growing. The world market continues to become more price-competitive. Production in Kenya has also expanded with new planting of bright colored varieties.

Tommy Atkins	Azacus	Batawi
Van dyke	Zill	Dodo
Keitt	Nimrod	Sabre
Kent	Irwin	Peach
Apple	Haden	Sensation
Matthias	Ngowe	Maya
Kensington	Boribo	Sabine
Parvin		

DESCRIPTION

The mango tree is erect with a height of 10 to 30 m with a broad, rounded canopy, which may with age attain 30 to 38 m in width. In deep soils the taproot can reach a depth of 2 m. The leaves are alternate and borne mainly in rosettes. New leaves that emerge periodically and are yellowish, pinkish, deep rose or wine-red and turn dark-green, glossy above, and lighter underneath on maturity. The fruits are oval, ovoid-oblong, kidney-shaped or nearly round. The skin is waxy, smooth, fairly thick, aromatic and colour ranging from light/dark green to clear yellow, yellow- orange, reddish-pink or grayish-purple when ripe. Some fruits varieties produce a turpentine odour and flavor. The fruits produce flavored juice that ranges from sweet to sub-acid in taste.

VARIETIES

Popular varieties for the Middle East markets are the Apple and Ngowe, while European markets prefer Tommy Atkins, Kent, Keitt, Haden and Van Dyke.

Description of selected varieties

Tommy Atkins

Fruits are oblong-oval, medium to large with a thick skin. The colour ranges from orange- yellow to dark/light red. The flowers are purplish in colour. The flesh is of medium fibre, good quality and the flavor is poor if over- fertilized and irrigated. It is an early producer and has a long shelf life. The fruits weigh between 400-600g

Keitt

The fruit is rounded oval to ovate and the colour ranges from yellow to light red when ripe and between 450-800 g. The flower is lavender- like and colour ranges from yellow to red. The flesh is orange to yellow in colour, fibreless except near the seed and sweet -flavored. The tree is small to medium and very productive and matures late. Ethylene treatment enhances colour of the fruits when applied during post-harvest.

Kent

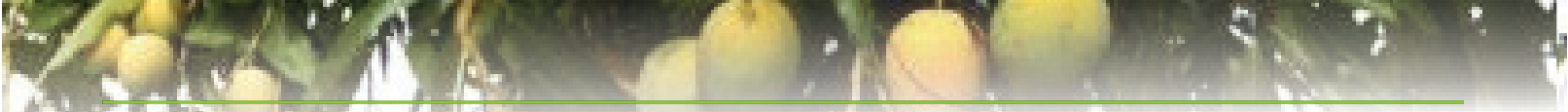



The fruit is ovate and the colour of the skin is greenish-yellow. The flower is grayish in colour. Fruits mature late, the last in the season and are large weighing 600- 900 g especially from young trees. Older trees tend to weigh less (500-750 g) due to fruit load on the tree. The flesh is fibreless, sweet and has good flavor. It is susceptible to black spot disease. To enrich the skin colour, ethylene treatment is required.

Haden

The trees grow large and spread widely and produce medium size fruits (400-600 g), which are juicy, moderate in fibre and very attractive in color. This variety is susceptible to anthracnose and is a medium early season variety, harvested around January and February.

Sabine

This is a local selection with attractive elongated fruits weighing about 500 g. The fruit is orange, yellow or red in colour and matures in January and February.



Vandyke

The tree yields poorly and suffers heavy fruit drop. The fruits are small in size (300 g), have attractive bright red colour, good internal quality and medium firm skin. Their maturity period is January and February.

Apple

This variety is adapted to coastal and lowland areas, and is very susceptible to rust in high altitude areas. Fruits are large, round and apple-shaped, and have rich yellow-orange to red colour. They are fleshy, juicy fibreless and with firm texture and matures early in the season between November and January.

Ngowe

This is also a coastal variety, but can also be grown in medium altitude areas. The fruits turn yellow, although retains green colour when mature.

Parvin

This variety produces good quality fruits, medium to large size fruits (400-600 g) and matures mid late between February and March.



left on the fruit, which is later reduced to about 1 cm during final packing. A sticky secretion (latex) oozes out of the cut stalk, which if any adheres to the skin of the fruit, stains it, and renders it unattractive. It will also reduce its shelf life. The effect of latex flow immediately on cutting the stock may be reduced by draining the fruits over leaf ribs on the ground rather than washing them in water.

Caution

When picking mangoes it should be kept in mind that latex is caustic and can inflict serious eye injury.

Yields

The first yields can be expected about three to four years after planting if grafted/ budded mangoes are planted. The orchard reaches full maturity within six to eight years and yields can increase gradually for 20 years. A mature tree can yield 400 to 600 fruits/year. About 15t/ha can be obtained if regular and intensive orchard maintenance is provided. Alternate bearing is common in mangoes so yields will fluctuate from season to season.

Field handling

Picked mangoes should be carefully placed in smooth wooden or plastic containers to avoid physical damage. A major concern at this stage is avoidance of mechanical damage and sun exposure. Always use clean containers.

Collection Shed

Location of the shed should be accessible to both the farmers and marketers. The design of the shed should have a level of flexibility. Floor should have well designed layout that allows efficient interaction of facilities or activities. This reduces the floor area requirement as well as time and labour costs. It also allows easy cleaning and other activities.

Personal hygiene is important and hence facilities such as toilets and clean water should be at close proximity. All workers should maintain high standards of personal hygiene. Smoking, eating or chewing is prohibited.

Portable clean running water source should be availed and appropriately marked and placed to facilitate hygiene in the premises. It is vital to test water for microbial and bacterial contents regularly and records for chemical treatments safely kept. Disposal system of any waste including all the rejects should be environmentally acceptable. Loading and dispatch area should be very clean and firm enough to facilitate easy accessibility of any vehicle or operations.

Quality control facilities, procedure, standards and records should be availed per produce type to enhance quality. These

ECOLOGICAL REQUIREMENTS

Altitude

Mangoes grow well up to 1,500 m above sea level. However some varieties mainly Sabre, Peach, Tommy Atkins, Kent, Van Dyke and Keitt are adapted to altitude of up to 1,500 m above sea level, while Apple and Ngowe grow well in areas below 1000 m above sea level.

Temperature

Mangoes do best at an average annual temperature between 15 °C and 30 °C. Growth slows down and fruit quality decreases with decreasing temperatures

Suitable Growing Areas

The most suitable areas for the cultivation of mangoes are the Coastal areas, Lake Victoria region, Murang'a, Thika, Kajiado, Meru, Isiolo, Taveta, Lower Embu, Machakos, Kitui, Mbeere, Meru, Makueni, and Kerio Valley. If irrigation is available during plant establishment, mangoes can be grown in drier areas.

Maturity/ Harvesting

Harvesting starts three to four years after transplanting. For distant export markets, fruit should be harvested at the mature green stage. Maturity is determined by distinct skin and flesh colour changes and an increase in sugar content. Several methods exist for determining ripeness. However, the characteristics of each mango cultivar must be taken into account, when using the general indicators:

- Shoulders should be well developed.
- Skin colour changes from green to yellow.
- Colour of flesh. The area around the seed turns from white to yellow.

There is no method that can be universally applied to all varieties without modification. Fruits are harvested by hand (where they can be reached from the ground), by ladders, or by tree climbing. Picking poles with a bag or basket attachment are also used. It is recommended that fruits should be clipped from the tree in such a way that approximately 3 to 4 cm of the stalk is



facilities include waste buckets, decomposition pit, quality assurance rulers, coolants, tables, etc. A charcoal cooler should be provided in the storage room before dispatch.

Sorting

This is done manually at farm level.

Cleaning

This is done mechanically and manually at the pack-house.

Post-harvest Treatment

The two major post-harvest diseases of mango are anthracnose and stem end rot. Combining hot water and fungicidal treatments, controls anthracnose. Successful control of anthracnose is achieved by dipping the fruits in a fungicidal solution at temperature between 51.5 and 55°C for five minutes. Fruit damage can occur at high temperatures.

The effects of hot water treatment are reduction of skin shine, damage of the lenticels, and an increase in fruit temperature. Rapid cooling can reduce temperature.

Also, there are several surface waxes available in the market, which can be used to improve fruit appearance and reduce weight loss.

Grading

Mangoes are normally graded by hand according to the required size, colour and texture.

Packaging

Mangoes for export are packed in single layer fibreboard cases, and are occasionally wrapped in tissue or packed with vertical dividers to make the mangoes firm and prevent damage during transportation. The number of fruits per carton ranges from 6 to 24 with gross weight of 4 to 5 kg. For the domestic market, they may also be packed in:

- Nets
- Pakacha

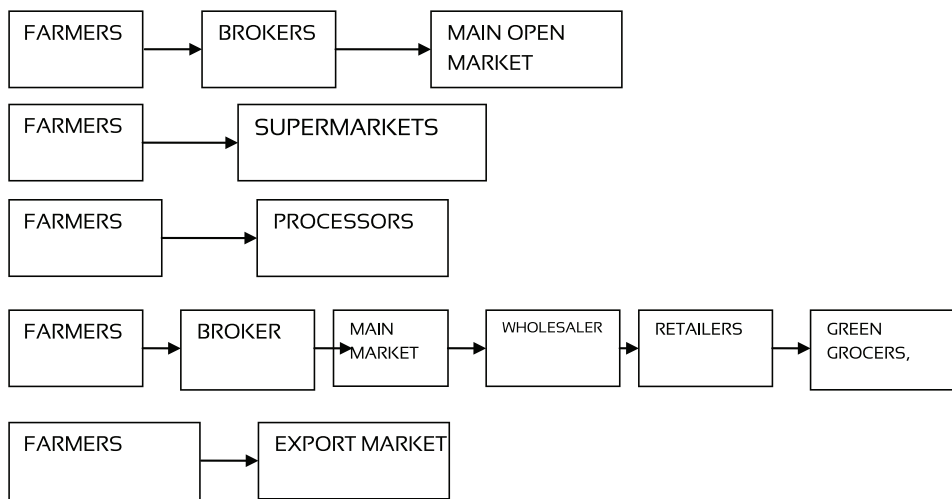
However, there is flexibility to meet the customer specifications.

Storage

Mangoes are sensitive to chilling injury, which can impair ripening and result in poor colour and flavor development. Recommended optimum storage temperatures for mangoes vary for different varieties and ranges between 5.5°C and 15°C. Most varieties can be stored at temperatures between 10°C and 13°C with relative humidity of 85% to 90% for a storage period of between two and four weeks.

MARKETING CHANNELS

Producers sell using various channels:



Orders

Orders are usually done by telephone, fax, e-mail, text message and walk-in. Issues to be considered include:

- Quantity
- Quality
- Packaging
- Date of delivery
- Outsourcing to meet orders when there is shortage
- Collecting unsold produce for other uses

Price Determination

Prices are determined as per demand and supply and therefore may change daily. In addition variety and seasonality also influence the price. Prices may also vary in the different production regions.

For the export market, buyers may have agreed on prices earlier although the prices may still be influenced by market forces.

Quality Standards

These are based on appearance of the product:

- o Sound, whole and mature
- o Firm and have stalk up to 1cm in length
- o Free from foreign smells and tastes
- o Free from unhealed injuries, blemishes and traces of latex on the skin
- o Fibre content typical of variety
- o Fruit typical of variety size and shape
- o Uniformly sized fruits

For the domestic and export markets, standards provided for by the Kenya Bureau of Standards (KEBS) and other local authorities, as well as other market requirements for example, GLOBALGAP should be complied with.

Enforcement

Various enforcement agencies play their roles to ensure standards are complied with. The institutions include HCDA, KE-

PHIS, PCPB, KEBS, Ministry of Health, among others.

SWOT Analysis

Strengths

- Favourable climate
- Flexibility in production
- Flexibility in packaging
- High product reliability
- Skilled labour
- Established market
- Private public partnership

Weaknesses

- Pests and diseases
- Slow adaptation to technology
- Poor infrastructure
- Relatively high transport costs
- Unstructured local markets
- High cost of production
- Fragmented production units
- Inadequate knowledge on production and marketing

Techniques

- Poor post harvest handling
- Poor coordination by service providers
- Distribution
- Shortage of planting material

Opportunities

- Market preferences
- Increasing demand for the product

- Ability to expand production
- Value addition for the local market
- Increased consumption

Threats

- Barriers to trade
- Competition from other suppliers
- Dynamic markets
- Classification as a developing country

Domestic Markets

- Unstructured local markets

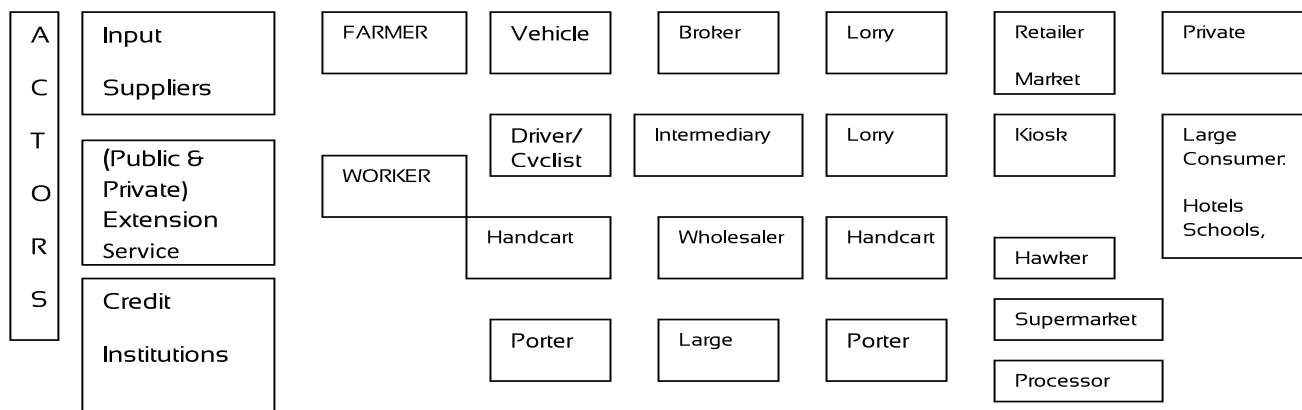
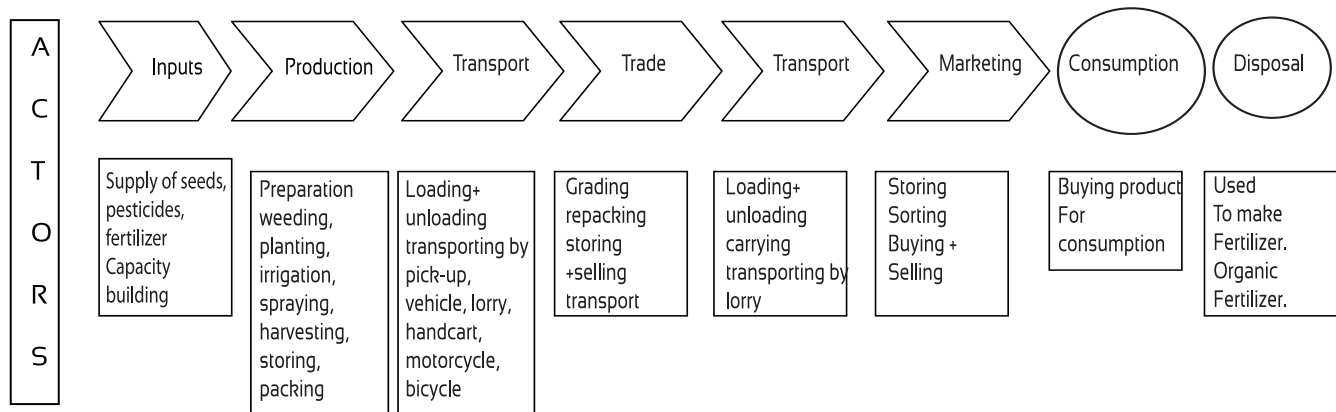
Constraints

- Competition
- Fragmented production units
- Weak farmers groups (mistrust and dubious loyalties)
- Poor post harvest handling
- Price fluctuations
- High freight charges
- Bureaucracy
- Inadequate investment policies
- Unstructured markets
- Unhygienic and congested physical markets
- Longer period to recoup investments

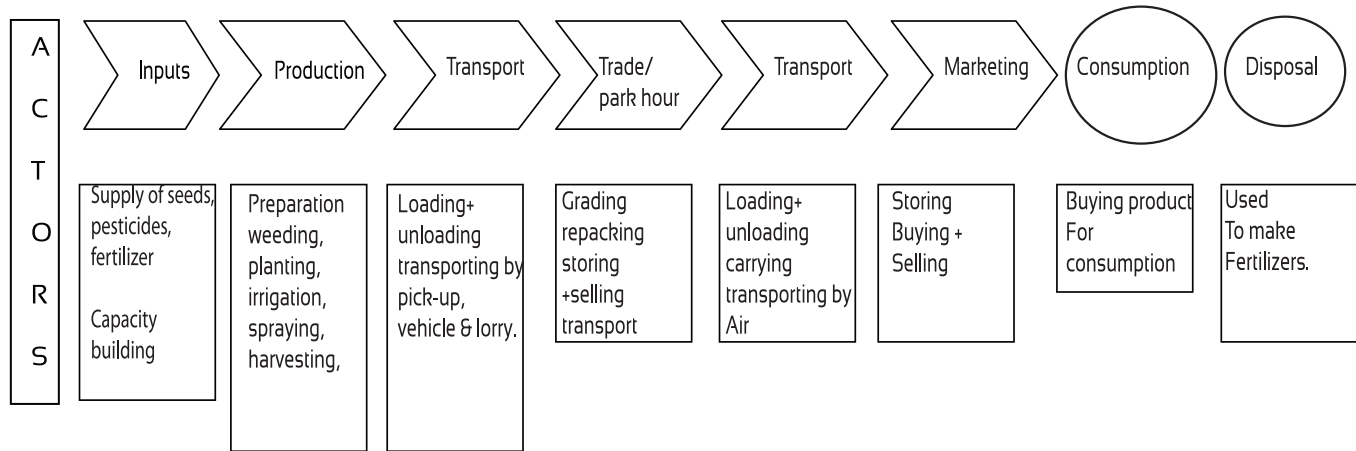
Recommendations

1. Provision of more technical advice to players
2. Provision of more cooling/cold storage facilities in order to maintain the cold chain
3. Exploring more opportunities for mango exports

LOCAL ACTORS AND THEIR FUNCTIONS



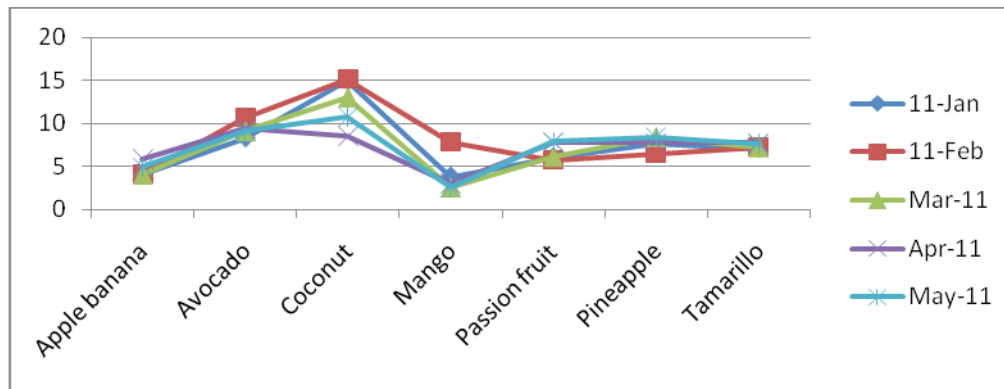
INTERNATIONAL ACTORS AND THEIR FUNCTIONS



Analysis April 2011 Fruits

	11-Jan	11-Feb	Mar-11	Apr-11	May-11
Apple banana	4.142	4.125	4.125	5.835	4.94
Avocado	8.32	10.725	9.1	9.4	9.125
Coconut	14.947	15.15	13	8.48	10.85
Mango	3.83	7.875	2.625	3.04	2.565
Passion fruit	6.07	5.75	6.15	7.845	7.935
Pineapple	7.75	6.45	8.41	7.7	8.445
Tamarillo	7.16	7.25	7.26	7.705	7.705

The weight of export of product is packaging of 9*330 for apple banana, 4kg ctn by sea for avocado, 4kg ctn by sea for mango, 2kg ctn passion fruit, 2, 5 kg ctn. Avocado prices went up by 2.405 Euro i.e. 28.906%, mango prices also saw a high increase by 4.045 Euro i.e. 105.025%.

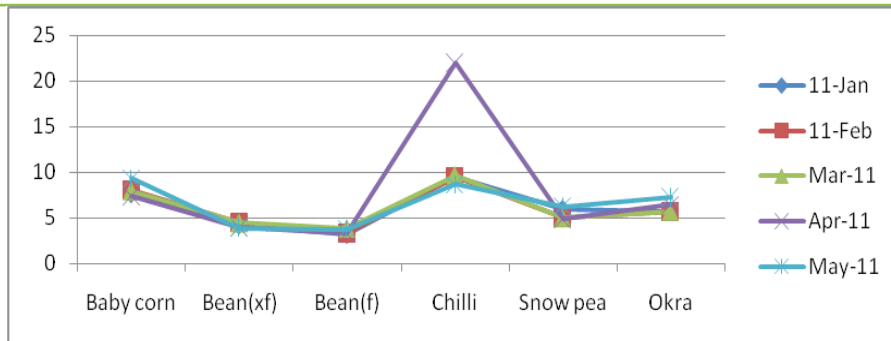


The prices of fruits remained relatively stable with slight increases and decreases in price being seen. Mango decreased by 0.475 Euro i.e. -15.625% in May 2011 from June 2011.

Vegetables

	11-Jan	11-Feb	Mar-11	Apr-11	May-11
Baby corn	7.62	8.04	7.89	7.425	9.3
Bean(xf)	4.17	4.52	4.38	4	3.925
Bean(f)	3.13	3.3285	3.76	3.3	3.735
Chilli	9.535	9.495	9.585	21.995	8.625
Snow pea	5.965	5.01	4.93	4.815	6.22
Okra	5.67	5.65	5.65	6.425	7.245

The weight for export are packaging of 12*125 for baby corn, 2.0-2.5kg ctn with prepacks of 12* 250 for beans(xf) and beans(f), for chili packaging is 12*100, snow pea 2kg ctn and okra is 1.8-2kg ctn. Baby corn saw an increase of prices by 0.42Euro i.e. 5.51186% while chillies saw a decrease by 0.04Euro i.e. -0.41%.



The prices of vegetables saw increases in prices for most of the vegetables in May 2011 from April 2011. Snow pea and okra prices increased by 1.405 Euro i.e. 29.179% and 0.82 Euro i.e. 12.762% respectively.

Market Trends

European Markets May 2011(Week 18)

Markets are steady in practically all countries. The spring has been sunny and dries which avoided the crop damages registered in previous years and generated concerns of possible droughts during the summer. The market entered the marketing season for local products; stone fruits and local production vegetables are largely present in supermarkets and wholesale markets. Demand is very low for all products, apart from asparagus (for which nevertheless prices are low), strawberries (which are obtaining good prices also due to a good quality crop) and, to a lesser extent, stone fruits. The European summer will be, as usual, a nonpeak period for exotics, a part from traditional items and summer products. The market circumstances that might seem unexplainable should be attributed to the unbelievable general economic context we are crossing which is hopefully expected not to create further market distortions.

Avocado: demand tended downwards considerably due to increased competition with season fruits. Prices of hass are diminishing, also because of increasing volumes. The situation is even more difficult in the green segment where sales remain slow and supply is above the average; prices are low.



Ginger: prices decreased considerably especially for the Chinese product as there is large availability but small sales. The price range is huge.

Grapes: while the marketing season for India develops, the first air-freighted grapes from Israel (early sweet and sbs) are on the market. The stocks of overseas fruits are coming to an end. Sea freighted grapes from Israel are expected in week 22-23. years average, depending on size and packaging.



Mango: small availability and relatively high prices for sea freighted fruits. The price range is large depending on fruit quality. Lower prices for air freighted fruits from West Africa.

Limes: demand is very low. Prices decreased considerably and scarcely reach 1 Euro/kg.

Melons: the offer of melons from Spain is spreading. End of season for the overseas products.

Okra: quality problems for Mexico, high prices for Nicaragua.



Coconuts: quality problems for the product from Ivory Coast.

Papaya: small volumes and high prices on the market for both air freighted and sea freighted fruits.



Cherry tomato: large availability and prices considerably low.

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