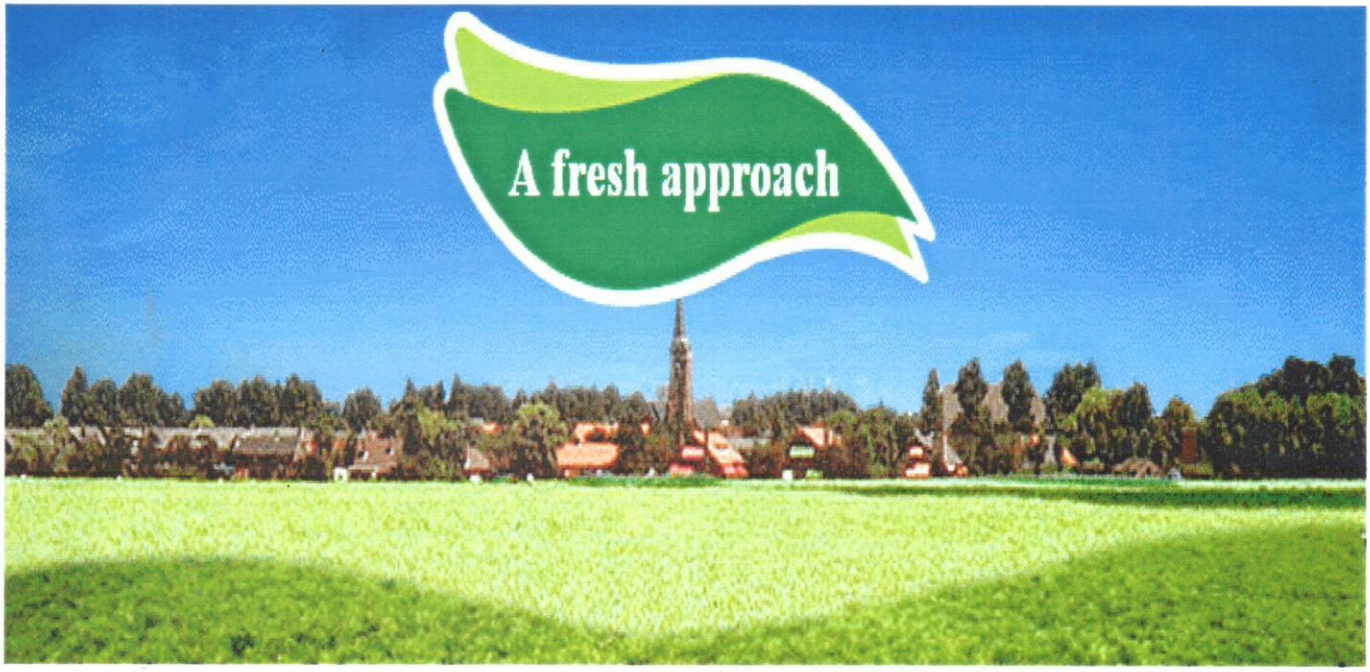
Agricultural Marketing

Marketing opportunities for Kitui District in Kenya: Learning From the Dutch System



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Summary

This project paper focuses on the Dutch agricultural marketing and its possible application to Kitui district. In Holland, marketing mechanisms for agricultural products are: -

- The auction,
- The greenery
- Contract mediation
- Fair trade
- Organic farming

These marketing mechanisms cannot be wholly applied in Kitui because Kitui is structurally different from Holland in several aspects. In Kitui the farmers are small scale compared to the Holland scenario where most farmers are large scale. Infrastructure in Holland is quite well developed and this makes it possible for the transportation of products from the farms to the markets and eases the flow of market information from the farmer to the market and vice versa. In Kitui the infrastructures are not well developed and hence makes it difficult to transport products from the farm to the market especially during the wet season.

Labor in Holland is mechanized while in Kitui the labor is manual and mostly provided by the family and sometimes hired. In Kitui labor is very cheap which is an advantage to the farmers as this reduces the production costs.

Marketing of agricultural products in Kitui is organized individually and farmers sell their produce individually, unlike in Holland where farmers form farmer associations and the rest produce on contract basis. In our study therefore we recommended that the farmers should come together and pool their produce so that they can attract buyers or else search for market together and as a result buyers are ensured of a steady supply.

Quality control systems in Holland are well organized and this helps the Dutch farmers to keep their customers by providing them with high quality products. In our study we therefore recommend Kitui farmers to be trained on how they can produce quality products that can compete not only in the local market but can be able to meet the standards in the international markets.

For any meaningful agricultural activity, farmers should have adequate capital investment. To empower Kitui farmers we recommend that the financial institutions can be encouraged to come up with farmer friendly credit facilities.

Further research is needed with setting of scenarios as the objective so as to determine the quantitative and qualitative potentialities. This can be done in conjunction with partners who are being interested in the agro-business in Kitui. This can be in dried peas, cowpeas, green grams, beans and maize. It can also be in fresh and/or dried fruits and vegetables like mangoes, tomatoes and bananas.

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1. INTRODUCTION

1.1 Positioning the study

Abstract.
Kitui is one of the arid and semi –arid districts in the eastern parts of Kenya. The district extends for roughly 200 km from the north to south and 120 km from east to west. The area is 20,555.74 square kilometers with a total population of above 640,304 people (the figures are for the 1989 census). The area experiences an average rainfall of 600 mm – 1000 mm per year. The rainfall fluctuations are sometimes so great that it is impossible to carry out meaningful predictions. Due to failures in rain the area is characterized by varying periods of drought and famine. Under such scenario a need of sustainable water supply crops up.

SASOL (Sahelian Solutions) Foundation.
SASOL is a non-governmental organization based in Kitui involved in local community development projects. For the last ten years through participatory approaches, a record of 323 sand dams has been achieved. Sand dams are water barricades across dry riverbeds, which trap and prevent water from going down stream. They are ground water reservoirs. Sand dams are advantageous over other means of providing water in the arid and semi-arid areas. They are cost effective and provide water for both production and domestic purposes. They are not prone to high rates of evaporation since the water is under sand. Also the water is not open for easy contamination and pollution..

Socio-Economic Impacts
The area has recorded great improvements in agricultural production. Yields have gone up while new varieties have been introduced. The area that was importing vegetables from other markets has now become a supplier of sukuma wiki (kale), tomatoes, onions etc. Grain production (maize, beans, pigeon peas, green grams, millet, sorghum etc) has also increased. Planting of fruit trees has also gone up with mangoes, oranges, lemons, passion fruit and avocados being the major potential fruits. Other kinds of soft and hard wood trees have also been propagated. Time used for searching water has reduced and converted to other social and/or economic activities. The trade offs and spill offs have led to improved health and education levels.

1.2 Objective and Approach

Due to lack of systemized sustainable marketing technologies the local farmers end up being exploited by middlemen and traders who take advantage of the situation. More still the farmers end up with losses due to waste, poor storage, poor means of transport, poor insemination of marketing information and lack of sustainable markets.
From the same premise we drew our interest to study the Dutch agricultural marketing mechanism, its great success and innumerable failures and be able to come up with a workable cost effective, and situation tailored marketing mechanism for Kitui district Kenya.
The approach constitutes literature review, Internet web search, field interviews and discussions with farmers, food industries, marketing experts and any other reliable person(s).

1.3 The Relations Between The Two Systems

Complicated and high technology equipments characterize the Dutch agricultural sector. The farming systems are of large scale and highly specialized. Most of the major steps are accomplished using machines. This can be realized in the stages of seed propagation, land preparation, planting, weed and pest control, nutrients application and harvesting. This is extended further to other additional requirements and processes like drying, value addition and packaging. Good infrastructures, roads and well-equipped and specialized transport companies explain the success of the logistics. Farmer associations, cooperatives, auctions and the Greenery link the farmer to the wholesalers and supermarkets and ultimately to the consumer. The link is a network of efficient and effective information flow.

The Kitui scenario is a situation whereby farming is of low scale and highly mixed type. Manual work and family labor contribute to the participation. Poor roads, poor transport means and poor communication means contribute to the logistics failures. This ultimately leads to poor markets and inadequate marketing information.

Comparing the two systems will show close relations in the mode of production whereby both are environmentally friendly, use low or no chemicals and fertilizers and have high potential for growth hence surplus for sale is eminent. This raises the need to learn from the Dutch agricultural marketing mechanism, get what can suit
Kitui and employ it there.

2. AGRICULTURE IN THE NETHERLANDS

2.1 Types Of Farming

The Netherlands is a leading agricultural producer and the third largest agricultural exporter in the world, after the United States and France. Statistically agriculture covers an area of 2 million hectares and in 1999 the total number of farms were reported to be 103,000.Although agricultural labor force is scarce, the sector employs 4% of the total labor force in the country.

The agricultural sector can be characterized in five types. Table 2.1 shows the types and respective percentages in total coverage.

TYPE	%
Cattle	56
Horticulture	21
Arable Farming	14
Fruit Growing	5
Mixed Farming	4

Table 2.1: Types of farming in the Netherlands[1]

Glasshouses or Greenhouses?

According to the Worldwide Directory of Agrobiologicals a glasshouse has been defined as a building fabricated largely of glass (or transparent plastic) supported by metal or wooden struts providing a light, enclosed and sometimes controlled environment for the growth of horticultural crops, soft fruit, salad vegetables, tomatoes, succulents, pot plants and cut flowers. Due to cost considerations in commercial productions, plastic tunnels may replace glasshouses. The structures provide warmth (with protection from frost) humid conditions enable the plants to be nurtured through provision of nutrients and possible supplementation of heat, light, carbon dioxide (tomatoes), mineral nutrition and micronutrients by thin film or foliar application. Unfortunately, the same conditions which favor good plants plant growth are also attractive to various insects and other plant pests and diseases.

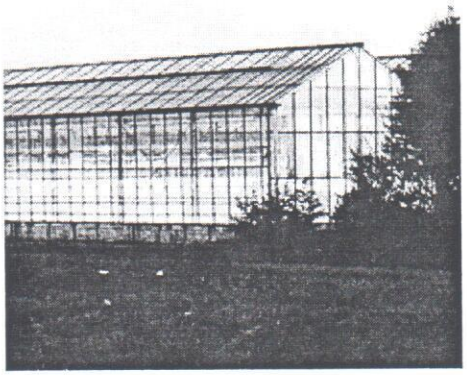


Figure 2.1: Glasshouse or greenhouse?

[1] Source: FAO/ITC/CTA 2001

Location

The agricultural areas between The Hague and Rotterdam popularly known as the westland and western part of the country around Amsterdam Airport are important for glasshouse production. There are also other large production areas in the east and southeast parts mostly in the North near Assen and the South near Eindhoven.

Crops

Glasshouse horticulture is responsible for a quarter of the total vegetable production in the Netherlands. The three main crops are sweet peppers, tomatoes and cucumbers. Other vegetables grown on a small scale are; radishes, aubergines, courgettes, chicory, lettuce, fennel and gherkins.

Fruits are also gown in glasshouses. The common fruits to get are; apples, pears, plums, cherries, strawberry, red currants, grapes, peaches and melons

Flori- culture, the cultivation of flowers is another sector that is flourishing under glasshouse farming. Roses, carnations, lilacs, and lilies are the common plants. The Dutch floricultural Wholesale Board is knowledge center, which provides information on the sector to interested parties and mediate between partners.

Organic Farming

Compared to the rest of Europe, The Netherlands has been lagging behind in organic farming. Since the early 1990's the government has been putting a lot of emphasis on organic farming. There has been increased financial and technical support to farmers willing to convert to organic farming from the traditional conventional agriculture. The major pivotal point is to reduce systems with negative environmental and bio-diversity impacts.

The main production area is in the center of the Netherlands covering the polders of the province of Flevoland (area around Lelystad) and the main producing cooperative is Nautilus with total land acreage of 5,000 hectares under production. Of the total 2 million hectares of agricultural land only 1.4% (27,820 hectares) is under organic farming. Also in spite of the government creating consumer awareness on the consumption of organic products only 1% of the total consumption is in organic products

In the beginning of the 1990's organic products were only sold through specialized shops. Consumers bought the products direct from the farm or through subscription. It was not until the second half of 1990's were these products introduced into the supermarkets. Until then the supermarkets were selling conventional agricultural products only. To combat the stiff competition displayed by the supermarkets the specialized organic products shop merged together and formed a chain of small supermarkets dealing with organic products only; the NWO (NatuurWinkel Organisatie)

The export market consumes more of the organic products with two thirds of the total produce being exported to England, Germany, Denmark and Sweden. Only a third of the organic produce is sold locally. The main local outlets are the supermarkets, green grocers, specialized shops, farmers' shops and subscription shops.

Figure 2.2: Labor is expensive in Holland, so farming is very mechanized even organic farming

Livestock breeding

The Dutch dairy sector is the main backbone of livestock keeping. Milk and other dairy products like cheese, butter, cream, yogurt, chocolate etc. Accompanying the dairy sector is the beef sector, which is the major supplier to abattoirs and meat processing industry. Sheep, pigs, poultry and goats form part of the livestock breeding.

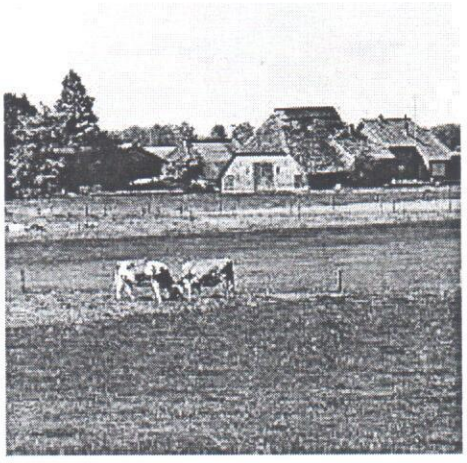


Figure 2.3: Livestock in Holland with on the background a traditional barn

Fisheries

Marketing and Agriculture The main branches of commercial fishing in the Netherlands are sea and coastal fishing. There are also shellfish culture, freshwater fisheries and aquaculture. An efficient and modern fleet of trawlers and inshore vessels carries out sea and coastal fishing activities. The inshore fleet fishes for sole and plaice, cod, whiting, herring and shrimps in nearby fishing grounds, mostly in the central and southern part of the North Sea. From the economic viewpoint flatfish fishing is the most important branch of fisheries in the Netherlands.

The trawler fleet fishes for herring, mackerel and horse mackerel in the North Sea, and particularly in more distant water. Shellfish culture occurs largely in the waters of the province of Zeeland and in the Wadden Sea. Mussel culture is the most significant branch. Cockles are also fished commercially.

In the context of the Common Fisheries Policy of the EU annual catch quotas are allocated to prevent stocks from being depleted. The Dutch policy aims to improve a responsible fisheries based on sustainability. In implementing this policy the focus is on the distribution of responsibilities in fisheries between the industry and the government and on the relation between fisheries and nature.

2.2 General marketing Mechanism

Globalization, consumer concerns and increased competition press farmers and food producers to enhance product innovation and to seek more efficient production and distribution structures. Contract production and systems of vertical coordination are replacing spot markets.

[2]In the Netherlands, vertical integration in marketing of agricultural produce and products has taken the following forms: -

- Auctions
- The Greenery
- Organic farming
- Fair trade
- Contract farming

N.B: The above mechanisms will be discussed in detail in chapter 3.

Dutch Consumers

Increasing use of modern technologies in agriculture and food production and market saturation in affluent societies have led to a growing consumers' interest in the methods used to produce food. More and more consumers pay attention not only to the product quality but also to the processes used in manufacture ("process quality"). They would like to know more about how their food has been produced. Many consumers are concerned about the production methods in modern agriculture and in the food industry. Against this background it is important to know how consumers perceive the production methods: What are public beliefs associated with the food production of today? What are the determinants of these beliefs and how do they affect consumer behavior?

The Dutch consumers are switching on to products that have been produced in conditions that are environmentally friendly; use less or no chemicals and fertilizers. Also much emphasis and support is put on production lines that protect humanity. Products from countries and/or companies that violate human rights are boycotted. Child labor and violation of labor laws is discouraged under such control.

The ability of retailers to deliver on their promises is a key issue for consumers in The Netherlands. This is particularly when it comes to factors such as pricing, return policies, and out of stocks. The retailers should ensure that there is adequate supply of the product(s) and rarely run out of stock. The importance that Dutch consumers place on values such as honesty and respect is apparent and understanding the importance of

[2] Source: Martinez and Reed, 1996

honest pricing is crucial for Dutch retailers that choose to focus on price as their primary attribute.

"We sell our products at honest and realistic prices, as well as focusing on very competitive special offers", Johan Van de Werken, head of marketing, strategy and research for supermarket operator C1000.

Dutch consumers are also sensitive to services like returns. They prefer to return unconditionally products they are unhappy about. The return should be quick and hassle free. In addition to this, the product(s) should be consistently of good quality and access oriented – easy to find.

The Dutch food market is relatively saturated and this will lead to a further concentration in the food wholesale and retail trade. It is clear that consumers benefit from the intense competition among supermarket owners. Dutch consumers react quickly to special offers and low prices. Special sales for meat, fruits and vegetables and cheese motivate consumers to hunt for a good buy and visit more than one supermarket.

In 1993 a popular topic in food retailing was "the environment" and in 1994 "price consciousness." Although in 1995 and 1996 "packaging and environment" is still an important issue, "fun shopping and adventure" appeal very much to consumers as well.

Case Study Albert Heijn

With about 700 shops and a market share of roughly 28 percent of the food and daily goods market, according to the "European Retail Handbook 2001/02,"

Albert Heijn is one of the leading Dutch retailers, so it's not surprising that it would be named as the favorite supermarket by close to one-third of the respondents in the Netherlands. The company believes that its success is based in large part on a corporate strategy that focuses first on experience and second on product.

The Albert Heijn experience is all about establishing a sense of closeness to consumers by providing them with answers to their everyday question: "What shall I eat today?" The company offers answers through such unique vehicles as its *AllerHande* in-store publication, which features information about products, Lifestyles and recipes using items sold in Albert Heijn stores. The retailer also offers an unusual savings account as part of its Bonus card program.

Instead of having a discount subtracted from their bill, customers can choose to open a savings account. The discount is then applied to the account, and customers can access their cash through the in-store kiosks. The retailer's secondary emphasis on product is supported by large assortments, high quality, innovative products, both low-end and high-end private labels, a strong focus on food safety, and a large selection of ready-made,
take-home meal solutions. To ensure that its product offering meets the ever-changing needs of consumers, Albert Heijn conducts what it calls "operation pit-stop" every three years to reset the store and category layouts.
Finally, Albert Heijn completes its strategic framework by maintaining market parity on the attributes of service, access and price. In terms of access, for instance, the stores maintain a consistency of layout, making it easy for shoppers to find what they need. And on price, the company provides value for the money, with prices that are not the cheapest but that are in accordance with Albert Heijn's image.

3. DETAILED DESCRIPTION OF MARKETING MECHANISMS

3.1 Auctions

Definition[3]

The auction market is whereby traders transact directly against the orders of other traders by communicating through a single centralized intermediary. Auctions form the most links between the grower and the glasshouse vegetable trade. Most of the growers in the Netherlands do not sell the products themselves, but belong to one of the auction cooperatives. Membership of the auction implies that the growers must sell all their products through the auction. This means that the product flows for fruit and vegetables are concentrated at the auction market, so an optimal price can be formed.

History

Before the formation of the auctions all farmers sold their products on the markets by themselves. The literature says that the first vegetable auction of the Netherlands was established in 1887. During the first decades of the 20th century each town or region with professional horticultural production set up its own auction. For instance field interviews suggest that in Pijnacker the first auction was formed in 1915 and the farmers used their boats to transport their produce to the auction. In those early years of auction history, the main reason to establish an auction was dissatisfaction among growers with traditional sales structures that were insufficiently equipped to exploit the opportunities of the growing demand in Western Europe [Van Stuijvenberg, 1977;Ter Woorst, 1987]. In 1934 an` auction law` was enacted, as part of government measures to alleviate the effects of the economic crisis. This law contained a legal obligation to use an auction for selling Dutch fresh produce. In 1945 the total number of fresh produce auctions reached its top with 162 [Fontein, 1987:202].

According to research done at the Erasmus Research institute of management [ERIM, 2002:126] it was found that after the Second World War, the number of auctions gradually declined, due to mergers of local and regional co-operatives. The most rapid decrease in total number of auctions occurred after 1965, when the auction law was abolished. In 1995,one year before the establishment of VTN/The Greenery, the total number of auctions had declined to 20. In 2001, only six independent co-operative auctions for fruits, vegetables and mushrooms remained.

Objective of the co-operative auction

The ultimate goal of the co-operative is to increase the income of its members. It does so by improving the market position of growers and enhancing the price determination process.

Functions and organization of the traditional auction co-operative

The main functions of the traditional auction co-operative were price determination, sales administration, logistics, and quality control.

All auctions were established as grower-owned co-operatives Growers were to gain by improving the sales process. The market position of the individual grower was weak because of the relatively small quantity he offered for sale, perishability of the products and his lack of market information. By collectively offering for sale the products of many growers and by using an auction as the price determination process, the working of the market between sellers and buyers is enhanced. In this case the market function of the growers farm is delegated to the co-operative auction. Because the market function is derived from the on-farm production function, growers maintain control over firm that organizes the auction. The sales process functions best if growers use the auction for their

[3] Horticulture in the Netherlands report, Ministry of Agriculture, Fishery and Nature Management

total production. Therefore, co-operative auctions have a statutory delivery obligation for their members, which come with decision-making rights over auction policies. All members of the co-operative hold these rights collectively. Consequently, the strong interest of growers in proper working of the auction, the involvement of a large number of growers, and the interdependency relationship between market function and production function made the grower-owned co-operative an efficient way of organizing the auction.

The auction clock and the auctioneer

The auctions have continued to improve as the production and competition increases. There are people who specialize with confirmation of the quality of the products brought to the auction. They use the sampling procedure, that is, they take some samples of the products check and record the situation of the product. The bidders [buyers] always go for the best and are ready to pay more for the best, however, if they are not careful they might end up in paying more for the good. With the Dutch auction decreasing bids [price start high and is gradually reduced], the bidders always choose how high to bid without knowing the others decision as it is the buyer who is supposed to react first.

Auction is a game whereby as the announced price is progressively lowered, the possibility of a gain emerges but the probability of securing the gain diminishes, as a result the product goes to the bidders who are risk averse as they are always anxious to win[4]. All in all the prices are determined by the price in the auction clock. Therefore, in this case for the fruit and vegetable customers especially the large supermarket chains, a large proportion of vegetables are now sold through their agents. Then the supermarkets can be sure of more or less constant price and are less dependent on daily fluctuations. The produce for green grocers and market and door-to- door traders also largely depend on the price at the auction clock.

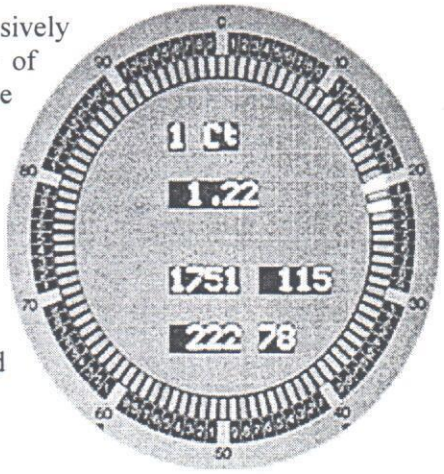


Figure 3.1: Auction clock, the numbers show the price, quantity, buyer and seller

Formation of the greenery[5]

	1970	1980	1990	1995
Growers of:				
Open field vegetables	34,166	16599	12,454	10,243
Greenhouse vegetables	13,583	7,862	5,652	4,686
Fruit	10,000	6,964	5,183	4,475
Mushrooms	1,100	823	853	704
Auctions	88	55	28	20
Auctions turnover (million euro)	1,790	1672	2,167	1668
Exporters	213	157	165	185

Table 3.1: Structural change in the Dutch vegetable and fruit industry[6]

[4] Eric van Heck, Erasmus University, Rotterdam. www.fbk.eur.nl
[5] www.thegreenery.nl
[6] Source: VTN [1996]

The Dutch horticultural sector enjoyed huge success for many years, export rose and the domestic consumption of fruits and vegetables increased year by year. The situation changed dramatically in the late 1980s leading to increased competition especially from Southern Europe, from the table above, it is clear that the auction turnover was still growing in the 1980s but then it fell from 2.1 billion euro in 1990 to 1.6 billion euro in 1995 therefore this shows that the auction had become inefficient in marketing the fresh fruits and vegetables, so the solution was to combine forces and as such in the year 1996 the Greenery international B.V was formed. It became the distribution, sales and marketing company of fresh produce and its shares are owned by the horticultural cooperative of horticultural food[7]. It was established after the merge of nine of the eleven auction houses dealing with fruits and vegetables and the central bureau of Dutch horticultural auctions. In the year 2001, it changed its name to the Greenery B.V.

Besides the already mentioned advantage in competition there are more reasons for a merger. Consumers ask for easier products like cut and packed lattice and supermarkets ask for packing with their mark on it. Supermarkets also want verse products, so it should be delivered in the right quantity. To achieve this communication is important between producers and buyers. The Greenery can supply a constant quantity every day and the buyers have only one contact address, which is very efficient. The last reason is that the promotion of vegetables and fruit is arranged by only one organization.

Organization of the Greenery

The Greenery is controlled by the central board of management with three members actively involved in operational implementation of business activities and a number of business units, which help in product collection, supply and processing in addition to the business activities. The business units are the greenery operations, the greenery UK, the greenery Netherlands and the greenery international.

The sales operations department that is a part of the business unit greenery operations manages the commercial organization of the greenery. This department harmonizes the activities of various components of the commercial organization. It also maintains close contact with representatives of growers from the various product groups so that the greenery gets the information it needs to make supply forecasts and set prices.

Objective of the greenery

The major objectives of the greenery are:

- To sell the products of 3000 member-producers.
- To draw their produce to the customers' attention.
- To ensure a healthy future for the Dutch food sector.

The greenery aims at becoming the final customers preferred supplier. It targets the large retailers in Europe, North America and Far East. It also targets whole business, hotels and catering industry and the food services business. Throughout the year it tries to provide its customers with a complete range of both domestically grown and imported vegetables, fruits and mushrooms. The greenery manages to attain its objectives because of its logistical organization and extensive marketing support, like promotion through advertisement, exhibitions, leaflets and organization of visits of foreign buyers.

[7] Voeding Tuinbouw Nederland, VTN

Success-factors

An important reason for the success of the Dutch auctions is the cooperative base:

1. The auction is of and for the members
2. The auction is intermediary between grower and trader, so it does not trade itself.
3. The auction anticipates accurately when the markets change. This requires vision and coordination of members and traders. Besides that creativity is needed to use new formulas to take advantage of the changes.
4. Auctions and members should trust each other. Therefore the auctions can react sharply on market-situations, but with the interest of the members in mind.

Roles of the Greenery

It plays a major role in the provision of market for the member growers. The member growers are always sure of ready and sustainable market for their fruits and vegetables. This is so because they cultivate all their products with great skills to satisfy the strict quality, environmental and food safety requirements. That is, according to the guidelines of the quality control systems.

The greenery also imports the products, which cannot be produced in the Netherlands probably due to the climatic circumstances. For instance tomatoes and pepper cannot be produced in winter so are imported during winter, exotic fruits also like pineapples cannot be produced in the Dutch farms hence are imported from the warm tropical countries. The greenery does not perform the importation itself but the member growers transport their products to the greenery where the buyers are ready to buy their products. Most of the tomatoes from Spain going to Germany first come to Holland, because of the logistical advantages of centralized distribution.

The greenery also exports to more than 60 countries with the European Union, Eastern Europe, North America and Japan, as are the most important markets.
It supplies a total range of fresh fruits, vegetables and mushrooms. In some cases in the overseas markets a number of special products are supplied such as pepper and vine-tomatoes and this is achieved by the method of tracking and tracing,

The greenery also develops quality control and certification systems for its grower members for instance harmonizing with the EUREPGAP system developed by European retailers, GZS [greenery quality system] and Milieukeur [environmental hallmark]. See also section 4.5.

Price determination in the greenery

The traditional auction used clock as the mechanism for price determination. However, for the greenery to respond to the changing demands from growers and customers, it has applied an alternative price determination mechanism. It has set up an internal agency for contract mediation to facilitate direct contracting between growers and wholesalers. The mediation agent brings together supply and demand, makes sure that essential information is transferred between seller and buyer, and makes the final deal on behalf of the grower. Contract mediation makes possible the proper rewarding for growers for specialties, as well as signaling special requirements to producers. For instance, on packaging and order size, in this case the greenery uses niche market compensation, that is, if a grower puts extra effort in packaging for a particular customer, he receives a bonus

on top of the market price. A seller using mediation still obtains the traditional advantages of the auction, like insurance against buyer default and the option of selling additional produce through the auction clock. Not only specialties but also more standardized products are sold through the mediation, particularly if customers demand large quantities. In this case products from various growers are combined into one lot, and the price received by the grower is a mix of the clock and the mediation price. As no individual price per grower can be paid, the incentive for growers may still be sub-optimal. The greenery is seeking the best combination of the mediation selling and clock selling. If most of the supply is sold by mediation, the price established by the auction clock might become more and more volatile. For this reason therefore, the greenery makes agreement with the growers that a certain minimum of total supply will be sold through the clock this is also to guarantee supply to buyers only purchasing through the clock. The product market advisory committee represents the growers in the greenery.

The greenery has also started to experiment with a third price mechanism: unilaterally setting a price, and inviting buyers to make a bid for specified quantities. Initially the Greenery used a rather rigid system of price setting. This was not successful, as prices paid to growers were eventually lower than competitors paid to their suppliers. Growers particularly those for cucumbers, complained about this system, and in order to regain control over sales, they formed an association and started to negotiate with the greenery about the price determination system to be used.

Shifting from the auction clock to other price determination mechanisms means that trust in the grower-greenery relationship becomes more important. Mediation requires a larger degree of trust of grower in the capabilities of the greenery personnel.

During the first years of greenery existence, trust was low, for several reasons. First while the auction clock resulted in a fully transparent price determination process, under the new mechanisms some secrecy was introduced to facilitate the bargaining process between buyers and the greenery sellers. Second, some negotiators of the greenery were inexperienced. Third, prices obtained for some products were actually lower than what could be obtained at other auctions. Fourth, the initial management of the greenery strongly emphasized their focus on servicing clients instead of servicing suppliers.

Logistics in the auction[8]

Logistics is the control of the transport of products. This is very important in the greenery mainly because of several reasons, like big transport volumes, labor-efficiency, time factor and quality maintenance since the food products are perishable and are the ones dealt with in the greenery. Here three aspects are important namely; sorting and storage of the products and standardization of the packing material.

The sorting of the produce is done, because the demand of products is different for each size and quality. The best prices are fetched if the different products are supplied separately. The grower sorts the products by the different categories and packs the produce and products in boxes; those boxes are then piled up on a pallet. In the auction different products are placed by category until they are sold.

Some products like potatoes and cabbage can be stored some time, before it is sold. Other products like cucumbers and tomatoes should be eaten as soon as possible. The quality of the products remains optimal under specific conditions of temperature and air-humidity. Usually the auctions arrange the storage-capacity. In logistical view the storage is used to connect the demand and supply quantities.

[8] From: 100 Years Auctions in Horticulture, edited by the Dutch organization of auctions.

Standardization appears in two stages: the packing and transportation stage. The farmers do the packing. Ten years ago some products were re-packed in the auction, so that the packing materials could be re-used. Nowadays the packing materials are not reusable, because it is expensive to re-pack the products and also to transport the empty packing materials back to the auction. The packing materials are owned by the auction and the farmer pays a fee for usage, so for one product quality all incoming products are packed in the same boxes or crates.

The pallet and lift truck have proved to be very important things in transportation. In all stages and product-types the same pallets-sizes are used, because then the size of a truck can also be standardized and the same case applies to the containers. Especially in sea-transportation the standard-size of containers has shown its value.

The future of the Greenery

The Greenery is facing challenges of changes on food safety and chain management due to the globalization of the economy. The process of globalization has affected the vegetable, fruit and mushroom sector as it has taken place in all the links of the chain, which has led to expansion through mergers, takeovers and participating interests, few sales at the auction and more sales through contracts. Therefore as a result of this the management of the greenery is structuring the company so that it can take full advantage of the new development by selling products in a closed chain. The closed chain therefore calls for direct lines between the final customer and the producer, this will then provide an ideal opportunity for closely harmonizing supply and demand in quantity and quality.

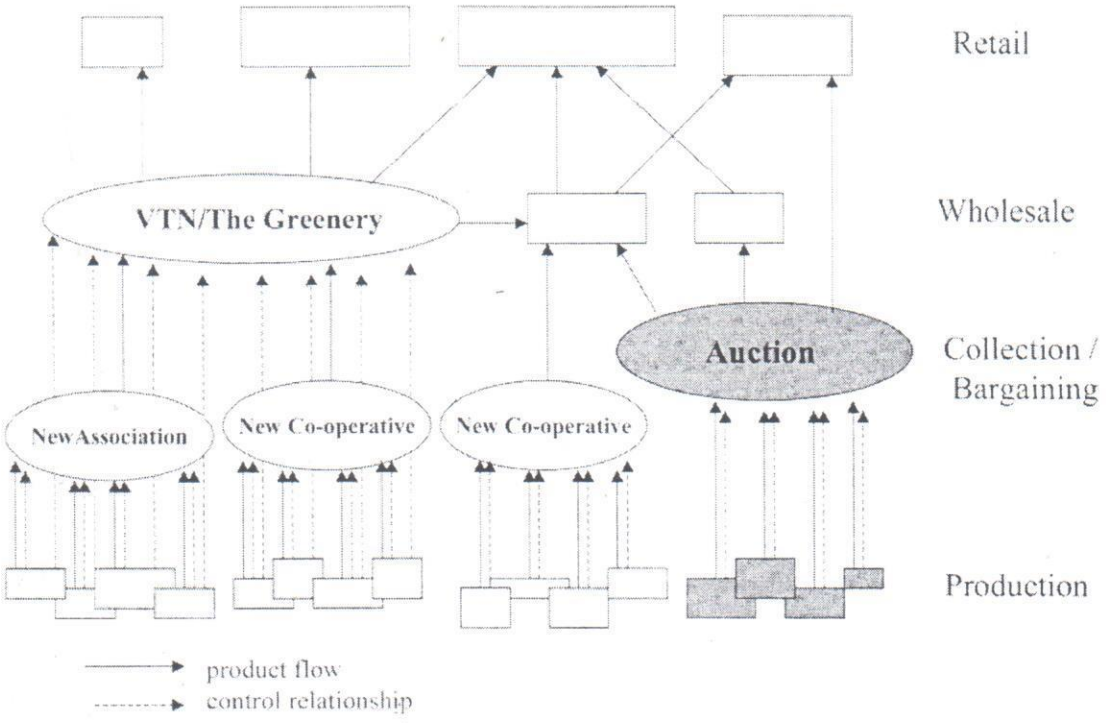


Figure 3.2: Position of the Greenery in the total horticultural chain. The main issue for the Greenery is whether they can persist the competition of alternative channels[9]

[9] Essays on Agricultural Co-operatives, Erasmus Research Institute of Management, Rotterdam

The greenery management is also trying to provide a range of services that are important in helping the company to face the challenges of the changes. Some of the services are:

- Right packaging
- Good logistics
- Professional marketing support
- Business certification
- Proper functioning of tracking and tracing system

However, to restructure the company the greenery requires extra funds, which have to come from the member growers. This has led to increase of the auction fee for the member growers that have made them feel that the greenery management is exploiting them. They also feel that they are not well represented in the greenery, this is because even though they still maintain the residual decision rights, their formal influence on the greenery operations is reduced. As a matter of fact the member-producers invested in the auction, but now the management restricts their authority of their own possessions. Some of the member growers therefore, are withdrawing from the greenery and instead form new cooperatives and are trying to make contracts to sell their produce. The withdrawal of the farmers from the greenery threatens the success of the greenery as its future lies in the hands of the member growers.

3.2 Organic farming in the Netherlands

History and Development of Organic Agriculture.

In the Netherlands two types of organic agriculture can be distinguished: biodynamic and ecological farming. The difference with conventional farming is that no chemicals are used as fertilizer or pesticide and animal welfare is guaranteed. The history of organic agriculture starts in 1926 with the first biodynamic farm in Zeeland, Loverendale.

In 1947 the Warmonderhof (http://www.warmonderhof.nl/warmhof/index2.htm) in Warmond established the first biodynamic agricultural school. In 1964 the first biodynamic advisor started working.

In the course of the sixties the ecological movement came into being. In contrast to biodynamic agriculture with its philosophical background ecological agriculture has social and environmental roots. Protection of the environment, being careful with natural resources, energy and a changing society are the most important objectives of ecological agriculture. The organic sector is slowly growing: in 1972 there were 85 organic farms and at the end of the eighties 359 farms.

In the nineties, organic agriculture receives more and more recognition and the organic sector becomes more and more professional. A new organisation for the entire sector was founded in 1992: Platform Biologica (www.platformbiologica.nl).

Also in 1992 the conversion regulation came into effect: farmers who wish to convert are subsidised by the state. Food surpluses, manure problems, the swine-fever, various food scandals (BSE, dioxin etc.) and falling prices in conventional agriculture resulted in more and more conventional farmers becoming interested in organic farming and in consumers demanding safe products. Research shows that organic farmers have a comparable - if not better - income than their conventional colleagues. Most farmers converting now opt for ecological farming. After some years of ecological management a number of farms choose for biodynamic agriculture.

In the Netherlands there is a growing consensus regarding the necessity for a more sustainable form of agriculture. In a country as densely populated and as intensively cultivated as the Netherlands an increase in organic agriculture is urgently needed to safeguard the environment for future generations and provide for healthy food-products.

Platform Biologica, the umbrella organisation for the organic sector, advocates the realisation of ten percent organic agriculture by 2010.

In 1996 the Ministry of Agriculture(http://www.minlnv.nl/) developed an action plan for organic agriculture. It is currently revising the action plan and now supports the ten percent goal. Yet it is still hesitant to invest sufficiently in conversion schemes.

The current Minister of Agriculture has proposed to stop the conversion schemes in 2002. That would make the Netherlands the only country in Europe that does not support financially farmers in conversion.

Statistical Development of Organic Farming

The organic share in the total agricultural surface in the Netherlands is relatively small. As of July 2001 1.47 percent of the total agricultural area was organically managed (see table).

In the nineties, however, the growth increased considerably. Between 1993 and 1997 an average of 60 farms per year converted. In 1998 and 1999 more than 200 farms converted per year, which is the equivalent in growth of more than 25 percent per year.

In the last two years the growth rate dropped to 14% in 2000 and 8% in 2001.

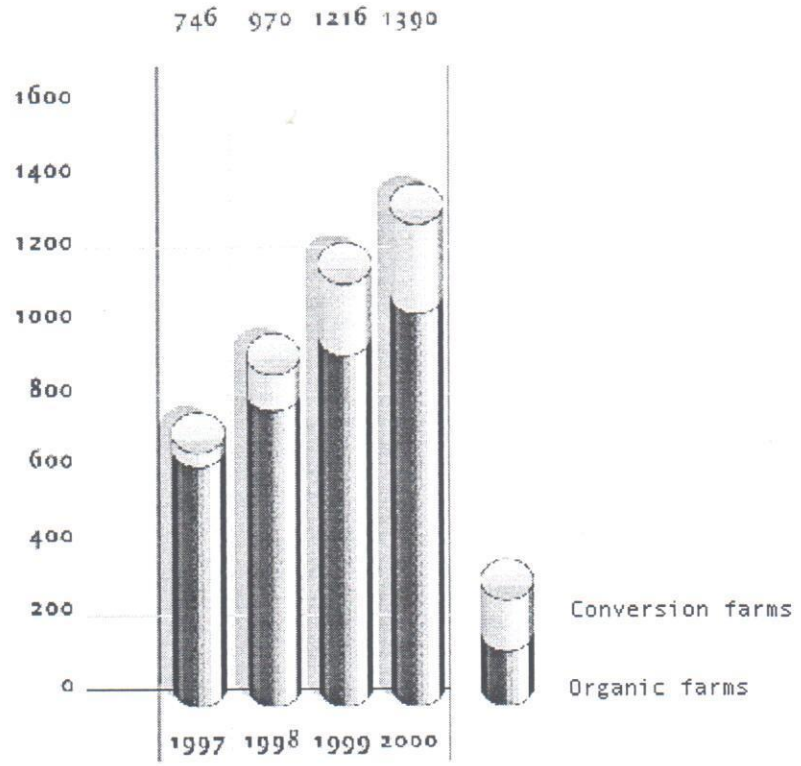
Number of organic farms	1436
Number of certified farms	1128
Number of farms in transition	308
% of total number of farms	1,53 (total number of farms = 93,820)
Hectares under organic management	29,393
% of total agricultural area	1,47 (total = 2 million ha)

Table 3.1: Dutch Organic Agriculture 2001 in Numbers[10]

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001
Farms	455	512	561	656	746	962	1,216	1,390	1436
Hectares	11,150	11,340	12,909	14,456	16,960	19,323	22,997	27,800	28,720

Table 3.2: Growth of organic farms and land under organic management 1993-2001

[10] Source: Skal / Blik



[11]Graph 3.1: Growth of the number of organic farms in the Netherlands 1997 to 2000

Market volume
The table below shows the yearly turnover of the organic market in The Netherlands.

Year	1999	2000	2001
Market turnover million euro	211	272	363,6

Table 3.3: Yearly turnover of organic market

42% of the organic products in the Netherlands are sold through food shops, 138,6 million Euro. In the last six years the increasing interest of the consumer has led to a yearly growth in turnover of the organic food shops of five to eight percent.
The number of farmers' markets - markets where only organic products are sold - has increased sharply during the last five years. The growing demand has also resulted in a remarkable growth in the number of organic processors.

The interest of supermarkets in organic products has sharply increased over the last years. Since Albert Heijn (AH) - the market leader in the Netherlands - introduced its own organic house brand at the beginning of 1998, sales through the supermarkets have risen sharply.
The market share of the supermarkets has grown in four years time from 19 to 45 percent (Dfl 330 million / 150 million Euro).
The other sales take place directly from the farm, at farmers' markets or via vegetable subscriptions (box schemes).

[11] Source: Platform Biologica

The "Vegetable Bag"
A subscriber to a vegetable box scheme receives a bag with freshly harvested vegetables and fruit every week. The bag contains mainly regionally grown seasonal vegetables and fruit. A vegetable box scheme can be arranged directly via organic farms or with organic food shops. These "vegetables bags" are very popular. While ten years ago it was an unknown phenomenon in the Netherlands, in 2001 45,000 households got their vegetables at a shop or a farm every week.

Consumers
Dutch organic consumers buy only organic vegetables, fruit, potatoes, dairy products, eggs, bread, cereals and beverages. In addition, 48 percent of the organic consumers purchase organic meat on a regular basis. In the last couple of years, sales of organic dairy products and vegetables increased about 30 percent. In 2001, an average Dutch supermarket had 56 organic food products in its assortment compared to 48 products in 2000. The number and range of organic food products is minor compared to the UK, Germany and Denmark, where organic food product lines in some major supermarkets number between 750 and 1,000.Dutch consumers are very price sensitive compared to consumers in certain other EU countries. In The Netherlands, organic food products sell at about a 20-50 percent premium over conventional products. The average Dutch consumer is not prepared to pay more than 5-10 percent extra. Therefore, Dutch food buying organizations increasingly import less expensive organic food products to be able to serve Dutch supermarket chains, which want to widen their product range. On the other hand, The Netherlands is an important exporter and re-exporter of organic (outdoor) vegetables, fruit and potatoes. More than half of its production is exported. The main export destinations are the United Kingdom with a 60 percent market share, Germany (20%), Denmark (10%) and Austria (10%). The Netherlands also exports large volumes of organic dairy products, mainly to Germany.

Reasons to Purchase Organic Food Products (%)
Worried by a series of food scares, certain Dutch consumers are trying organic foods. Over half of Dutch consumers occasionally buy organic food products. About half of these consumers purchase organic food products for health reasons. Others are attracted to them due to environmentally friendly production methods, no use of chemical plant protection products, taste, and food safety. About 35 percent of Dutch consumers do not buy organic food products because of higher prices relative to conventional products. Conventional products are purchased because of price, availability, appearance and wide product range. The Dutch Food Retail Organization (CBL) has forecasted that 10 percent of Dutch consumers will frequently eat organic food products by 2010.

Environmentally friendly	51%
Health	49%
Taste	41%
No use of chemicals	28%
Supporting organic agriculture	14%
Quality	12%
Animal welfare	10%

Table 3.4: Reasons to purchase organic food products[12]

The main consumers of organic food are people under 35 without children. People over 55 are less interested in organic food products, partly due to their lack of knowledge about organic food. Average Dutch organic food product consumers are women with

[12] Source: Platform Biologica, 2001

above average income and education. Of all consumers of organic foods 15 percent are termed "heavy buyers", 54 percent are "medium buyers" and 31 percent are "light buyers." The light and medium buyers are also called "part time organic consumers." Most "part time organic consumers" began by buying organic milk and have extended their organic shopping list since then. In 2000, 23.1 percent of all Dutch consumers bought organic dairy products. Heavy and light buyers purchase very different products. For example, 39 percent of the light buyers rarely buy organic bread, while 93 percent of the heavy buyers always eat organic bread.

3.3 Fair Trade

Introduction

This is the marketing mechanism whereby products from the producers are purchased at fair prices and under fair conditions. Fair trade organization was established in 1959 under SOS [save our source], later it became the SOS world trade. Since in 1994 it has been known as the fair trade organization and fair trade assistance. It handles assortment of 3000 products purchased from organization of craftsmen and farmers in Africa, Asia and Latin America. The assortment includes foodstuffs [like coffee, tea, rice, wine, chocolate, and peanut butter], handicraft, earthenware, crockery, utensils art etc

Objective of fair trade organization and fair trade assistance

It is to promote fair trade; by,

[a] Providing information through drawing attention to problems and abuses and provide solutions and also attempting to persuade politicians, businessmen and consumers that they should buy from the developing countries.

[b] Putting fair trade into practice by purchasing a broad assortment of products from craftsmen and farmers in Africa, Asia and Latin America and reselling them still in the third world shops, supermarkets and fair trade shops.

Principles of fair trade organization and assistance

- Eliminating the middlemen by doing the business directly with the producers
- Paying the producers in advance in order to bridge the period between sowing and harvesting.
- Fair trade assistance also provide producers with intangible support like commercial advice when they wish to improve their products and their production methods.
- Stimulating good working conditions and environmental awareness.
- No children exploitation and women should benefit proportionately from honest trade.
- Employees accompanied by guest experts from the region itself and from Europe travel through out the world in order to advise, train and support the producers developing products. This is to alert the producers on the current trends and the standards they have to meet and paramount matters to the exporters.

Business partners

The fair trade organization and fair trade assistance is active in the Netherlands and Belgium. They focus on the producers in Africa, Asia and Latin America who have no entry to export market and on companies with good social policies. They have had a long term relation with 90 producers in 30 countries and concluded a long term agreement in which the reciprocal rights and duties are defined and a close track of all developments of the trade partners are kept.

Consumers of fair trade products

For consumers in the Netherlands and in Belgium, the brand name fair trade offers the reassuring certainty that the products have been purchased according to the principles of fair trade and the producers receive everything they are entitled to. A Max Havelaar label has been created, primarily on the initiative of fair trade organization. The label enables the other businesses to offer the same certainty, and also guarantees that the products have been purchased directly and that a fair price has been paid for them. It is applicable to a number of product groups and all the fair trade products which fall into these groups has the label.

Fair trade organizations collaborate with many like-minded organizations that is, those that are for fair trade and in turn the world shops and fair trade shops are reaching hundreds of thousands of consumers who are supporting the fair trade. Below is the Max Havelaar label.

Figure 3.3: Max Havelaar label

The future of the fair trade organization and assistance

From this years [2002] annual review, they no longer limit their attention to the own trading partners but also to other organizations in the south and north which are focusing on the development and support of medium sized and small businesses so that they also benefit from advice and training given by the fair trade assistance and business consultants to strengthen the position of less experienced companies on the export markets.

Fair trade assistance is developing tailor-made workshops for groups of starting entrepreneurs and other interested parties. The workshops address important issues such as product development, quality management, logistics, marketing and financial management. Market information given is not only on fair trade organization but also about other potential buyers in the north. Participation in the workshop enables producers to assess themselves in several issues related to the marketing and exporting, basically on export readiness and entrepreneurship. Fair trade assistance therefore, is the stepping-stone to more professional working methods, by means of advice, training and net working thus local businesses are learning to survive on the world market.

Fair trade is funded by HIVOS and FMO [finance company for developing countries] plus donations from world shops, private individuals, organizations and the fair trade organizations.

3.4 Food and beverage imports and contracts

Trade
Dutch Wholesalers are buying lower priced imported organic food products to be able to serve Dutch supermarket chains, which want to widen their product range. This trend will depend on the stocks, quality and prices of Dutch organic food products. For example, there is a shortage of daily fresh glasshouse vegetables in The Netherlands at the moment. Therefore, The Netherlands is dependant on foreign organic fresh glasshouse vegetables. The Netherlands also imports potatoes, fruit, pork, beef, poultry products, cattle, and cattle feed, mainly from other EU countries.

Certification
"Skal" is the organization, which inspects and certifies sustainable agricultural production methods and products. The Dutch Ministry of Agriculture has appointed "Skal" as the sole organic inspection authority in The Netherlands. "Skal" closely examines the entire production process to ensure that it takes place as required by the EU organic regulations. If this is the case, "Skal" certifies the production method, and the product may carry the "EKO" quality mark. The "EKO" quality mark gives consumers the guarantee that the products meet the strict requirements for organic production.

Tariffs, regulations and quotas
Food imports are highly regulated for hygiene and quality reasons and it is worth getting confirmation from the authorities before shipping Agricultural products are protected by quota, managed by a licensing system. Import of specified products without a quota license is prohibited. Products include cereals, rice, beef and veal, sugar, isoglucose, oils and fats, seeds, milk and milk products, wine, processed fruit and vegetables and sheep buffalo and goat meat.

Food products of animal origin, including fish and honey, must be produced in a European Union (EU) approved establishment. There is EU and Dutch legislation covering almost every aspect of food production and sale. Careful investigation is required before offering any product for sale. Much of this legislation is based on due diligence, putting the onus for compliance on the manufacturer or producer. Legislation covers:

- Ingredients
- Label design and content
- Jar or pack size
- Additives
- Need for a Dutch or EU address
- Product descriptions and names
- Products of animal origin
- Packaging materials
- Claims made for the product

Market entry strategies

Dutch food retail share in 2000:

1. Supermarkets – 65 per cent
2. Speciality stores – 20 per cent
3. Other – 15 per cent

As in other European markets, food retailing in the Netherlands is dominated by a small number of large supermarkets. Dutch supermarkets include:

1. Albert Heijn owned by the global retail giant Royal Ahold
2. Edah, Konmar and Super de Boer, members of the Laurus Group
3. C1000
4. Independent supermarkets who are members of Superunie

Retail purchasing in the Netherlands is quite centralised, with buying groups selling to their supermarket of wholesale members. Many of these members retain some purchasing autonomy, but the buying groups are very powerful. Buying groups include Superunie, Trade Service Nederland (TSN) and Koop-Consult.

Unlike some markets, Dutch retailers do not have a system of listing fees. However, they will expect you to help them promote your products, which will include spending money on marketing activities.

Retailers buy both fresh and grocery products from specialist distribution companies, rather than direct from the producer. In order to save costs and streamline ordering, stores have been reducing the numbers of favoured suppliers. This further restricts distribution opportunities for smaller companies. Category management, rather than 'buying' is the norm with the large retailers and buying groups.

Some options for selling into the Netherlands are:

- Appoint a distribution partner to handle importing and customer liaison
- Manage the customer base from country of production and find a fulfilment company to warehouse and ship to the customers
- Set up an office in the Netherlands or another European Union country
- Send one of your staff to Europe as a representative
- Share distribution with another company – preferably with a synergistic product range
- Have your product manufactured in Europe, under licence

Marketing your products and services

Dutch stores try very hard to make the shopping experience enjoyable, and will look for products that help them attract and retain customers. If you can offer an innovative range, or help them plan a promotion, they will be more receptive to your products. Dutch consumers are interested in:

1. Quality – appearance, taste, provenance
2. Novelty – unique, innovative
3. Time and labour saving – prepared, ready-to-cook
4. Value

Dutch consumers are very discerning when it comes to packaging and presentation of the product. It is best to work with a local specialist to develop packaging or branding suitable for the market. Your distributor should be able to help. The wrong packaging or marketing will mean that the product won' t get listed with any larger stores, and that sales are likely to be restricted. Think carefully about your target consumer before presenting your products in the Netherlands. Do not assume that your Dutch consumer will have the same characteristics or habits as your own country consumers.

Because category management is common in Dutch supermarkets and buying groups, it is important to consider the following:

- What is the value to the retailer of listing your product
- How your product 'fits' in the current product offering
- Who the target consumers are
- Projected level of sales
- What the retail price will be
- What margins the retailer and distributor expect
- How you are going to promote the product?
- Are you willing to change the product ingredients or packaging to suit the retailer?
- Is an exclusivity deal appropriate?
- Are you ready to provide product samples?

You will need to tailor your presentation to each retailer in order to be successful. Visit as many stores as possible to build up a picture of the retailer's -consumer base and consider how your product fits their needs and aspirations. Research the market and your potential competitors thoroughly before making contact with customers. Take advice from your distributor. Dutch companies prefer to have brochures and product samples, rather than relying on websites for information. However, the use of Internet and email is high, and customers will use these.

4. ADDING VALUE TO AGRICULTURAL PRODUCTS

4.1 Introduction

Adding value to a product or raw material means taking it to at least the next stage of production. Each activity performed by the producer or any body to the product before it reaches the consumer should add value to that product. The producer, who is the farmer in this case, should put into consideration two aspects if he has to succeed in his farming business first the customer value and the second the creation of a value added product. This will help him as the manager of his farming business to search for new profit centers. As agricultural producers find it more difficult to make ends meet with diminishing profit margins from increasing input costs and shrinking commodity prices, more emphasis is being placed on adding value to those products with processing. Value-added agriculture does not, and probably never will, increase commodity prices, but it can add value to those products by performing activities usually performed by others. So the benefit comes from the value-added activity performed, not by increasing commodity prices. Another distinction is that the value added goes back to producers not agribusiness processors. Adding value to agricultural products is one strategy for improving community's well being, this is because consumers all over the world are seeking out farm-produced and regionally unique products[13].

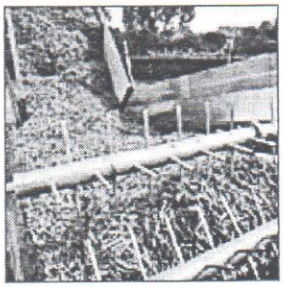


Figure 4.1: The French beans are being washed before they are put in a vacuum jar.

There are essential elements for success in the value added business that the farmer should put into consideration that is, beyond his planning and market research to know the customers, he is also supposed to be:

- Able to adapt to market changes.
- Open to exploring new ideas.
- Able to operate more as a resource manager than just a producer.
- Able to realize the importance of networking and the need to develop alliances.

4.2 The need for value addition

Value addition to agricultural products has proved to be very essential simply because the producer is not always the consumer of his products. Some value has to be added to the products to suit the consumer demands and also to add life to the product. Some farm products also are added value to get different products from the original produce. Value addition is also important because:

- It contributes to sustainability of the products
- It offers higher returns.
- It creates recognition for a farm meaning that many consumers will always go for the products from the farm hence increasing the competitive power of the farm.
- It opens new markets in the sense that composite products are made from one produce. For instance, ghee, cheese, yogurt, butter, powder milk are all obtained from value added milk.
- Expands market season in that some ways of value addition calls for preservation of the product. For instance under normal circumstances fruits cannot take two weeks after harvest, but when refrigerated they can even take more than two weeks.

[13] College of Agriculture and Life Sciences, New York, www.cals.cornell.edu

Ways of adding value to agricultural products

The value of farm products can be increased in several ways. Different farm products are added value differently. Examples of some of the ways of value addition are: cleaning, cooling, churning, hulling, grinding, extracting, smoking, labeling, distributing, adding information, education, entertainment.

4.3 Direct marketing as a value added opportunity for agriculture

Many producers are finding that if they sell their products directly to consumers, their profits significantly increase. Direct marketing does not require substantial capital investments or additional business development. It fits into theurban-development trends and consumer-demand trend for healthy food products in most regions of the world. There is growing consumer interest in locally grown food with information available about where the food came from and how it was produced. Direct marketing therefore requires producers to focus production around their market rather than produce a commodity. The underlying concept is that there is a difference between marketing and selling. It's possible to add value to products by direct marketing when producers assume the marketing functions traditionally done by others. By doing this, producers become price makers in their market, not price takers.

Direct marketing of fruits and vegetables can describe the market channels that are available to producers. To describe these market channels the alternatives have first been presented in figure 4.2.

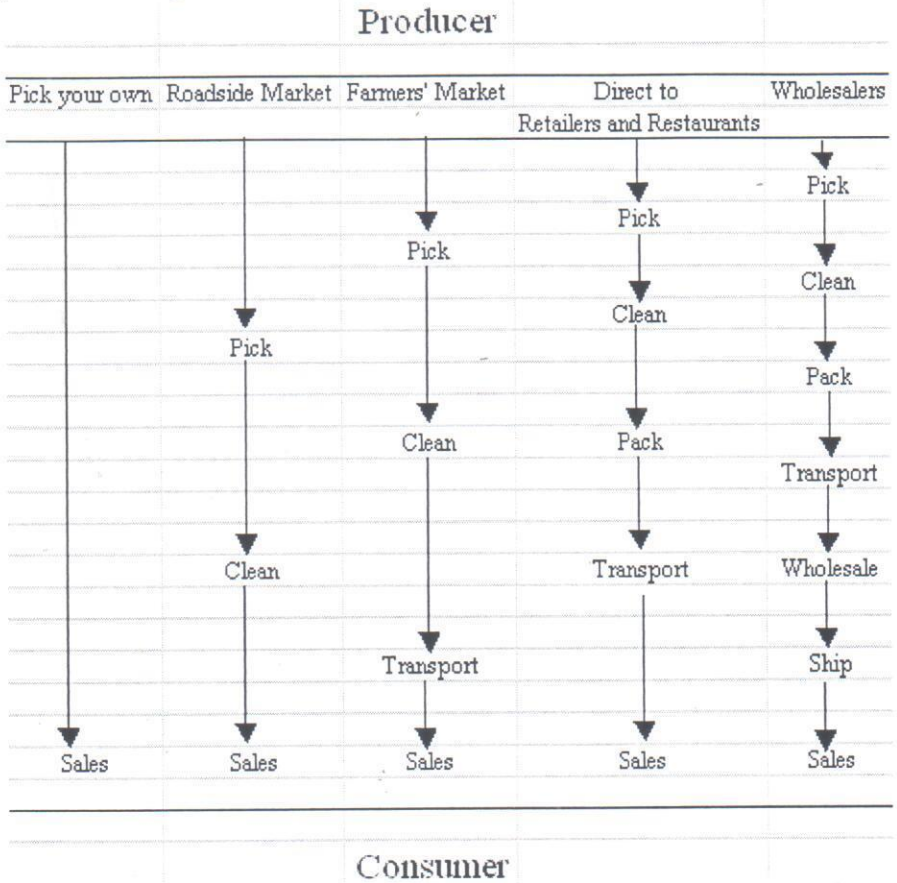


Figure 4.2: Marketing options for fruits and vegetables[14]

[14] Source: www.ohioline.ag.ohio-state.edu.

Wholesale Market
There are many steps in that market channel, including picking, cleaning, packing, transporting, possible broker services, wholesaling, shipping from wholesale to a retail outlet, and retail sales. Typically, the price retailers charge for products are at least two to three times higher than what is paid to the producer. Producers can market large quantities of product through this alternative, but their profit margin is very small. Because of fluctuating wholesale prices, at times producers sell their products below break-even prices.

Direct Sales to Restaurants and Retailers
Selling directly to restaurants or retailers eliminates at least two steps in the market channel, which adds to the value the producer receives for the products. A producer often also supplies transportation, which can be looked at as value-added service. Another feature of marketing directly to restaurants and retailers is that the price received is usually more stable, thus reducing price uncertainty.

Farmers' Markets
This direct-marketing alternative reduces the need for packing, which is a substantial cost reduction for producers. It provides a higher price because producers sell their products as a retailer. Price fluctuations are usually reduced or eliminated. For this marketing alternative, growers provide all of the steps from producer to the consumer, which adds value to their products. Selling through farmers' markets is flexible and is a good alternative for producers getting started in a suitable agricultural alternative or as an outlet for excess production.

Roadside Markets
This alternative eliminates the need for transportation because products are usually sold on the farm where they are produced. Again, growers provide all of the steps from producer to retailer, which increases the price and reduces price fluctuations, thus reducing price uncertainty. Roadside markets also give producers opportunities to further act as retailers by buying products wholesale and selling them retail. This phenomenon also gives roadside marketers an opportunity to expand their market beyond what they can grow themselves.

Pick-Your-Own
Consumers to the farm, pick the products themselves, and transport those products back to their home. The price received at a pick-your-own operation is often very close to the price consumers would pay for those products at a retail level. Consumers are willing to pay that price because of the freshness of the products and the on-farm experience that goes with it. Costs for the producer are significantly reduced, and the value added by this alternative is highest of all the marketing alternatives.

Agricultural Entertainment
Agricultural entertainment has become one of the most profitable ways to add value to a product and/or farm. School tours, petting zoos, festivals, and catered parties are just a few of the opportunities farmers are utilizing to add value to their products and generate income on their farm. In the case of agricultural entertainment, farmers are not only selling products they produce, they are charging admission to consumers who want to participate in the on-farm activities.

4.4 Processing as a way of value addition

Processing of crops is either done by extracting the valuable components from the crop or by producing composite products from it. It is always good to maintain the quality of the product during processing. It is either done for preservation purposes or to add value to the crop. For instance fruits like apples, mangoes, paw paws, oranges, lemons, are processed by extracting their fluid to obtain their respective fruit juices, which are further preserved to make them stay a bit longer. The juice after extraction is packed in bottles or cans or in packets, which then eases distribution and selling of the fruit juices. This is necessary because the fruit itself is easily attacked by the decomposing microorganisms.

Adding value to cereals can be done by processing the crop in steps. For instance maize after harvesting it is first shelled to remove the outer part of the maize comb then threshed to obtain the grains, in some communities the whole grain is added value by cooking but then the consumer does this, the other activities are done by the producer. The grains can be hulled to remove the outer cover of the grains then they are ground to obtain the flour, grain can as well be ground without hulling.

Processing can also do adding value to roots, for instance cassava. There are three marketing options of cassava after harvesting. First is direct marketing just after harvesting, this is the least complicated. The second one is temporally storage before marketing. This calls for preservation, the improved method developed by the natural resources institute [NRI] in UK is dipping the cassava in cold water immediately after harvesting and storing in sacks, wrapped in polyethylene to retain the heat, keeping off the ground and protecting them from direct sunlight. The third option is processing the cassava before marketing. The crop is first sliced into small pieces, dried and then ground into flour. All the three options depend on the consumer demands for cassava.

4.5 Quality control

During processing quality has an important role. It can be viewed from two different sides: for our health it is important that our food is of good quality and it is important that the environment is not polluted during production. To achieve those two conditions there are different parties involved like the government and private institutions that set up quality labels. The government has made regulations that guaranty a certain quality, but some organizations want an increased quality standard and that is why they set up their own certification system.

Governmental regulations

Every step of the production process has its own ways of checking the quality of the products. During the growing of agricultural products the farmer has to register the usage of pesticides, nutrients and energy. This information is regularly checked by independent checking agencies. The government has made a list of chemicals that should not be used and the grower is not allowed to have these substances in his farm. Also the use of nutrients is restricted which means that the plants cannot be given more nutrients then they need to avoid the surplus to go to the surroundings. The next step in the production process is the market, for example an auction, where the quality is checked in different ways. Samples of the products are tested for residues of pesticides, as this should not be too much. The products are also checked for whether they are sorted in the right category of weight, seize, shape, colour and for properties like damage and freshness.

For the processing step norms are formulated for hygiene and for the quantity of ingredients that is put in the product. Products like vegetables and fruit do not have to be labelled, but processed products like milk, flour and canned vegetables are labelled. This label mentions different properties of the product:

- Weight and volume
- Storage life date, which means that quality is guaranteed until this date
- Ingredients
- Nutrition value: quantity of fat, protein, carbohydrate and vitamins.
- Additives like preservatives, colouring, flavouring and aromatic substances
- Production type like biological or genetic modificated.

The government wants to have quality control in each link of the production chain. This means that even the food of the animals is tested for components that could affect consumers' health. Every product can be traced in the chain, so if in the shop appears to be something wrong with a product, the responsible grower can be found. This makes all contributing parties very aware of the fact that they have to meet the governments' quality standards. The next section describes the possibility of certification as an instrument to guarantee the quality of a product.

Figure 4.3: The temperature of the maize is tested

Certification

The principle of certification can be made clear by the role it plays in society:

- Producers prefer distinction from colleagues/competitors with regard to the supplied (quality of) products.
- Buyers benefit from a guaranteed performance of the products and from reliable information about the product.
- Certification organizations, independent and without market interests, form the link between (the interests of) both parties: the production system is inspected according to agreed standards, contractually agreed with the producer and regularly inspected. The specifications and the area of application are laid down in a scope certificate that is available for the buyer as an informative document.

There are a lot of certification organizations for all kinds of product and standards. In this section we describe the Eurepgap and EKO certification to give an example of the way these labels are used.

Eurepgap[15]

EUREP, '**Eu**ro **Re**tailer **P**roduce Working Group', is a platform of leading retailers in Europe active in the retail business of the agricultural food industry. GAP stands for '**G**ood **A**gricultural **P**ractice', a minimum production standard for a good agricultural practice of horticultural products (e.g. fruits, vegetables, potatoes, salads, cut flowers, and nursery stock). EUREP uses GAP as production standard for the certification of good agricultural practice in the agricultural and horticultural industry. At this moment the GAP standard is being applied in fresh fruits and vegetables. All kinds of agricultural products for human consumption can be certified with this standard. Special standards for flowers, animal production, grain, coffee, and feed are in development. Eurepgap is based on the principles of risk prevention, risk analysis (among others through HACCP), sustainable agriculture by means of Integrated Pest Management (IPM) and Integrated Crop Management (ICM), using existing technologies for the continuous improvement of farming systems.

[15] www.skalint.com

The reason Eurepgap has been developed is that there has been an increase in consumer awareness concerning the quality of agricultural products. Consumers want to be sure that their food is being produced safely, environmentally friendly, and that the welfare of both animal and humans are in no way compromised. With Eurepgap consumers can be sure that every step of the primary production complies with international and national standards and regulations regarding safe production of their food. The Eurepgap certificate gives growers better market access, as its retail members see Eurepgap as minimum production standards. As such, the certification will enhance farmers' marketing position. To become a certified supplier the grower makes a contract with SKAL International. SKAL comes for an inspection of the farm and its working procedures. Certified farms are inspected at least once a year announced and there is a chance to be inspected unannounced. Every year is evaluated whether the previously issued certificate can be continued, has to be amended, or even has to be withdrawn.

EKO

The EKO quality symbol is an international quality symbol for organic products. It is used when raw materials originate from organic cultivation and are processed using organic methods. EKO is a certification mark. It is neither a cultivation mark nor a trademark. Skal certifies products, processes and inputs worldwide. Skal has been authorized as an international inspection and certification organization in the EU member states.

During the inspection the following techniques are used:

- Interview with for the production responsible persons;
- Inspection of fields, premises, processing equipment, storage, etc. ;
- Inspection of paperwork; bookkeeping, weighing tags, labels etc.;
- Samples taken for residue analysis.

Points of attention during inspections for farms:

- Cropping plan and rotation; acreage per crop;
- History of past 3 years of each field where organic products are grown (preceding crops; fertilization including the use of fertilizers; pest and disease management including the use of pesticides; weed control including the use of herbicides);
- Manuring and storage of manure;
- Origin of seed material and planting material;
- Weed control and pest- and disease control; also fertilizers and sprays used in conventional crops in the region are assessed;
- Harvest estimates;
- Storage facilities;
- Livestock holding on the farm (number of animals, housing/feeding practices);
- Bookkeeping of farm.

Points of attention during inspections for processing plants:

- Origin of organic raw materials; certificates;
- Storage of organic raw materials; separation and indication of organic and conventional raw materials;
- Recipe of organic products in case of mixing raw materials;
- Description of processing procedures and methods; separation organic/ conventional processing;
- Storage, conservation, conditioning of ready products; separation and indication of organic/conventional finished products;
- Packing materials and labelling of organic products;
- Cleaning procedures in processing plant;
- Quantitative verification of accounts and results (comparison of purchase and sales); bookkeeping system; invoices; weighing tags, labels.

Figure 4.4: A farmer is using chemicals in a greenhouse. The quantity he uses is restricted by regulations.

4.6 Case Study HAK company

Introduction

HAK is one of Europes' biggest vegetable and fruit processing producers. This is especially because of quality is very important for the company. HAK exports its fifty different products to over twenty countries, like Germany, Belgium and the Netherlands Antilles. HAK has in Holland a market share of over sixty percent in the market for vegetables in glass.

Sowing

The sowing of the land is done with high quality seeds, so HAK products have the right properties. The growers that HAK cooperates with are selected by strict standards about the way the grower exploits his land. This way a group of growers is formed which are known and cared for by HAK. During the growing process there is regularly contact between HAKs' agricultural expert and the growers. The time of harvesting is determined by HAK, by samples of the pieces of land. The criteria are the maturity of the plant, the optimal presence of important nutrients like minerals and vitamins and the circumstances for harvesting.

Harvest the crops

The harvest season starts every year halfway May with rhubarb, then spinach, broad beans, capucijners, peas and carrots in June and July. In August and September the French beans and maize are harvested. These products have to be processed as quickly as possible to keep the optimal quality and verseness. After those products the cabbage and apples are harvested. Their quality is not that fast decreasing as of the first products.

Processing

The time of harvesting until the moment the products are in the jar is averagely three hours. This way the vitamins, minerals and other nutrients are preserved in the best way. HAK does not use preservatives and does not add artificial coloring or flavorings. The different vegetables and fruit need to be processed in different ways. The apples are peeled and the end of the French beans is cut of. This means that in the HAK factory are about 18 small factories which are used each from three to eight weeks a year. In this period a stock is made of each product.

Checking

Quality controls come back in every stage of the processing. When the products arrive in the factory the entrance check is done. Criteria are the color, damages, sorting, mealyness, peelyness and taste. Before filling the product is inspected for visual abnormalities. After the sterilization process the final controller checks the quantity, color and weight of the products. Taste checks are performed everyday, those are called organoleptical tests. Finally the products are checked in HAK and external laboratories for vitamins and minerals. This system of quality control guarantees to give the consumer a very natural product of high and constant quality.

Conservation

Arable farming and horticultural produce cannot be stored too long without treatment and they should be harvested within a short time. The need for a good and broad food supply exists the whole year. The conservation of vegetables and fruit is the solution for this problem. Conservation means treatment to prevent decay or delay the decaying process. HAK conserves its products by heating. The vegetables are washed in advance and shortly cooked. After that the lid is put on the jar and the jar is heated for a certain time over hundred degrees. The duration of this sterilization process depends the type of vegetables. The vegetables can be stored for some years without loosing nutrients. Once the jar is opened the products can be stored a few days.

Environment

HAK is trying to grow the vegetables and fruit in a well-considered way. Together with growers and social organizations measures are taken to reduce the environmental pollution. For example the manuring of the land is exactly determined by the needs of the land. Growers also decreased the usage of chemicals with fifty percent in the last years. Since 1998 HAK also processes biological plants in the vegetables, which are grown without chemicals and fertilizers. A lot of materials are recycled in the factory and the glass of the jars is thinner and the lids need less steel. The wastewater of the factory is treated and HAK tries to reduce its energy consumption.

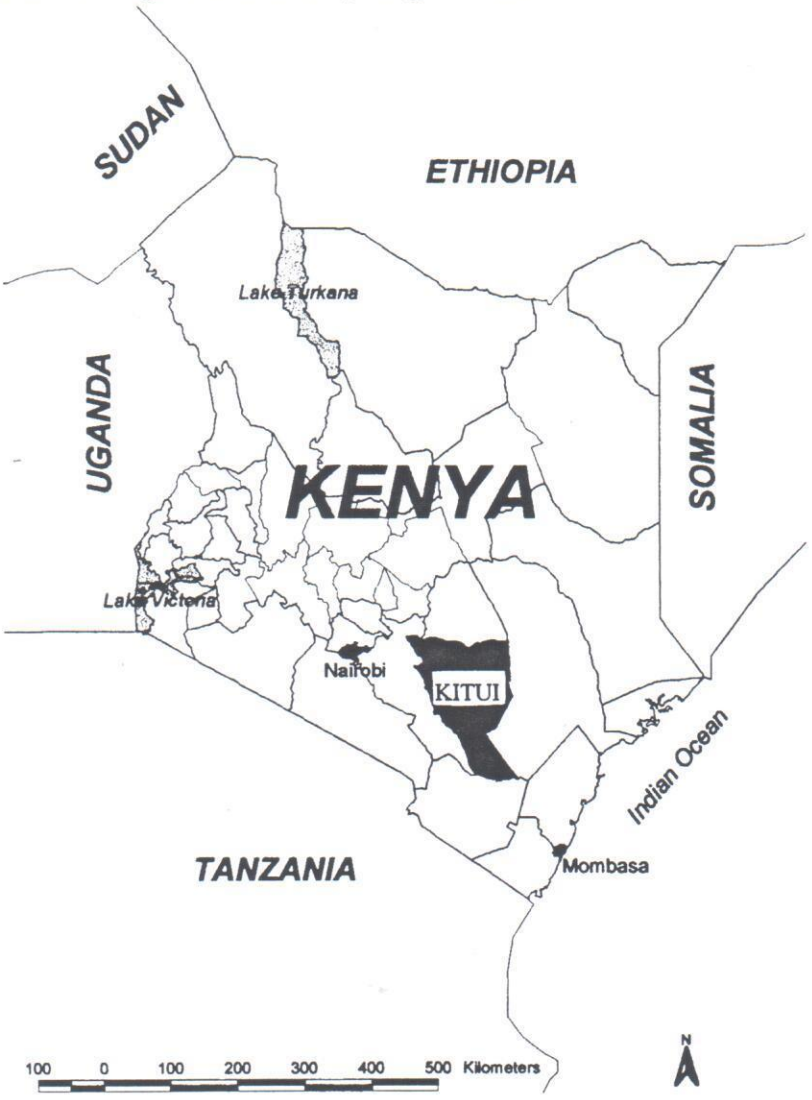
5. KITUI AGRICULTURE

5.1 Agro ecological Conditions

Although Kenya's semiarid lands share a tendency to have insufficient rainfall, agro ecological conditions vary considerably. Differences in population density and infrastructure base add to this diversity.

The Yatta plateau, an undulating plateau of about 1,100 m altitude, characterizes the western part of the district. The Mutito hills rise to the north of Kitui town while to the east the Mutito escarpment drops down to the lowlands of eastern Kitui.Soils in the region are generally deficient in nitrogen and phosphorous and have low organic mater content. Low infiltration rates and a susceptibility to sealing makes many of the area's soils vulnerable to erosion, particularly since the most intense rains come early in the growing season when ground cover is poor (Sketchley 1978)

The only permanent watercourses in Kitui are found along the borders. Within the district, most streams are ephemeral, and springs provide the main source of water. The district therefore is highly dependent upon rainfall. Across such ephemeral streams SASOL has been constructing sanddams through community participatory approaches. The bimodal distribution of the rainfall has its peak in October December and March –April. February is characterized by a short dry season while a longer one is in July-August. The October-December rains are the most important for agriculture, since they are generally heavier and better distributed for crop growth than the March -April rains. [1]Rains are highly variable, both on a year –to-year basis and between locations. The district is periodically afflicted by drought. The 1983-84 drought was severe and caused widespread crop failure and loses of livestock. The last several years however, have experienced unusually favorable rainfall, with consequent increase in agricultural production.



[1] Because of the long dry season between the end of the March- April rains and the beginning of the October-December rains, two-season crops such as pigeon peas and cotton are generally planted in October. The October-December rainy season, therefore, is usually referred to as the first season.

5.2 Production Patterns

Kitui agriculture is mainly subsistence-oriented, especially outside the Central and Kyuluni Divisions. Central Division farmers generally plant a substantial proportion of their land to food crops (maize, beans, pigeon peas, cowpeas, millet, sorghum, and cassava and green grams,). The surpluses are traded off particularly to the local traders and markets. Cotton and tobacco are grown to a lesser extend as cash crops. Livestock keeping is an integral part of the Kitui farming system. Livestock is kept for its products (meat, milk, manure, and hides), the services it provides (in particular plowing), and as a form of saving.

Horticulture is in its take off stage in the Central and Kyuluni and Mutomo Divisions with vegetable growing registering an upward mobility. Vegetables such as Karrella, Brinjals, Okra, Tulia Linda, Tindori and chilies are grown under irrigation along Athi River in Mutomo and Ikutha divisions. Other local vegetables such as tomatoes, sukumawiki (kale), cabbages, capsicums, onions, corianders, spinach and pepper are grown under rain-fed conditions district-wide. Fruit and tree planting is in the increase with mangoes, avocados, citrus, lemon and guava being the common varieties. Apiculture is spread all over the district with the Southern and Yatta divisions being the highest producers of honey. The increased horticultural production in the Central and Kyuluni Divisions can be attributed to the ground water storage projects (Sanddams) and natural resource management and conservation. The farmers use little or no chemicals and fertilizers. The underlying base is that this Divisions fall under the Upper Midland 4 agro ecological zone with a mean rainfall of 850 mm- 1000 mm.

According to the social economic study contacted in Kitui district farming was recorded to be the main household occupation and source of income.

The variations in household production patterns in various divisions and sub-locations can be traced to a number of reasons; differences in resource endowment, which can influence the rate of migration. In areas where land is productive, chances of migration during famines are minimal while the rates of migration in areas, which are less endowed with resources, are bound to be high. The possibility of returning home after a famine incidence is high for people from areas with high resource endowment.

5.3 Transport and Marketing Infrastructure

Kitui District is relatively poorly served by transport systems. In general Central and Northern divisions are better endowed than the rest of the district, having both more and better roads. In Central Division a tarmac road connects Kitui Town to Nairobi via Machakos and murram roads provide connections to the Thika-Garissa road, which crosses the northern part of the district, and to the rail line from Nairobi to Mombasa at Kibwezi.Most major markets are connected to Kitui town by murram or earthen roads. The rural access roads are only passable during the dry season since during the rains they become muddy and slippery. The Kitui – Kibwezi road is strategically important since it connects the district to Mombasa, a major harbor and potential market. Kisasi, Ikanga, Mutomo and Ikutha are major trading centers along the same Kitui –Kibwezi murram road.

Kitui Town is the most important urban center in the district. In addition, each location has a number of market centers. Markets are held periodically in each center, typically on weekly basis, although larger centers may have more frequent market days. Marketers of livestock and products such as honey and hides visit these markets to buy from farmers. Local merchants including butchers and grain brokers and agents also buy produce. Posho (grain meal) mills can be found in the vicinity of most market centers. Most centers have small-scale livestock markets and slaughter slabs at which animals are sold and slaughtered by local butchers.

5.4 Grain Market.

The common grains traded are maize, beans, cowpeas, pigeon peas, millet, sorghum, and green grams. Except pigeon peas which are traded fresh and dry, the rest are sold when dry

The most interesting thing in the grain market is the organizational factor. Few wealthy traders with numerous agents mostly control the markets like a cartel; the organization is informal but very powerful. Information flows between the traders are very high hence enabling them to control the diverse markets. The traders are either grain milling corporations, wholesalers or exporters. They provide capital to selective local traders and middlemen who purchase the grains from the farmers on their behalf. In most cases the local trader or agent establishes a store, which becomes the collection center. Often the major trader sends a big truck, which collects the grains from all the affiliated local traders and agents.

In this way the agents and the local traders set the buying prices. The farmer has no other alternative and loses his bargaining power. This leads to outward exploitation. This is aggravated by the fact that the household granaries (stores) have no adequate space and conditions to preserve the grains for long. More still the transport system is so poor and expensive that the farmer cannot be able to transport his produce to other distant markets where he can fetch better prices. The end result is that the farmer gets very little money and not be able to plough back some income as capital.

5.5 The Fruit and Vegetable Market

Fruits and vegetables are grown along sand dams, streams and traditional water sources. They are also grown as rain fed crops during the wet season. The farmers are individual growers with no established contact with other growers in the same line of production. Locally they are arranged in the open- air market for sale depending on the quantity demanded. The free market forces of demand and supply set prices depending on the quantity and quality one needs to buy. The arena is a mixture of both retail and wholesale business.

Mostly the sellers are middlemen who buy the products from the farm. Sometimes few farmers undertake the trade themselves. Besides local traders buying for local use and resale, they also buy for sale in distant markets where demand is high. Mombasa City provides a ready market for these fruits and vegetables.

Production is always seasonal with gradual levels of supply ranging from periods of scarcity to plenty. During the peak season the market is saturated with supply surpassing demand. The consequences are too hard to the farmer since the prices drop and the farmer sells the products at throwaway prices to savage the little he can. By the virtual perishable nature most them become stale and/or dry.

The contributing factors are: -

- Lack of appropriate storage facilities; -coolers and refrigerators
- Lack of alternative primary and/or secondary processing
- Poor market timing and information
- Limited markets
- Inadequate transport infrastructures

5.6 Future Product and Market Potentiality

Kitui District has a potentiality of producing market-driven varieties, quantities and qualities. The potentiality has so far not been fully exploited since there has been no initiative behind it. The District's potentiality when adequately exploited can become a local, regional and international supplier of fruits and vegetables and grains.

According to the district's social economic study contacted in 2000, the sand dam project has triggered the introduction of new crops and varieties. The vegetable farms and banana farms besides the streams depict this.

New crop/ activity	Participants (Global)	Wii	Kiindu	Ithumula
Spinach growing	10	8	6	15
Fishing	11	4	16	13
Sukuma wiki	44	64	6	60
Onions	6	8	6	5
Tomatoes	10	12	2	18
Ndania	4	0	8	5
Sugar cane	5	8	0	8
Arrow roots	1	0	4	0
Fruits	6	4	6	8
Other crop	5	4	7	5

Table 5.1:New Crops And Activities[2]

The project triggered new activities in the three catchments areas. The most prominent among these activities is Sukuma wiki growing. From the participants' global data, 44% of those interviewed reported Sukuma wiki growing as not only a new activity but to boot the crop is also new in the area, while 10% reported tomatoes and spinach growing in the project area.
In Wii, Kiindu and Ithumula catchments, it was reported by 64%, 6% and 60% of the participants respectively that Sukuma wiki growing is a key economic activity after the construction of the sand dams. Other respondents (both participants and non-participants) specifically mentioned spinach, sukuma wiki (kale), onions, tomatoes and ndania (coriander) as having been introduced in the project catchment area as can be observed in the table.Fishing which was uncommon in the area was also reported but is more pronounced in Ithumula and Kiindu catchment. This is a transient activity for when the dams fill with sand, the re will be no fishing.Sugar cane is becoming an important economic activity in Mbitini and Ngangani sub-locations. Growing of arrowroots is also picking up in most areas. Ngangani sub-location reported the highest (18) per cent among the reported cases of fruit growing as a new activity followed by Mbitini, 14%.
There is a need to carry out a feasibility study on the potentiality of mangoes in the Sand dam project areas. The agro ecological conditions are suitable for two different varieties of export mango i.e. Apple/Tommy Atkins and Ngowe varieties. Some of these mangoes can be found being sold alongside the Kitui -Machakos road. Currently the farmers are not producing at such optimal levels due to lack motivational initiatives and ignorance. We can say that the farmers are in the transition period from purely subsistence farmers to being commercial farmers. In such flight we should expect them to be ignorant and unaware of the potentiality they are sitting on. The traditional notion that there is no prospects for agriculture in marginal areas such as Kitui need to be erased from the minds of the people and policy makers. The tropical climate is favourable to many crops and with water farming is viable. Therefore the stress should be on provision of water for production purposes. Citing from the average rainfall of 600mm-1000mm each year, if such water is harnessed and stored as ground water then the whole scenario will be reversed.
Employing the four marketing mix of product, place, time and price in the right levels we will expect an upward mobility in vertical integration. Quantity and quality will improve rendering the products competitive in the internationals markets. The lateral integration will bring the farmers closer hence lessening the existing gap. The farmer power will be established with high possibilities of having equal share of controlling the markets with the traders. One change will lead to another and the system can stabilise within a shorter period than expected.

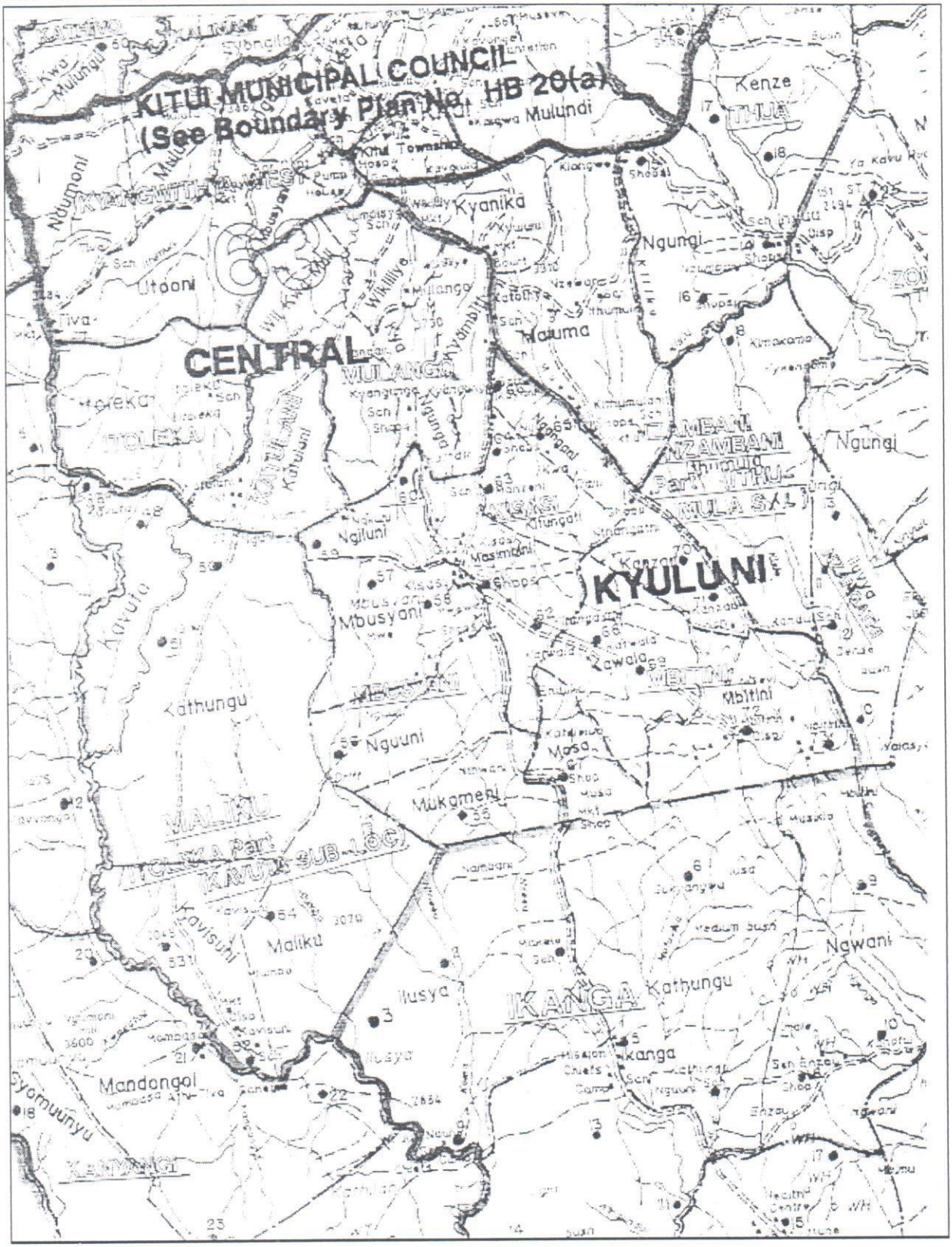
[2] KITUI SAND DAMS: SOCIAL AND ECONOMIC IMPACTS REPORT JUNE 2002

5.7 SASOL and Kitui Agriculture

SASOL is a local Non Governmental organization in Kitui district, whose programme is development of water resources. It is a rural development project and it conforms to the government's policy of district focus for rural development. Kitui district being one of the driest districts in Kenya, rains are seasonal and all the water is carried to the main rivers outside the district leaving the district dry shortly after the rains. This limits agricultural practices in the district. Scarcity of water in Kitui district has hindered development in the district in the sense that after the rainy season most of the time is spend on water, that is people have to walk long distance looking for water for their use and for their livestock. Kitui people only practice farming during rainy seasons hence they only have small-scale production that is just for their own consumption. The major objective of SASOL foundation therefore is to provide water to the kitui people.

To attain its objective SASOL has focused on three major things, first on improving the retention of ground water through installing barrages in sand rivers. This involves construction of barricades across the streams to capture the running water during rainy season so that the community can utilize it after the rains. Sanddams [barrages] are underground water storage reservoirs where by after the construction of the barricade the running water carries with it a lot of sand, which is stored upstream, and it is in this sand where the water is stored. Secondly the SASOL has focused on improving the availability of water through shallow wells. These are constructed to provide clean water for drinking and other household consumption. Thirdly, the focus is on improving the recharge of ground water through better land use and conservation. To achieve this SASOL staff organizes seminars and workshops and train the community on how they can utilize ground water and more so how to keep it free of contamination. The SASOL trains the community on the importance of toilets, establishment of tree nurseries, and also planting the crops which can utilize the under ground water

MAP 2: THE PROJECT AREA



5.8 Community participation in sand dam projects

The community participation is most outstanding in the implementation of SASOL activities. The people are first trained before the community is mobilized. The PRA[16] approach is used to facilitate the training. The community selects from 20 to 50 trainees, both men and women. Baseline information is collected to provide a point of reference for future comparison after developments. The baseline information constitutes the social setting of the community, resources available, time line showing the major events land use, soil fertility availability of food and the other important aspects of the community. This information helps the participants to know their own situation and understand their strengths and weaknesses. The problems facing the community are then identified and impact analysis carried out to determine the best development activity to be undertaken. The community mobilization then comes in, where the community is explained on what is expected of it and how it is supposed to participate. The community that would benefit from a new sand dam or a shallow well may comprise of two or three villages. The community elects a chairperson [often a woman] and a storekeeper. The chairperson works with the village headmen to assign tasks to the community members. The community arranges for the delivery, storage and recording of the materials purchased by the SASOL. The community provide labor; usually men carry out the heavier tasks like digging foundations, breaking rocks and hauling large stones. Women carry out other tasks like carrying water [if it is not available at the site while the dam is being constructed] and small stones, washing stones, mixing the sand and cement mortar and cooking food on the site of construction while the SASOL provides the artisan and the other materials which cannot be obtained locally like cement and reinforcements bars. Sand for construction is obtained locally from the site of construction. The community provides maintenance and accommodation for the artisan assigned to them by SASOL.

The sand dams have a long-term effect to the community as the stored water seep to the farmlands making it possible for cultivation. The construction of sand dams impedes downstream flow and recharges the riverbanks from which the water returns as the dry season proceeds. Scooping the sand and hence fetching water obtain the underground water in the sand dams. The community practice bucket irrigation to grow vegetables and fruits during the dry season. The communities have managed to produce enough for their family consumption and to serve the neighbouring communities outside the project area. Generally the availability of water from the sand dams has led to higher production hence the need to look for markets outside the district and abroad. Our study on marketing therefore becomes essential where we are going to design a better marketing possibility to limit the spoilages and losses to the farmers.

[16] Participatory Rural Appraisal

6. FUTURE ACTION AND POTENTIAL MARKET MECHANISMS

6.1 Introduction

Basing our arguments on the weaknesses of the Kitui marketing system and deriving from the successes of the Dutch system, various marketing channels can be applicable. See also figure 6.1. The channels can be simple or complex but the success will not explicitly depend on the nature of the simplicity or complexity. Therefore the choice of a channel will depend on weighing of different factors like:

1. The product.
    - What is the type of the products? Are they grains, vegetables and fruits or animal products?
    - What is the variety of the product? is it indigenous, exotic or hybrid?
    - What is the nature of the product? Is it highly perishable, long lasting, fresh or dry?
    - Do the products need further processing, storage, packaging and transportation?
2. The market.
    - What is the size of the market?
    - How is the market organized?
    - How can the market be reached/accessed?

3 The Infrastructure.

- Are the roads passable both in dry and wet seasons?
- Are transport facilities available
- Are there communication networks?

4 Capital investments.

- What is the amount of capital to be invested?
- Is the capital available?

5 Land

- What is the size of the land?
- What is the rent of land?
- What is the soil profile, texture and fertility.

6 Labor

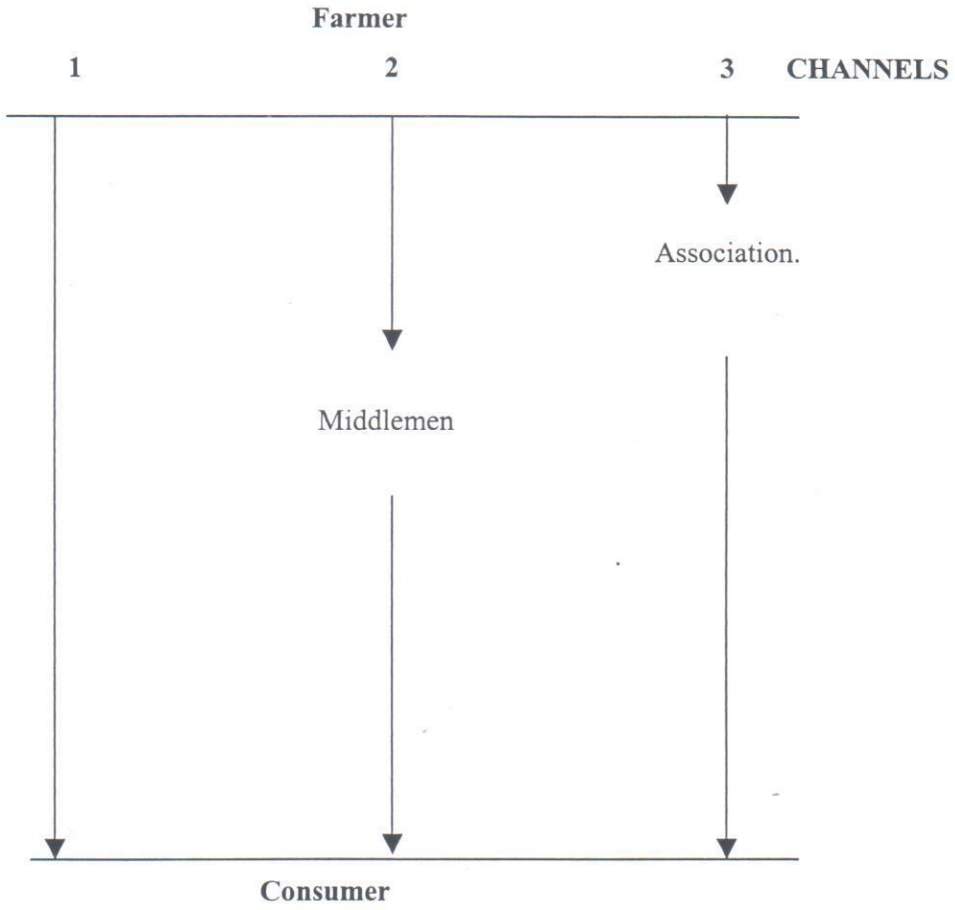
- Is labor available
- What is the wage of labor?

7 Government policy

- What is the agricultural policy in Kenya
- What is the law governing the setting up of industries?
- What are the import and export regulations
- Which quality control systems and institutions are in operation

Different channels can be employed simultaneously but also it is good to note that the longer the channel the higher the price. This is due to the fact the overhead costs increase with each extra step in the channel. The price burden can be pushed to the consumer or the farmer. The current market mechanism is free competition and when the price burden is pushed on to the consumer there is a tendency that the consumers will switch on to different relatively cheaper products Therefore to maintain the market the burden is pushed to the farmers who receive poor prices for their products.

Figure 6.1. Possible marketing channels between farmers and consumers



6.2 Descriptions

Channel 1 & 2 show individual selling while 3 shows cooperative selling. We will use the SWOT analysis to evaluate the channels.

Channel 1

In this channel the farmer sells the products directly to the consumer. The two have close contact and know each other better. Information flow is easy and short and negotiation is face to face. The channel is short and renders it to fewer overheads, which makes the price a bit good for the farmer.

This channel becomes weak when the farmer has to do investments in transport, storage and processing. It requires a lot of capital that cannot be available to many Kitui farmers. The farmer bargaining power is less since each farmer operates individually.

The available opportunities for this channel can be found in local market selling. For example a small-scale vegetable farmer can sell the vegetables to the neighborhood. It will also succeed in selling of produce, which will not need further processing. The farmers have a chance to start up small processing plants.

When competing farmers enter the market, saturation is possible due to the limited size of the accessible market. This will threaten the existence of this channel.

Channel 2

This channel shows farmers selling to second parties who in turn sell to consumers. The second parties can either be middlemen (dealers), industry or both. The dealers can be wholesalers, retailers, or supermarkets. When the produce is sold to the industry it is processed and sold to the consumers through the same dealers.

In most cases the dealers do the marketing functions and the farmer is left to concentrate in production. These functions are transportation, storage, market search, and actual selling. Therefore the farmer does not need to put much investment in these functions.

The weakness of this channel can be seen when the middlemen exploit the farmers without the farmers being aware. The middlemen would like to get the produce from the farmer at the lowest possible price since they want to maximize their profits. The farmer bargaining power is less since each farmer operates individually. Also the farmer does not get all the necessary marketing information.

The opportunities for farmers in this channel can be available when the consumers are far from the farmer. In this way the farmer does not need to travel or transport the produce long distances to reach the consumers but the middlemen do it. Also the industry can be set up near the farmers and the distance is shortened.

The success of this channel is threatened when farmer cooperatives compete against the individual farmers in the same market.

Channel 3

This channel shows that the farmers pool together their resources and form an association so as to perform the marketing functions collectively. These functions are logistics, storage, packaging, bargaining and quality control. In this way they increase their bargaining power and are in a position to control the market for their products. As an association the farmers are able to influence the determination of the price.

The weakness of this channel is that when the association grows the farmers tend to loose the control of the cooperative because the board of management controls it. There are chances of the cooperative being mismanaged because the staff unlike the farmers does not feel the need to be totally responsible.

The opportunities for association are that it is easy to get credit facilities since the credit providers can trust them more than individual farmers. It is also easy to lobby and pressurize the government to do investment in infrastructure. The association can also form an industry to process the produce. The association can be formed within the dam communities or between dam communities.

Conclusions

Although all these channels can be applicable to Kitui to some extend channel three is more suitable. This is because in the first and the second channels the farmers work individually and are exposed to more threats than when working collectively. In channel three the farmers work collectively and it becomes easier to get credit facilities, lobby and start a processing plant. Marketing functions like quality control, packaging, storage, transportation, information flow and selling become more centralized. Market search and research are done with much ease.

6.3 Value Addition Possibilities

In this section we describe for each product type, the alternative markets and related processing.

Cereals

Maize, sorghum and millet can be sold locally or regionally. The dehulling companies can buy the cereals from the farmers and transport them to the processing plants.

Beans

Cow peas, pigeon peas, green grams and beans can be sold when dry or fresh. They can be processed and preserved and sold locally and internationally.

Fruits

Fruits can be sold when fresh or dried. They can also be processed into fruit juice. The fruit products can be sold domestically or internationally. Mango, passion fruit, citrus, papaya, guava and avocado are the common fruits found in Kitui and have a great potentiality. This can be visualized in the figure below.

Vegetables

Cabbages, kale, tomatoes, brinjals, and sweet pepper can be sold fresh or when processed. Tomatoes can be processed into tomato puree, juice or be dried. These products can be sold domestically and/or internationally. This can be visualized in the figure below.

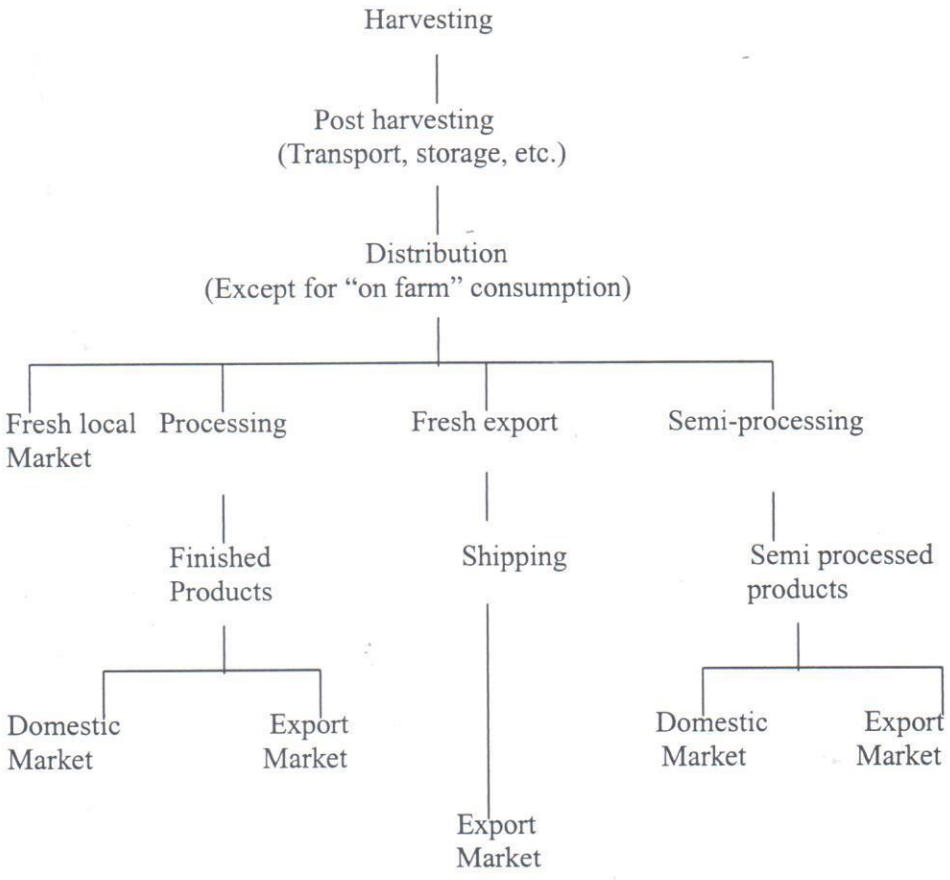


Figure 6.2: Fruits and vegetables-global marketing view

6.4 Alternative selling mechanism

Within the described channels the selling can be organized differently. We describe two mechanisms as alternative to the existing systems.

Contract farming

This is where the farmers produce on contract bases. The farmer produces a certain amount of his produce according to the agreement, if he happens to produce excess he has to find market for the extra. The contractors can be a processing plant, supermarket, consumer [taking a tender of supplying a produce to a school, hospital or children's home]. This channel assures the farmer of a ready and sustainable market for his produce till when the contract is over and he then can renew the contract if the services are to his satisfaction or else he looks for another contractor.

Auction

This is where the farmers come together and forms an auction cooperative so as to be able to sell their products at a centralized market. The farmers are supposed to transport their produce to the auction market .In the auction market the selling is done by a centralized medium. In this market the buyers meet with the farmers so that they can purchase their produce. The selling is done by gradually decreasing the price by the centralized intermediary or the auction clock and the highest bidder [the one who is ready to offer the highest price] is the one who buys the product. In the auction market the buyers can be dealers who buy and go to sell the products or agents of shops and supermarkets the since their aim is also to make profit they require high quality products and fair prices.

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6.5 Information flows

The success of the market depends partly on the flow of information. There should be a steady flow of information from the farmers up to the consumers and vice versa. When the information system is centralized it becomes easier for the flow. Pamphlets, the media, newspapers, seminars and advertisements are easy ways of passing information.

7. RECOMMENDATIONS

In this report we provided an overview of the Dutch agricultural marketing and of the situation in Kitui District. The Dutch system is too complex to be used directly in Kitui, but we found it useful to derive a system that is suitable for Kitui. This can be done by tailoring the complexity of the Dutch system to apply to the current situation in Kitui.

Farmers associations

- Encourage the farmers to form farmers associations to assure:
  - Steady supply of products for the market; industry and consumers
  - That they increase their bargaining power
  - That they can get credit facilities from the banks since the banks will trust associations more than individuals.
  - Knowledge sharing possibilities among the farmers.
- The farmers associations can arrange transport, storage, market search (find ready buyers and negotiate on price, quality and quantity), quality control, market information and training.
- The farmers associations can set up their own small-scale processing facilities.

Credit

- Cooperative banks, commercial banks and other small- scale supportive credit institutions should be encouraged to provide farmers with credit facilities at farmer-friendly interest rates.
- The development agencies should be encouraged to come up with credit proposals for the farmers.

Infrastructure

- The communities can come together to build and repair village feeder roads and paths.
- The development agencies and NGOs can supply electricity, communication and road networks, health and social facilities through participatory approach
- Sasol and other development agencies should continue building water projects for both domestic and production purposes.

Export

- The farmers should target local, national, international standards and find opportunities to sell their products.
- Export companies from Kenya or abroad have to look for possibilities in Kitui.

Value addition

Processing

- Encourage domestic and international investors to start up processing plants in Kitui so as to come closer to the farmers.
- Farmers can cooperate in making investments for processing and start small-scale local processors.

Kitui brand

- The possibility of setting up a quality brand should be investigated.

Training (seminars and workshops)

Training farmers on agricultural production and agricultural marketing is necessary for enlightenment since most of the farmers are not adequately educated.

Training providers

- Development agencies and NGOs
- The government
- Independent experts.

Agricultural production training topics

- Seed quality, variety and choice
- Crop types and growth requirements.
- Soil conservation
- Seasons and season timing.
- Harvesting and preservation.

Agricultural marketing topics

- Storage
- Quality control
- Market search and information.
- Targeting, segmentation and positioning.
- Value addition
- Future marketing potentials, research and development.

Further research

- Research on Kitui production capacity with respect to specific crop types, varieties and livestock types and breeds and their potential improvements. This overview can be used to improve the existing situation and to inform investors.
- Setting scenarios and researching on their marketing possibilities.
- Study comparable rural development processes in other countries.

ANNEX 1 REFERENCES

Literature

Bijman, W.J.J. 2002. *Essays on Agricultural Co-operatives; Governance Structure in Fruit and Vegetable Chains, Erasmus Research Institute of Management,* Erasmus Research Institute of Management, Rotterdam, Netherlands.

Bruinsma, D.1999. Adding Value to cereals, roots and tubers; Developments and opportunities in small-scale enterprise development in Africa. Technical Centre for Agricultural and Rural Co-operation, Wageningen, Netherlands.

Cooke, R.D. 1998. *Stategies for Strengthening Small-scale Food Processing in Eastern and Southern Africa, Proceedings of a workshop.* Technical Centre for Agricultural and Rural Co-operation, Wageningen, Netherlands.

Kohls, R.L. and Uhl, J.N. 2002. *Marketing of Agricultural Products.* Purdue University, USA.

Kyriakopoulos, K. 2000. *The Market Orientation of Cooperative Organizations, Learning Strategies and Structures for Integrating Firm and Members.* Nyenrode University, Netherlands.

Ministry of Agriculture, Fishery and Nature Management. 1959. *Dutch Agriculture.* Foreign Agricultural Service, The Hague, Netherlands.

Pearson, S. and Monke, E. 1995. *Agricultural Policy in Kenya, Applications of the Policy Analysis Matrix.* Cornell University, USA.

Zarilli, S., Jha, V. and Vossenaar, R. 1997. *Eco-Labelling and International Trade.* United Nations Conference on Trade and Development, London, UK.

Dutch organization of auctions, CBT, *100 Years Auctions in Horticulture.*

Muticon. 2002. *Kitui Sand Dams: Social and Economic Impacts*.Nairobi, Kenya.

Ministry of Agriculture, Fishery and Nature Management, *Horticulture in the Netherlands.*

SASOL and MAJI NA UFANISI. 1999. *Where there is no water; A story of community water development and sand dams in Kitui District, Kenya*

Internet

Albert Heijn, Supermarket in The Netherlands, www.ah.nl

Austrade provides export and international business services to Australian companies and international buyers, www.austrade.gov.au

College of Agriculture and Life Sciences, New York, www.cals.cornell.edu

Erasmus University Rotterdam, Management department, www.fbk.eur.nl

Fair Trade, farmer assisting marketing office, www.fairtrade.nl

Food and Agriculture Organization of the United Nations, www.fao.org

Foreign Agricultural Service, United States Department of Agriculture, www.fas.usda.gov

Ministry of Agriculture, Fishery and Nature Management, www.minlnv.nl

Netherlands Embassy Washington, www.netherlands-embassy.org

Ohio State University, College of Food, Agricultural and Environmental Sciences, http://ohioline.osu.edu

Platform Biologica, policy and promotion organization for organic farming and food, www.platformbiologica.nl

Skal International, organic inspection and certification organization, www.skalint.com

Swiss Research Institute of Organic Agriculture, www.organic-europe.net

The Greenery, auction in The Netherlands, www.TheGreenery.nl

Wageningen University of Agriculture, www.wau.nl