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KENYA HORTICULTURAL DEVELOPMENT PROGRAM
OCTOBER 2003 – MARCH 2009

FINAL REPORT

April 2009

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fintrac

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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SECTION 1: EXECUTIVE SUMMARY

This is the final report for the Kenya Horticultural Development Program (KHDP), funded by USAID/Kenya under contract 623-C-00-03-00071-00 with Fintrac Inc. The report summarizes KHDP activities, results and impact during the period October 2003 through March 2009.

- **Activities focused on five strategic areas:** (1) SPS and standards compliance, food safety and product traceability; (2) domestic market growth; (3) product development; (4) development of Kenya-US trade in horticultural products; and (5) intensification of tree crop production, particularly in Coast Province. KHDP covered a large geographical area by de-centralizing operations and having field managers on the ground in Kisumu, Eldoret, Nanyuki Thika, and Mombasa. This allowed constant interaction with farmers and created strong relationships with local service providers. *(Pages 4-5)*
- **SPS Activities:** The project pioneered public/private initiatives during 2004-2007 to bring thousands of smallholder growers in line with new EU product standards. In 2008-09 the program shifted its emphasis to improving quality standards and food safety for the local market. Most smallholders growing for export are compliant with GlobalGAP. Training has been taken over by the private sector export companies. *(Page 6)*
- **Domestic Market:** KHDP beneficiary farmers increased their yields and incomes continuously throughout the life of the program. Farmers receiving direct assistance from KHDP-supported service providers increased their yields by more than 100 percent. Average annual production increases were also recorded by the MOA for KHDP target crops on a wider level. For example, production of tomato, onion, passion fruit, watermelon and butternut squash in target areas of Nyanza Province increased 21 percent, 15 percent, 15 percent, 26 percent, and 33 percent, respectively. In 2009, the Government approved a financing plan to establish a new Nairobi wholesale market complex in Kasarani. The proposed new \$30 million facility will transform fresh produce marketing in Kenya and could eventually become a regional distribution hub for fruits and vegetables. KHDP provided technical support for the pre-feasibility studies. *(Page 7)*
- **Product Development:** Target products for development were vegetables for the domestic market, passion fruit, cashew, mango, chili, sweet potato, flowers, vanilla and ASAL plant extracts. In the target areas of Rift Valley and Central Province, KHDP-assisted growers increased their average yields of purple passion fruit from an average of less than 10 tons per hectare in 2004 to more than 17 tons per hectare in 2008. More than 3,000 growers are now growing ABE chili under contract to three export companies, supported during start-up by KHDP, who are now shipping more than ten tons per month. Trials on three varieties of sweet potato were initiated with growers in Kwale in 2008-2009 and two varieties were selected by export companies for commercial development. Sales of flowers grown by KHDP beneficiaries have doubled since 2005. Cashew yields have increased fourfold. Semi-processed mango from Tana River growers, pioneered by KHDP, is now being purchased by major processors. Vanilla, tea-tree oil and other plant extracts are being grown for the first time by many growers and have great potential for the future. *(Pages 7-12)*
- **Kenya/US Trade:** The quantity of Kenya-US trade has tripled since 2004 but still accounts for less than 2 percent of total exports of horticultural products exported. Flowers, nuts (macadamia and cashew) and processed fruit (mainly pineapple) have been the most consistent exports and

have the most potential for growth in terms of market size, availability of products and competitiveness. KHDP supported FPEAK and KFC to promote Kenyan flowers at the World Floral Expo Miami trade shows in 2007/2008 and provided technical assistance to smallholders producing flowers, nuts and plant extracts (tea-tree oil, frankincense) for the US market. APHIS approvals for imports of Kenyan shelled peas, baby carrots and baby corn were achieved in 2007 and approval for fresh cut beans is imminent. This will offer some opportunities for fresh produce exports but more approvals are needed. *(Pages 12-13)*

- **Public-Private Partnerships:** The success and sustainability of Fintrac's approach to managing KHDP was due to strong working relationships developed with private sector companies to deliver services and make investments in target areas, and with Government agencies to deliver improved support services at a national level. In total, KHDP partnered with 55 private companies and 13 non-profit NGOs to provide technology transfer, market linkages and new income through smallholder production and employment. The activities initiated with most of these partners have created commercial relationships which are providing additional sustainable income to more than 50,000 beneficiaries and no further work will be required to maintain them at current levels. Most have built-in opportunities for diversification and growth which could justify future commercial and donor investments. Fintrac also managed a KHDP partners grant fund for co-investing with public and private sector organizations to leverage services which could lead to new income generating opportunities, particularly for small-scale growers. USAID approved a total of \$1.7 million for the fund which was invested through 48 different grant agreements. *(Pages 15-17)*
- **Policy Support:** Policy support to the industry in general was provided through technical back-up to the National Taskforce on Horticulture, through which KHDP coordinated activities on specific issues (e.g. GlobalGAP response) with relevant public and private sector stakeholders. The Taskforce provides a rapid response to Government, private sector and global partners on key challenges facing the industry including food safety management, EU pesticide-residue monitoring, international SPS notifications, fertilizer prices, water use and donor project coordination. The MOA and HCDA were assisted to complete a validation of national production statistics for the industry using 2005 as a baseline. The study showed that current land-based systems employed for data collection are completely inadequate for an industry as important to the economy as horticulture. Strategic support was provided to national trade associations FPEAK and KFC, as well as encouragement for full integration into one body, the Kenya Horticulture Council, which has started operating as an umbrella organization. *(Pages 17-18)*
- **Gender:** KHDP implemented a gender mainstreaming policy which received praise from a mid-term evaluation team and the USAID-funded GATE project. A model for gender-based value chain analysis was developed using data collected from passion fruit and chili grown by KHDP beneficiaries in Rift Valley and Western regions. An estimated 44 percent of participants in all forms of training provided by KHDP were women and youths. *(Page 19)*
- **Smallholder Income:** The 58,000 direct beneficiaries of interventions by KHDP and its BDS partners increased their annual net earnings from growing horticultural crops by an average Ksh 24,000 (\$340) between the time they joined the program and March 2009. Individual incomes ranged from less than Ksh 4,000 (start-up ABE chili growers at the Coast) to over Ksh 500,000 (second-year passion fruit growers in Rift Valley). The market-led approach followed by KHDP, the principle of service delivery through embedded costs adopted by most KHDP partners, and

the diverse range of target products and techniques made available to beneficiaries, ensures that this income is sustainable and has the potential to grow rapidly. The crops that contributed most to income generation were tomato (16 percent), passion fruit (13 percent), cashew (14 percent - Coast only), legumes (13 percent), onion (8 percent), cabbage (6 percent), ABE chili (4 percent) and flowers (4 percent). The national smallholder income from horticulture is estimated to have a farmgate value of \$630 million in 2008-2009. *(Pages 21-23)*

- **Trade:** The projected wholesale value of domestic trade for 2009 is Ksh 129 billion (\$1.72 billion). Direct and indirect beneficiaries of technical assistance will account for at least \$28 million, equivalent to 2 percent of this trade. Export trade is expected to drop by 18 percent over the previous year due to drought in many production areas and economic conditions in Europe which reduced demand, particularly in January-March 2009. *(Pages 24-25)*
- **Major Challenges:** The horticulture industry faces major challenges in relation to drought and water shortages, high fertilizer costs, global recession, food security, public-private cooperation, planning, policy, and trade diversification. *(Pages 26-27)*

SECTION 2: INTRODUCTION

Fintrac’s contract to manage KHDP started on October 1, 2003 and ended on March 30, 2009. Full details of contract modifications and a summary of the budget are given in Section 7.

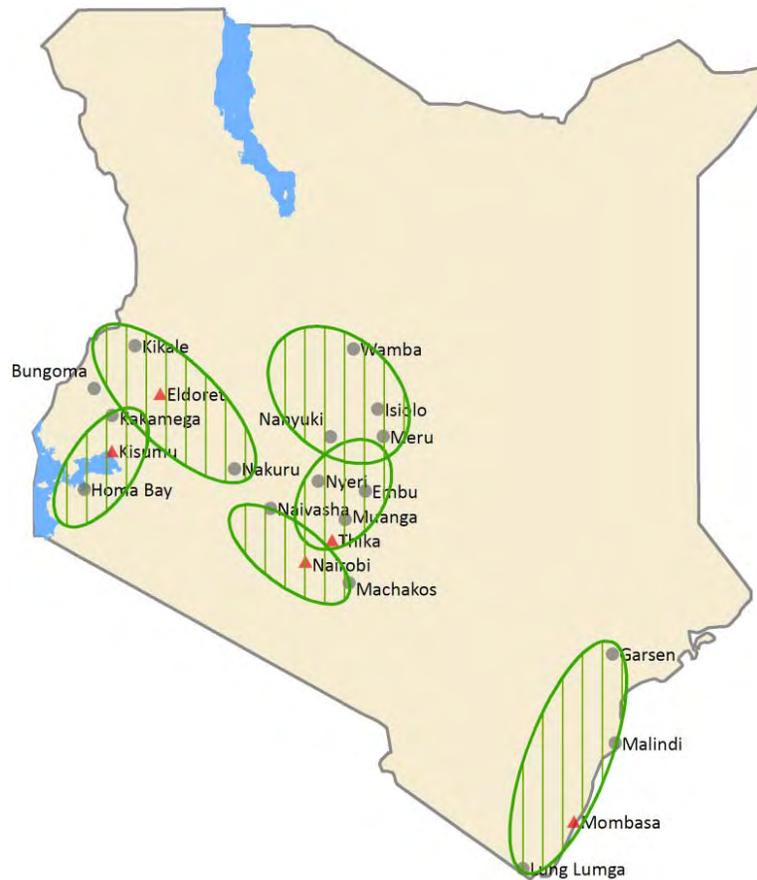
2.1 PROJECT OBJECTIVES

KHDP’s mission was to increase and sustain smallholder sales and incomes from the production and marketing of high-value and added-value horticulture crops and products, and to increase incomes from employment within the wider horticulture industry.

2.2 GEOGRAPHIC AREAS OF FOCUS

The Program covered a large geographic area by de-centralizing operations and having field managers on the ground in Kisumu, Eldoret, Nanyuki/Thika, and Mombasa. This allowed constant interaction with farmers and created strong relationships with local service providers. As a result, horticultural production has grown rapidly in areas of the country previously neglected by the industry. In turn this has led to investments by national seed suppliers and marketers to service growers in new areas. Good examples are vegetable and watermelon production in Nyanza and ABE chili production on the coast.

Figure 1: KHDP Geographic Coverage



2.3 KEY ACTIVITIES

The program focused on five strategic areas: (1) SPS compliance including GlobalGAP, USDA/APHIS entry approvals, EU food and feed regulations, and product traceability (2) domestic market growth; (3) product development; (4) promotion of Kenya-US trade in horticultural products; and (5) tree crop production, particularly in Coast Province. Target crop categories include passion fruit (fresh and processed), spices, smallholder flowers, tree crops (cashew, mango, moringa), plant extracts and local market vegetables.

2.4 APPROACH

In order to reach as many farmers as possible, Fintrac used an intensive BDS approach for implementation of KHDP, cooperating with many private sector partners (Annex 1) to deliver extension, marketing and other business services to large numbers of beneficiaries. Institutional strengthening and business development of smallholder associations for long-term sustainability was a major cross-cutting activity. Through direct technical assistance and BDS partnerships, 1,190 farmer groups received some type of institutional assistance from KHDP and its partners.

Technology transfer was implemented at the grass roots level through co-funding of extension services provided by partners and through demonstrations and field days managed by lead growers in farmer groups (Table 1). At the national level, company and public sector professionals were trained through trade associations such as FPEAK. The role of KHDP staff was to train trainers and manage partnerships. A total of 57,338 growers, input suppliers, processors, government workers, export company staff and other stakeholders were recorded at KHDP-assisted training events but, in practice there were many more beneficiaries who were not recorded. Final workshops were held for partners and beneficiaries in Kilifi (chili), Homa Bay (chili), Kisumu (vanilla) and Eldoret (passion fruit). A National Workshop to report on the achievements and lessons of KHDP was held in Nairobi in March 2009.

Table 1: Distribution of KHDP Demonstration Sites

Product	Area						Total
	Coast	Central	Rift Valley	Western	Nyanza	Eastern	
Passion fruit	3	18	26	1	0	6	54
Local vegetables	12	49	30	38	98	33	260
Cashew	213	0	0	0	0	0	213
Chili	2	0	13	16	44	36	111
Flowers	0	19	0	0	0	0	19
Vanilla	6	0	0	2	0	0	8
Sweet potato	6	3	0	0	0	0	9
Tea tree	0	6	0	0	0	0	6
Total	242	95	69	57	142	75	680
%	35	14	11	8	21	11	

In all aspects of its support to the horticulture industry KHDP actively promoted USAID's cross-cutting objectives of: gender mainstreaming; encouraging biodiversity and good environmental practices; working with marginalized communities (particularly in western and coastal areas); strengthening Kenyan businesses; increasing Kenya/US trade, and promoting global trading alliances.

SECTION 3: ACTIVITIES AND ACHIEVEMENTS

3.1 BACKGROUND

KHDP worked at the local and national levels to exceed all of the targets agreed with USAID/Kenya. Some of the outstanding achievements were:

- Creation of average sustainable new income of \$340 per annum for 58,000 direct beneficiaries (\$19 million total).
- Successful smallholder compliance with global standards, ensuring that horticulture will remain a major source of foreign exchange and contribute significantly to poverty alleviation through employment and income generation.
- Increases in yields of local market vegetables by more than 100 percent for direct beneficiaries.
- Growth of passion fruit production by 133 percent since 2004.
- Leverage of new investments of more than \$10 million in drip irrigation, fruit processing, standards compliance, and other technologies essential for a competitive industry.
- Promotion of horticulture as a strategic food security industry through both food and income generation.

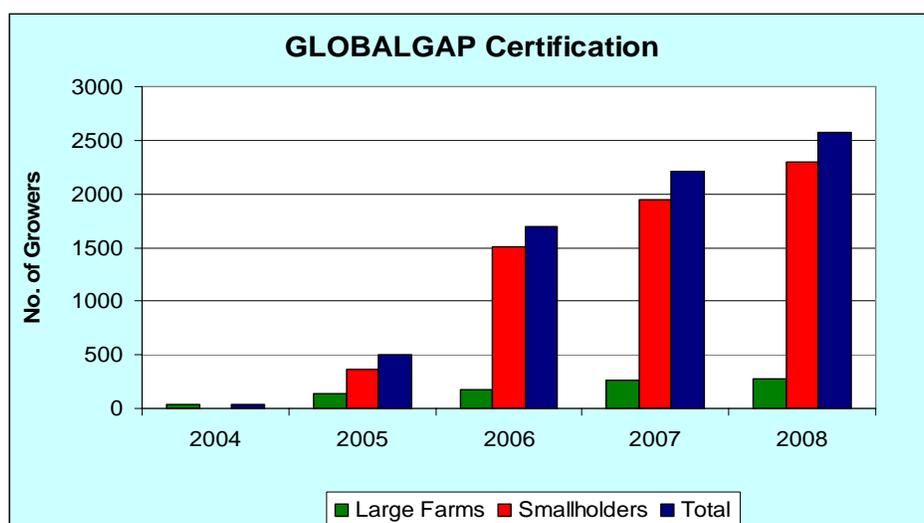
Income generation by small-scale farmers is described in detail in Section 4. Details on each key activity are given below in Sections 3.2-3.10.

3.2 SPS COMPLIANCE AND STANDARDS

The program pioneered public/private initiatives during 2004-2007 to bring thousands of smallholder growers in line with new EU product standards, primarily the private trade standard EurepGAP (now GlobalGAP) and new EU food and feed safety legislation. At March 2009, 2,350 smallholder suppliers had achieved GlobalGAP certification and most smallholders growing for export are now compliant with GlobalGAP and EU regulations even though many do not have formal certification. Training for compliance has been taken over by the private sector export companies and Kenyan produce has improved its competitive position in EU markets. The total number of smallholder suppliers of fresh produce and flowers for export is increasing and the average age of growers is decreasing.

In 2008-2009 KHDP shifted its emphasis to improving quality standards and food safety for the local market. This included a partnership with KEPHIS to fund random analyses of fresh produce for pesticide residues and to train growers supplying major supermarkets in good chemical application practices. As a follow up to this activity, the Kenya Horticulture Council (through FPEAK) was supported during 2009 to train more local suppliers in safe use of chemicals in partnership with Uchumi and Nakumat supermarkets. This partnership agreement included training of auditors to apply KENGAP as the new domestic standard for fresh fruits and vegetables sold in Kenya.

Figure 2: National GlobalGAP Certification of KHDP-Assisted Growers



3.3 DOMESTIC MARKET GROWTH

More than 300 demonstrations of improved production systems for local market fruits and vegetables including cabbage, tomato, onion, sweet potato, butternut squash, watermelon, passion fruit and African indigenous vegetables were completed. Beneficiary farmers increased their yields and incomes by more than 100 percent (see Annex 3).

The MOA and HCDA were assisted in the validation of national production data for 2002-2007. These reports showed that national productivity improvements were well above average for KHDP target crops and this effect was most pronounced in KHDP target areas. For example average annual production increases for tomato, onion, passion fruit, watermelon and butternut squash production in Nyanza Province were 21 percent, 15 percent, 15 percent, 26 percent and 33 percent, respectively.

Technical support was provided by KHDP advisors for urban market development, in partnership with the MOA, HCDA and Kenya Gatsby Trust. In December 2008, Government approved a financing plan prepared by UK consultants Infraco (funded by Gatsby) to establish a new Nairobi wholesale market complex in Kasarani. The proposed new \$30 million facility will transform fresh produce marketing in Kenya and could eventually become a regional distribution hub for fruits and vegetables. The long-term strategy includes rehabilitation of other markets such as Kangeme, and building of new markets in Mombasa and Kisumu.

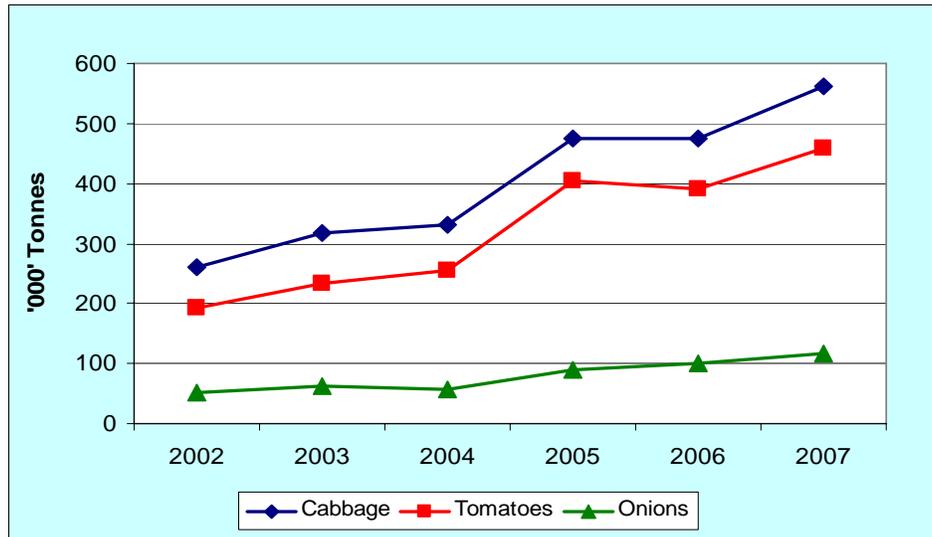
3.4 PRODUCT DEVELOPMENT

Domestic market vegetables

On average, KHDP-assisted growers in all areas (apart from the coast) generated more than 70 percent of their income from growing vegetables for the local market. High levels of adoption of hybrid seed and improved agronomic practices raised yields three-fold for tomato and four-fold for cabbage (Annex 3). At least 94 percent of the 58,000 beneficiaries adopted one or more new technologies. Demonstrations of low-cost greenhouse production which started in 2007 attracted massive interest; hundreds of growers are now producing hybrid tomatoes in greenhouses for the local

market. Although KHDP direct beneficiaries are only a small proportion of total growers, technical information was disseminated to many more thousands of growers through radio programs, advertising materials produced by input suppliers, MOA extension officers, HCDA regional offices and KHDP Monthly Technical Bulletins. As a result, production of KHDP target crops increased significantly across the country and the effect was most pronounced in KHDP target areas (Figure 3).

Figure 3: Impact of KHDP on National Vegetable Production 2003-2008

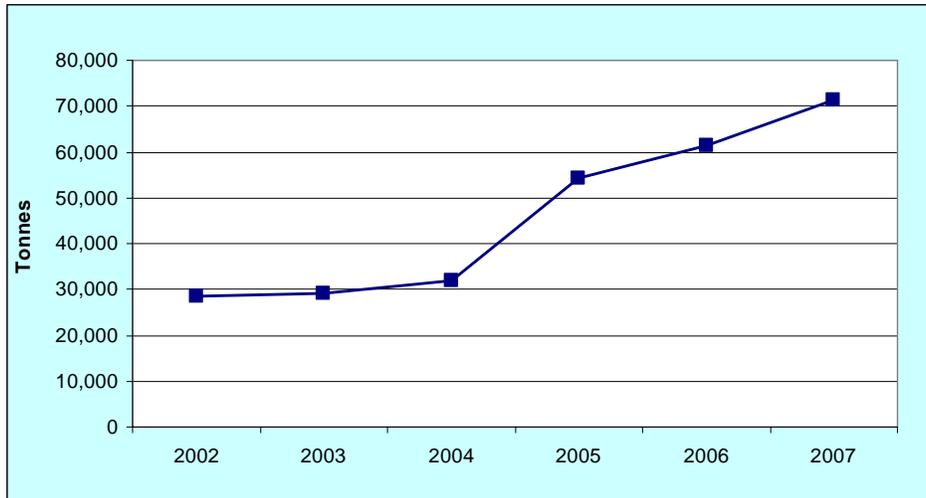


Purple passion fruit. In the target areas of Rift Valley and Central Province, KHDP-assisted growers increased their average yields from less than 10 tons per hectare in 2004 to more than 17 tons per hectare in 2009. Some achieved more than 25 tons per hectare. At an average price of Ksh 30 per kilogram, their gross margin was Ksh 630,000 per hectare or Ksh 250,000 per acre. MOA figures show that total production has increased by more than 40 percent since 2003 in Rift Valley and by more than 100 percent in Central Province. Technical support focused initially on solving technical production problems in partnership with KARI. The objective of this cooperation was to improve the quality of planting material and train growers in grafting techniques. Hundreds of groups and private nurseries now have the capacity to produce healthy passion fruit plants and demand is still growing. Through 2004-2008, thousands of growers were trained in improved cultivation techniques through local partnerships with KARI, MOA and independent trainers drawn from farmer groups and private companies. During 2008-2009 the emphasis shifted to consolidation of market linkages between growers, local and regional market brokers, and processors to ensure long-term sustainability. A value chain analysis was conducted for Rift Valley growers, including data collection from markets in Uganda where most of the production is sold. A final workshop was held for stakeholders in Eldoret with presentations by exporters, new processors, bankers and farmers as well as KHDP technical staff. A KHDP technical manual was produced and distributed to trainers.

Yellow passion fruit. In 2006-2007, KHDP provided technical support to Premier Foods to carry out a feasibility study for a large-scale fruit processing plant for yellow passion fruit and mango juice. Premier started site work on a new \$2.5 million plant in Malindi in 2008. It will process 25,000 tons per year of fruit from growers in Coast Province. Premier is also buying chili for processing. KHDP provided training to 14 extension workers hired by Premier to support the operation. Premier also advanced funds to 400 new growers to buy poles and wires needed for trials and demonstrations. Smaller-scale farmers will grow vines using standing trees as supports. This system creates economic

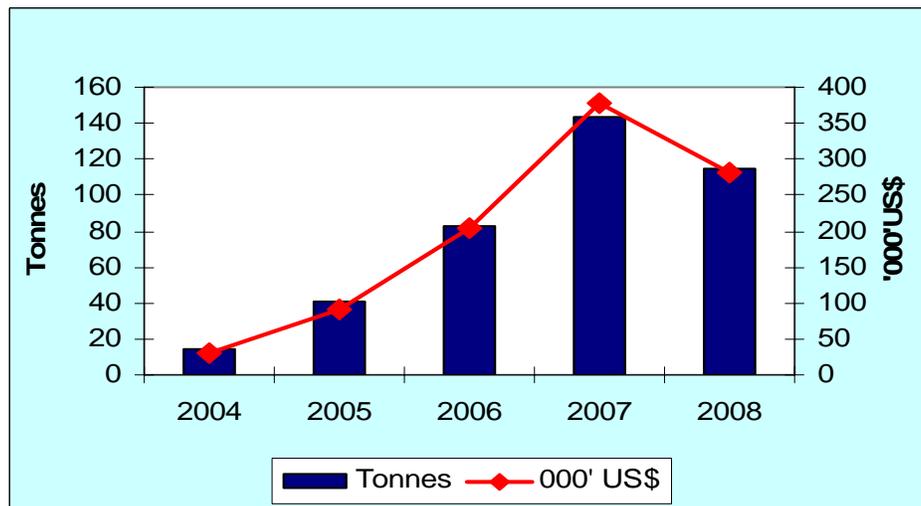
benefit from trees which might otherwise be removed, produces high quality passion fruit, and requires no start-up capital. In October/December 2008, the first 120 tons of fruit were harvested and transported to Nairobi for processing, generating new income of Ksh1.8 million. The plant is scheduled to be completed by the end of 2009. By 2010 the factory will provide a market for more than 10,000 growers of passion fruit, pineapple and mango. After consultation with KHDP, Equity Bank has targeted passion fruit growers as a new client category and has started lending for expansion to some of KHDP's more successful beneficiaries in Coast, Rift Valley and Central production areas.

Figure 4: Impact of KHDP on National Passion Fruit Production



African Birds Eye Chili. This is a labor-intensive cash crop which can be grown in low rainfall areas with minimal inputs. KHDP partnered with processor Mace Foods in 2004-2008 to increase production from more than 2,000 smallholder growers. Mace buys chili that is dried by the growers at the village level. Two other companies came into the market in 2005 and 2007 and are now buying fresh chili in Eastern and Coast Provinces, for drying and export to Europe, while Mace Foods still dominates the market in Western Kenya. KHDP trained extension workers from all companies.

Figure 5: Impact of KHDP on ABE Chili Exports

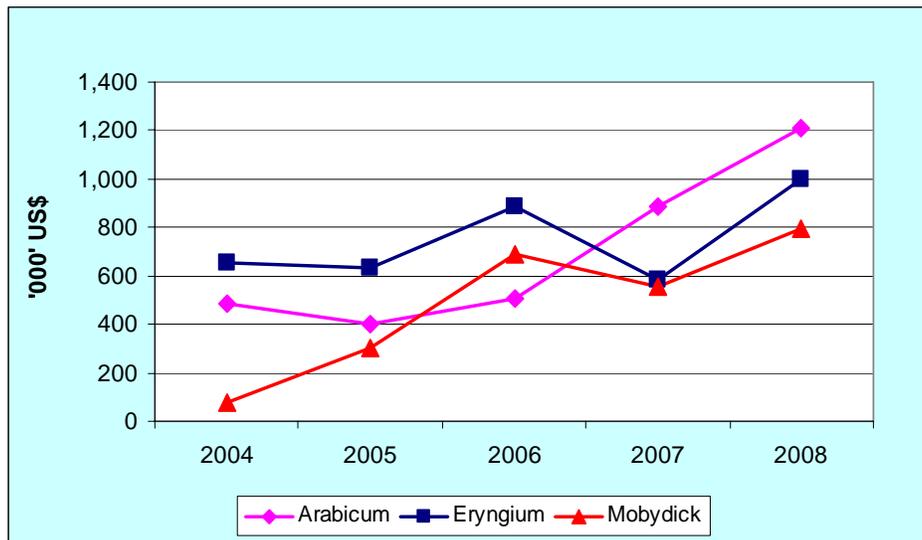


At the coast, chili reached a sustainable commercial scale in 2008 when the first container-load of 100 percent coastal chili was exported directly through Mombasa port by Equator Products. Clonal selection trials to improve the quality of chili seed were funded by KHDP in partnership with Moi University in Eldoret. Kenya is on target to become the market leader for this product in Europe. Two-day close-out workshops were held in Kilifi and Homa Bay for all stakeholders and KHDP technical manuals were distributed.

Sweet potato. Sweet potato has been promoted by KHDP as a food security crop since 2004. In 2007, a partnership was initiated with Sunripe, a major export company, to identify orange-fleshed/red-skinned types suitable for export. Trials were carried out by Sunripe in Naivasha, Mwea and Kwale with technical advice provided by KHDP. Two varieties were identified with suitable storage and market characteristics. In future, Sunripe will contract growers to produce commercial quantities of these varieties in coastal and western areas where climatic and soil conditions are suitable for sweet potatoes. Lower transportation costs to Mombasa port, light soils, which do not damage the potato skin during harvesting, and high temperatures, which accelerate skin curing, provide competitive advantages for coastal growers of sweet potato and other root crops. Production in other areas is also essential to provide continuity of production throughout the year. The main challenges are water management and the relative inexperience of growers with commercial production systems. Wastage is not a problem, since grades which are not exportable will be consumed by growers and sold locally. When quantities reach commercial levels, Sunripe will invest in curing and storage facilities in Mombasa.

Floriculture. Flowers accounted for 54 percent of horticultural exports in 2008 (Ksh value). Roses, carnations lilies and other high value cut flowers, grown in modern greenhouses, still make up the bulk of exports but the contribution of smallholder field-grown flowers has doubled since 2004.

Figure 6: Impact of KHDP on Smallholder Flower Exports



Three market factors are responsible for this emergence of smallholders in the flower industry:

- European consumers have become more interested in variety and in unusual flower types which provide niche opportunities for small-scale growers;

- Kenyan companies have become competitive with European importers for ready-made bouquets which use a much wide range of flowers and foliage; and
- The emergence of corporate social responsibility as a marketing tool means that exporters have become more aware of consumer demand for fairly sourced and traded products.

Although floriculture was not originally in KHDP's portfolio, a market study on smallholder flower opportunities carried out in 2004-2005 confirmed its potential. The study showed that market demand was increasing and that flowers potentially provided greater returns than any alternative crop for growers with less than one acre of productive land. Woman-headed families stood to gain the most. Based on this value chain analysis, partnerships were implemented with national trade associations (FPEAK and KFC) and with two companies, with the objective of increasing smallholder income from flower production. The Associations were assisted to promote flowers from Kenya at trade fairs in Holland and the USA, with an emphasis on fair trade, environmental conservation and smallholder participation. Kenyan floral arrangers sponsored by KHDP to create the displays won awards for their work. Production trials and postharvest training were carried out for more than 2,000 small-scale flower growers in Central and Rift Valley areas, in partnership with extension workers from Nature Grown Flowers. Sample bouquets were sent to Asda/Wal-Mart (UK) made entirely from smallholder flowers. Through a KHDP partnership with Rosavie, a company specializing in high value preserved flower arrangements, 200 growers received orders to supply new flower varieties. KHDP provided funds and technical guidance for research (by KARI) necessary for commercialization.

Vanilla. In 2003, when KHDP started, there was a large demand for information on vanilla because of the high prices being obtained by Ugandan vanilla growers at that time. Many vanilla vines had been brought across the border from Uganda and planted in Kenya without any technical assistance. A review of weather data backed up by some field demonstrations in 2004 showed that coastal and western Kenya are the only places where temperature and humidity are high enough to make competitive vanilla cultivation possible. Since then, technical assistance has been provided to growers in Malindi and in Nyanza through BDS providers Trees and Bees and VI Agroforestry respectively. Investments by UNDP and Italian NGO CISP around Malindi have gradually increased the number of growers to more than 800. They have employed four extension workers who were trained in vanilla production systems by KHDP. Two growers have planted more than 3,000 vines and will invest in processing facilities in 2009. They will provide a market for green vanilla produced by other small-scale producers. Many of the growers in Malindi and Nyanza have planted *Jatropha* and moringa as shade and support plants for the vanilla and were shown how to prune trees to increase seed yield. They will start to produce seeds for oil production in 2009.

Oils and extracts. Trees and plants for oil extraction have good potential in ASAL areas but their development requires specialized agronomic, environmental, processing and marketing knowledge. KHDP partner Earthoil has successfully established a sustainable tea-tree project with 400 organically-certified growers in Naromoro. Earthoil provides extension, credit and oil extraction facilities to growers as well as marketing the product. The tea-tree oil is sold to Body Shop, a subsidiary of US multinational cosmetics company L'Oreal. Growers have planted almost two million trees and will produce an estimated 10 tons of oil in 2009, generating new income of \$1,300 per grower. KHDP provided business and institutional training to Earthoil staff and grower associations to enable them to obtain a seven-year community trade contract with Body Shop.

KHDP provided intermittent advice to the Laikipia Wildlife Forum and Kenya Aloe Working Group on aloe production systems. Despite the interest and investment in conserving aloe *secundiflora* as

part of the natural ecosystem in pastoral areas of northern Kenya, marketing remains the key constraint. The EU-funded aloe processing plant, established in Baringo in 2007, remains unutilized.

3.5 KENYA/US TRADE

The quantity of Kenya-US trade has tripled since 2004 but still only accounts for less than 2 percent of total exports of horticultural products (Figure 7). Flowers, nuts (macadamia and cashew) and processed fruit (mainly pineapple) have been the most consistent exports and have the most potential for growth in terms of market size, availability of products and competitiveness. KHDP supported FPEAK and KFC to promote Kenyan flowers at the World Floral Expo Miami trade shows in 2007 and 2008. Three Kenyan flower export companies, assisted with market contacts by KHDP, now have permanent offices in the US. They are optimistic about future sales, particularly into the Fair Trade niche where Kenya has a comparative advantage over Latin American suppliers. In March 2008, KHDP worked with USDA and APHIS to organize a visit by KFC and FPEAK to observe APHIS procedures related to product inspection and entry approvals for Kenyan products. However, cancellation of the planned direct flights between Nairobi and Atlanta by Delta Airlines, due to start in June 2009, had a negative impact on the market image of Kenyan flowers.

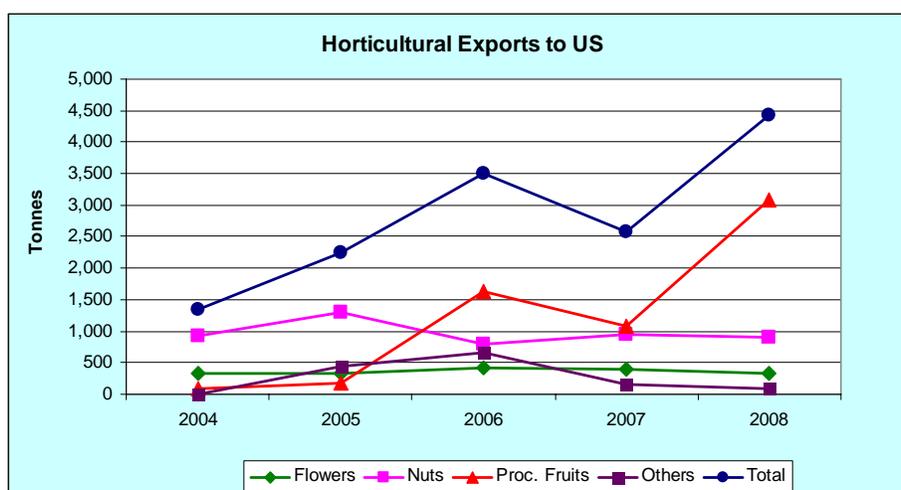
Growth of nut exports to the USA over the past five years was constrained more by supply factors than market demand. KHDP focused on increasing productivity of cashew at the coast and macadamia in central areas. Beneficiaries who adopted improved techniques achieved tenfold increase in production and income but we estimate that no more than 10 percent of all trees have been rehabilitated to a commercial level so far. More work is needed. Macadamia companies have been suffering from the poor quality of nuts supplied by small-scale growers. To combat this problem, KHDP and KARI provided training to more than 30 field staff from nut processing companies and input suppliers. Raw nut exporters still buy more than 50 percent of all cashew and 30 percent of macadamia for export to India and Vietnam.

Del Monte pineapples slices and concentrate are the leading processed fruit products exported to the US from Kenya, produced from pineapple grown on Del Monte's plantation in Thika. However, in 2008, Del Monte agreed to work with KHDP to source single strength mango and passion fruit juice from local processors buying from small-scale producers. Tropical juice products made from these fruits have long-term market potential in the US.

KHDP worked closely with Frigoken, Kenya's largest processor of smallholder vegetables for export, and US importer Metzger Specialty Brands to initiate shipments of "hand-arranged", canned French beans. As of March 2009, price and demand discussions were continuing. However, if the dollar remains strong and ocean freight rates remain low, the prospects remain good for developing this trade in high value processed vegetables.

Oils and plant extracts for natural medicinal products and cosmetics have some growth potential in the US market although the total market size is relatively small and technical specifications are strict. KHDP provided training to growers and to the technical support staff of Earthoil and Lubanchem who process the extracts for export to the US. Both companies attended the Natural Products Expo trade show in Boston in January 2009 with technical support on promotional materials from KHDP. The fair was a great showplace for new Kenyan products with more than 500 exhibitors and 5,000 visitors. Orders were obtained for shea butter, Frankincense, myrrh, tea-tree oil, bixa seeds, moringa, mango and passion seed oils from several leading US companies.

Figure 7: Exports of Horticultural Products to the US



Fresh produce exporters received promising enquiries for high value mixed packs of fresh cut vegetables following US trade visits sponsored by USDA with KHDP assistance earlier in 2008. KHDP continued to provide technical support on production and postharvest handling through March 2009 to export companies who have pioneered the development of these novel products, which are not available from Latin American growers supplying the US market. However, further progress is hampered by the slow rate of USDA entry approval for Kenyan fresh products. To date, shelled peas, baby carrots and baby corn are the only three approved for entry out of the range of more than twenty types of vegetables and herbs used in the packs.

3.6 TREE CROPS

Most tree crop activities were implemented with growers and other partners at the Coast where there are many under-utilized, neglected mango and cashew trees and opportunities for other crops are limited. Target tree crops were mango, cashew, moringa and coconut.

Mango interventions focused on improving postharvest handling, processing and marketing systems since much of the mango grown in the main production areas of Tana River and Malindi is not marketed commercially. The main problem is that access roads are in poor condition and mango harvest seasons in July and December coincide with heavy rains which make the roads impassable. Initially, funds were provided to establish four collection centers and technical assistance provided at the centers to reduce wastage and improve the quality of fruit delivered to partner companies Retief (dried mango products) and Milly Fruits (fruit juices). Although the growers were able to obtain a 20 percent premium on their fruit, it did not solve the fundamental problem of moving fresh fruit long distances on bad roads in the rain.

Consequently, in 2007 KHDP changed its strategy to support the development of low-cost processing as close as possible to the production area. Funds and technical assistance were provided to growers and Retief to produce frozen mango pulp at Retief's farm in Malindi. Mango collection centers serving about 2,000 growers on the Tana River were upgraded and training in group management, business skills and postharvest technology provided to growers. After two seasons of testing systems for efficiency and distributing samples to many processors, orders for frozen pulp were placed by Kevian, Del Monte, Essential Seeds, Juice-it-Up and other juice producers in Nairobi. In 2009, Del

Monte placed a permanent order for frozen pulp of up to 500 tons/year which is equivalent to the full capacity of the current equipment. The semi-processing system developed with Retief has great potential for transfer to other sites on the Tana River. New investment by fruit processing companies will follow quickly, providing a sustainable market for growers and allowing new mango trees to be planted without risk.

Cashew interventions focused on increasing productivity of cashew trees through a coordinated program agreed with the Cashew Technical Committee (comprised of all public, private and donor stakeholders in the cashew sector). KARI and the MOA were funded to train 46 cashew production groups comprising more than 2,000 farmer beneficiaries. Bayer East Africa co-funded spraying equipment and training which was carried out by KARI, MOA extension staff and private sector partners. K-Rep bank provided small loans for growers to pay for agrochemicals, tree pruning and spraying by specialist tree management teams. Yields and incomes for growers who adopted better management systems increased from less than 2 kilograms/tree to more than 10 kilograms/tree. The rate of loan repayment is slow but K-Rep is continuing with the program and improving its education and collection systems in rural areas. Equity Bank and other microfinance agencies have also started to fund cashew growers using the same model.

Figure 8: Nut Exports 2004-2008

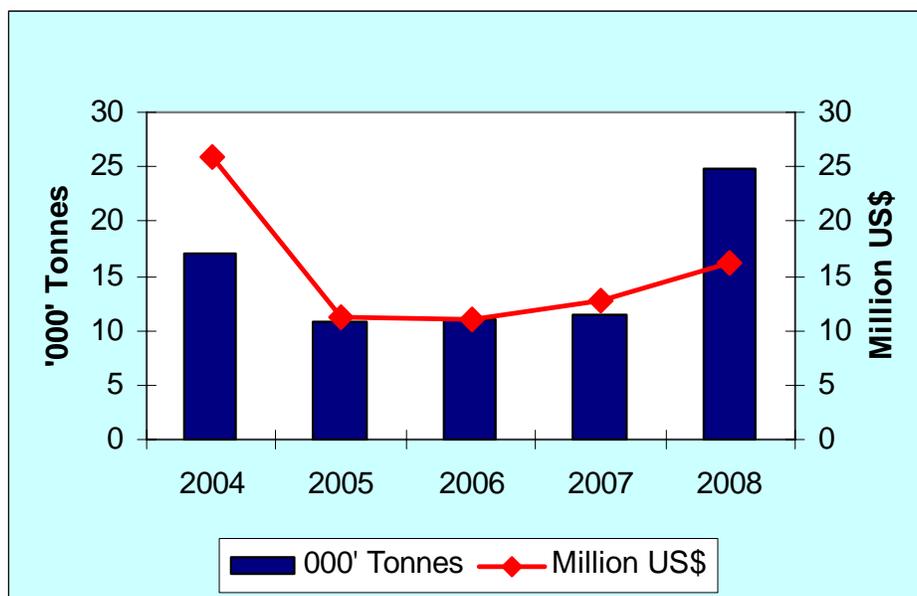


Figure 8 shows the combined exports of cashew and macadamia nuts since 2004. High macadamia prices in the world market in 2003-2004 led to opportunistic buying and exporting of immature and poor quality raw nuts. This created a market backlash against Kenyan macadamia and exports slumped by 55 percent in 2005-2006 due to lack of demand. In 2007, KHDP started working with a stakeholder group of macadamia processors, KARI and input suppliers in Central Kenya to re-train outgrowers on production and quality control. As a result, quantity and demand for macadamia nuts improved in 2007-2008. At the same time, heavy rains at the coast during flowering in 2006-2007 reduced cashew production, keeping combined nut exports low for three years. In 2008, cashew growers harvested a good cashew crop as technical assistance took effect and total nut exports doubled in quantity.

Minor interventions were made to increase production of moringa and bixa in response to demand from local processing companies Earth Oil and Lubanchem, respectively. Moringa seed oil is in demand from cosmetics companies and bixa seed provides a natural red coloring agent for the food industry. Both products have potential for smallholders but more work is required to establish sustainable value chains. Business development advice was also provided to local company Kokos for production of coco peat and to US-based Dunia Blu on coconut oil extraction.

3.7 PUBLIC-PRIVATE PARTNERSHIPS

The success and sustainability of Fintrac’s approach to managing KHDP was due to strong working relationships developed with private sector companies to deliver services and make investments in target areas, and with Government agencies to deliver support services at a national level. Some of these have been referred to above and a full list is given in Annex 1. In total, KHDP partnered with 55 private companies and 13 non-profit NGOs to provide technology transfer, market linkages and new income through smallholder production and employment. The activities initiated with most of these partners have created commercial relationships which are providing additional sustainable income to more than 50,000 beneficiaries and no further work will be required to maintain them at current levels. Most have built-in opportunities for diversification and growth which could justify future commercial and donor investments.

Fintrac also managed a KHDP partners grant fund for co-investing with public and private sector organizations to leverage services which could lead to new income generating opportunities, particularly for small-scale growers. USAID approved a total of \$1.7 million for the fund which was invested through 48 different grant agreements. This fund was a driving force in the implementation of all activities described in this report and was acknowledged by the SO7 evaluation team as one of the program successes which should be replicated. A financial summary of all agreements is given in Annex 2 and summarized below in Tables 2 & 3.

Thirty-one service providers received cost-share grants (Annex 2). All were locally-based, Kenya-owned and managed organizations. Private companies receiving grants ranged from small-scale women-owned business such as Kasarani Fresh fruit processors and Mace Foods producing dried chili products, to large-scale export processors such as Woni Veg-Fru and Nature Grown Flowers who buy vegetables and flowers almost exclusively from smallholder growers.

Table 2: Partner Distribution of PF Grants by Grantee Type

Category	Smallholders	NGO's	Firms	GOK	Trade Ass.	Total	%
Smallholder fund	221,328					221,328	13%
Standards			225,698	8,923	4,340	238,961	14%
Marketing	38,119		18,186		208,112	264,417	15%
Research			20,880	60,415		81,295	5%
Extension/Training		164,189	188,341	172,398		524,928	31%
New Products			389,334			389,334	23%
Total - \$	259,447	164,189	842,439	241,736	212,452	1,720,263	100%
%	15%	10%	49%	14%	12%	100%	

A total of 15 percent of grant funds were disbursed directly to smallholder groups under the four National Smallholder Fund agreements (TF 1-4). Using this mechanism, 840 smallholder groups received cost-share grants averaging \$270 per group to fund demonstrations of new crops and

technologies, training and product development. Typically, KHDP provided planting materials and other inputs for trials while beneficiaries supplied land, labor and inputs, often supplemented by contributions from input suppliers, buyers, GOK institutions and other donors. Forty-four grants were provided to co-fund new services to smallholders in SGS/standards compliance/food safety (6), market development (7), research (3), extension and training (16), and new product development (12). Primary grantees included private sector companies (49 percent), GOK agencies (KARI and KEPHIS – 14 percent), trade associations (14 percent) and non-profit NGOs (10 percent). However, in every case the target beneficiaries for services provided with grant funding were smallholder producers of horticultural crops and products.

Funds were distributed primarily in six regions of the country (Table 3). Coast Province received the highest proportion of direct grant funding (29 percent). This was specifically requested by USAID in Contract Modification 6 to address poverty alleviation concerns in coastal areas. Central Province received 19 percent of funds, mainly to assist on compliance with new trade standards which, in 2003, threatened the livelihoods of many families in Central Kenya depending on small-scale production of export vegetables.

Table 3: Geographical Distribution of PF Grants

Category	No.	Western	Nyanza	Rift Valley	Central	Eastern	Coast	Total	%
Smallholder fund	4	34,512	38,076	38,076	38,076	34,512	38,076	221,328	13%
Standards	6	13,386	13,386	25,818	135,628	46,976	3,767	238,961	14%
Marketing	7	12,895	12,895	110,579	61,791	53,361	12,895	264,417	15%
Research	3	10,301	10,301	20,040	14,377	13,238	13,038	81,295	5%
Extension/Training	16	82,265	113,238	35,054	33,729	28,100	232,543	524,928	31%
New Products	12	26,887	26,887	29,224	48,768	54,437	203,133	389,334	23%
Total - \$	48	180,246	214,783	258,791	332,369	230,624	503,452	1,720,263	100%
%		11%	13%	15%	19%	13%	29%	100%	

Growers in Western, Nyanza and Rift Valley growers benefited from 39 percent of funds during the overall life of KHDP, rising from less than 30 percent in the early years to more than 45 percent in 2008-2009 as horticulture activities accelerated and demand for services increased

Some of KHDP's most successful partnerships were implemented without using grant funds, including:

- Premier Foods is currently building a new \$2.5 million processing plant which will source fruit from 20,000 growers at the coast. KHDP provided technical support from feasibility study through to the first planting and training of producers groups in business development.
- Vegpro invested in a new vegetable packhouse in Mombasa.
- Sunripe invested in sweet potato production trials in partnership with smallholder groups in Central and Coastal areas.
- Del Monte contracted to buy frozen passion fruit and mango pulp from KHDP partners Kasarani Fresh, Retief and Sunny Processors.
- FPI invested in a new processing plant for passion fruit serving 6,000 HIV/AIDS-affected families in Nyanza and Western Kenya.

- Frigoken invested in trials to produce frozen sweet potato and butternut squash.

In all cases KHDP provided market analysis, technical advice on target crops and field support to mobilise smallholder suppliers. In total, we estimate that farmers and partners invested at least \$10 million in new activities supported by KHDP over the life of the program.

KHDP has been the lead donor-funded program for the horticulture industry since 2003 and has cooperated and provided technical support to various other donor interventions:

- The Netherlands - Following a feasibility study conducted by KHDP consultant Jim Vernon, assisted by chief-of-party Steve New in 2008, the Royal Netherlands Embassy confirmed a €1.0 million grant in 2009 to help establish a new vocational training center for the horticulture industry. The center will be established at KARI (Thika) and will be self-financing. The study was conducted with full participation of the leading vegetable and flower export companies who identified the lack of short-term practical training courses as one of the key constraints facing the industry.
- IFAD – Following many consultations with KHDP and other stakeholders, IFAD initiated a \$15 million project Smallholder Horticulture Marketing project (SHoMAP) in 2008. The project will fund the MOA to assist smallholders in market infrastructure and value chain analysis in selected areas of Western, Rift Valley and Eastern Provinces.
- JICA - In cooperation with HCDA, JICA is funding the Smallholder Horticulture Enterprise Project (SHEP) in Rift Valley. KHDP provides technical support to field operations.
- GTZ – In cooperation with the MOA, GTZ funds the Private Sector Development of Agriculture (PSDA) project at national level. KHDP provided technical support for value chain studies on passion fruit, potato, mango and sweet potato.
- EU – The European Union supports Kenyan companies and farmers with training and technical assistance to meet EU food hygiene and traceability standards through the Pesticide Initiative Programme (PIP). KHDP worked closely with the PIP team to coordinate training and compliance activities.

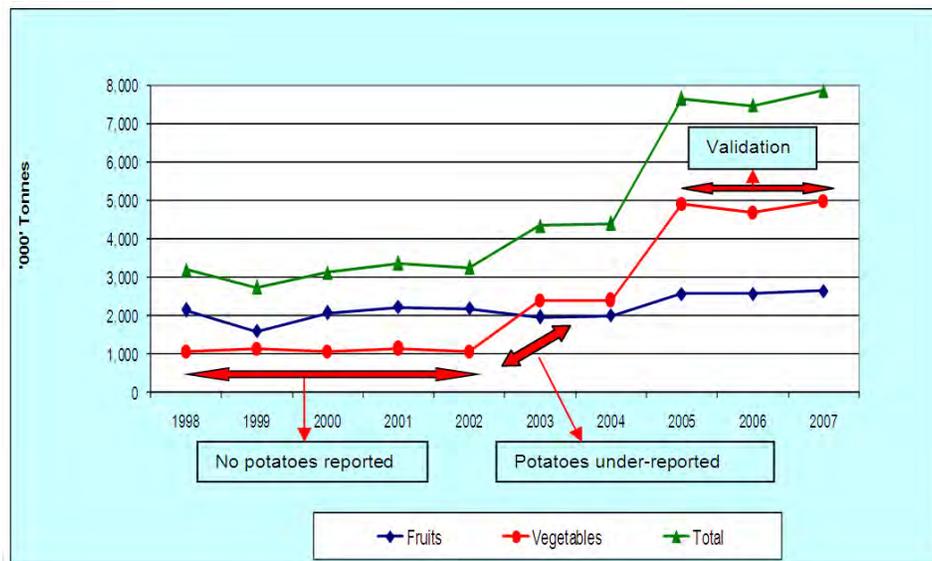
3.8 POLICY SUPPORT

Policy support to the industry in general was provided through technical back-up to the National Taskforce on Horticulture, through which KHDP coordinated activities on specific issues (e.g. GlobalGAP response) with relevant public and private sector stakeholders. The Taskforce is an informal group comprising representatives of all key private and public sector stakeholders, coordinated by KEPHIS. It is not a legal entity and has no official implementation function or capacity to implement activities. However, it provides a rapid response to Government, private sector and global partners on key challenges facing the industry including food safety management, EU pesticide-residue monitoring, international SPS notifications, fertilizer prices, water use and donor project coordination.

The MOA and HCDA were assisted to complete a validation of national production statistics for the industry using 2005 as a baseline. The study showed that current land-based systems employed for data collection are completely inadequate for an industry as important to the economy as horticulture.

Most of the historical reports reviewed were inaccurate and inconsistent and provided little useful information for public sector planners or private sector investors (Figure 9).

Figure 9: Under-reporting of Production Data illustrated by KHDP/HCDA Validation Study



Monitoring of trends in domestic and regional market demand and consumption was impossible. Erroneous data was found in the information flow from the MOA and HCDA to the Bureau of Statistics, KRA and CBK, creating misunderstandings and confusion on the state of the industry which can in turn lead to inappropriate taxation and regulatory policies. A completely new system employing GPS equipment, satellite imaging, and computerized data handling systems is urgently needed.

Strategic support was provided to national trade associations FPEAK and KFC, as well as encouragement for full integration into one body, the Kenya Horticulture Council, which has started operating as an umbrella organization. A full merger is necessary to represent the industry nationally and globally. At the same time, technical assistance was provided to HCDA in an attempt to steer it towards being a real service provider to the industry and a link between the private sector and Government. These changes are essential for Kenya to continue its progress towards being a global supplier of horticultural products. Kenya's unique position in supplying developed markets with crops and products grown by hundreds of thousands of smallholders is a major selling point. In 2009, the Executive Director of FPEAK was taken on to the Board of GlobalGAP with responsibility for representing smallholder producers globally. Good marketing of this positive aspect of Kenyan horticulture will bring new investment in future, but it requires committed public-private cooperation.

In November 2008, the National Food Safety Control Committee was formed as an official control system with cross-sectoral mandate. However, national mechanisms do not exist for implementation of food safety measures. Training and regulation at all points in the food chain are essential. However, the unregulated and chaotic operation of urban markets where more than 90 percent of fresh vegetables are sold is a major constraint to implementation of food safety policy. KHDP, in cooperation with the Gatsby Trust, assisted government to obtain a pre-feasibility study and investment proposal for a modern wholesale market in Nairobi. Since this is consistent with Vision 2030, the proposal was approved by cabinet committee in November 2008 and funds allocated provisionally towards the \$30 million investment. The market site and building will be a Government

investment but facilities will be supplied by users and market operations will be managed by a private company.

3.9 GENDER

An estimated 44 percent of participants in all forms of training provided by KHDP were women. Specific initiatives by KHDP to optimize the participation of women in the industry included:

- Establishing and achieving targets for technical assistance and training of women clients;
- Recognizing the different needs of men and women when designing and delivering training and technical assistance;
- Introducing low input, high value crops which encourage the development of non-traditional industries that involve the whole family approach;
- Using a decentralized approach so that extension workers can reach women at field sites;
- Extending group demonstrations to household farms where women and men can participate equally;
- Tailoring specific training activities with time sensitivity to maximize participation;
- Incorporating principles of gender mainstreaming into the group leadership training;
- Formalizing client & partner agreements to protect the input of women from being marginalized;
- Ensuring that at least 40 percent of new trials and demonstrations are managed by women;
- Introducing women to cash crops which are not generally grown by men;
- Establishing marketing contracts between women's groups and buyers;
- Training of partners and extension workers on gender issues; and
- Establishing partners fund agreements with women-managed/owned companies (Annex 2).

KHDP staff Tabitha Runyora and Geoffrey Nyamota conducted detailed gender-based value chain analyses of passion fruit and chili in Rift Valley and Western regions, in cooperation with USAID's Greater Access to Trade and Enterprise (GATE) project. The passion fruit value chain work was extended to focus on potential benefits to HIV/AIDS-affected households, through a cooperative project with Family Preservation Initiative (FPI) and Moi Teaching Hospital. The results provided good evidence that passion fruit production and processing is providing new employment and income generation opportunities for women and vulnerable households throughout the value chain. The study will contribute to continued growth of the passion fruit industry including new investments in processing. It also highlighted KHDP's technical contribution to rehabilitation, increased production and income generation from passion fruit in these areas since 2004.

3.10 NATURAL RESOURCE MANAGEMENT

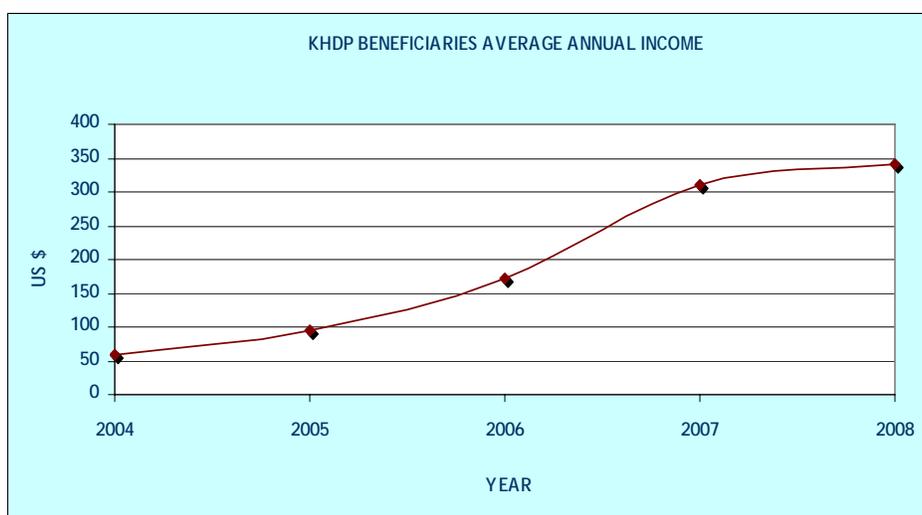
Technical assistance on good environmental management was provided to all KHDP partners and beneficiaries. Good practices included:

- GlobalGAP certification of smallholders (this international standard includes strict environmental conditions);
- Pest and disease scouting and IPM systems for all crops, which are being widely adopted to save money on agrochemicals;
- Drip irrigation to reduce water use – more than 500 growers adopted this for the first time;
- Tree planting – more than 3,000,000 seedlings of cashew, mango, jatropha, moringa and tea-tree were planted by KHDP-assisted growers;
- Companion planting of vanilla to protect standing trees through economic utilization;
- Water and nutrient conservation through leguminous cover crops, mulching and minimal tillage;
- Use of beneficial insects, trichoderma and mycorrhizae produced by KHDP partner, the Real IPM company;
- Use of hybrid seeds and improved planting materials with greater disease tolerance following demonstrations by KHDP partners Seminis, Hygrotech, Osho Chemicals and others; and
- Utilization of animal traction, tools, and machinery to minimize soil compaction, pioneered by KHDP partner ADPP.

SECTION 4: SMALLHOLDER INCOME

Income data collected from a sample of 7,000 KHDP-assisted growers in 2009 showed that the 58,000 direct beneficiaries of interventions by KHDP and its BDS partners had increased their annual net earnings from growing horticultural crops by an average Ksh 24,000 (\$340) between the time they joined the program and March 2009. Individual incomes ranged from less than Ksh 4,000 (start-up ABE chili growers at the Coast) to over Ksh 500,000 (second-year passion fruit growers in Rift Valley). The market-led approach followed by KHDP, the principle of service delivery through embedded costs adopted by most KHDP partners, and the diverse range of target products and techniques made available to beneficiaries, ensure that this income is sustainable and has the potential to grow rapidly for motivated growers.

Figure 10: Average Income of KHDP Beneficiary Growers, 2004-2009



Despite the progress made by KHDP, regional disparities still exist in income from horticulture (see Figure 11). Average beneficiary incomes at the Coast are the lowest in the country and dependent still on cashew sales. However, average incomes have risen 90 percent since 2005 with the introduction of chili, passion fruit, sweet potato and vegetables as cash and food crops.

KHDP beneficiaries in Western and Central areas achieved the highest rate of increase. Focused attention on target areas in Rift Valley and Western resulted in KHDP-assisted growers in those areas achieving similar incomes to those in Central Province. This is supported by MOA national production figures which indicate high rates of growth in production of passion fruit, tomato and other vegetables in Western and Rift Valley.

The crops that contributed most to income generation were tomato (16 percent), passion fruit (13 percent), cashew (14 percent - Coast only), legumes (13 percent), onion (8 percent), cabbage (6 percent), ABE chili (4 percent) and flowers (4 percent). Growers in Coast Province remain largely dependent on cashews, mangos and coconuts for income, but new crops introduced by KHDP are making rapid progress from a zero base. Local market sales accounted for more than 70 percent of income in the rest of the country, although some growers in Rift Valley obtained exceptionally high returns from passion fruit sales to Ugandan brokers.

Figure 11: Regional Variation in Income of KHDP Beneficiary Growers, 2004-2009

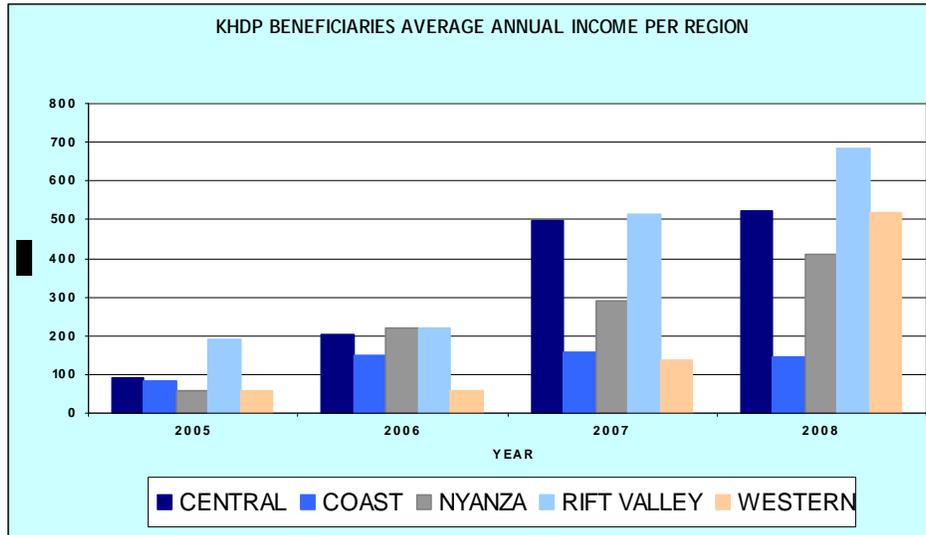
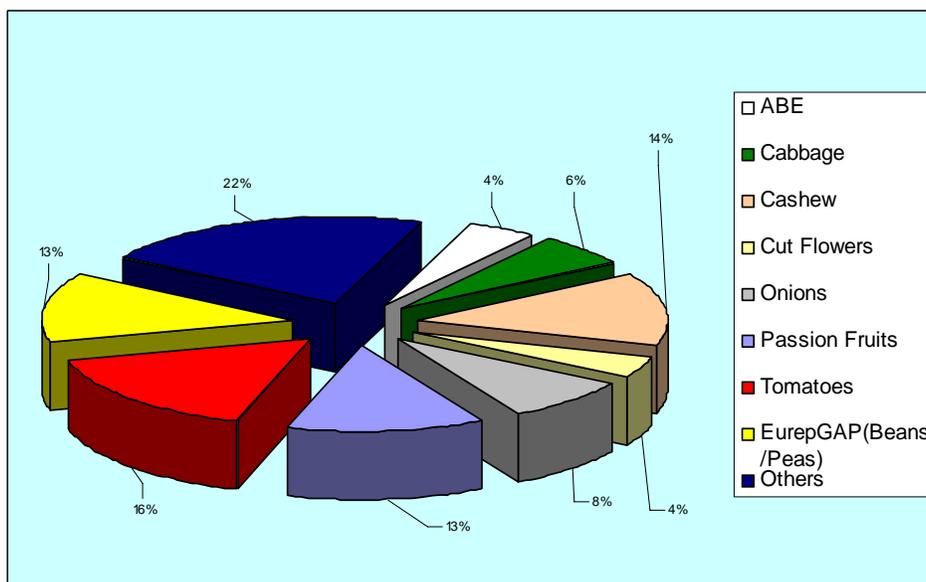


Figure 12: Contribution to New Income of KHDP Target Crops



Other crops shown in Figure 12 are legumes, the principle income source for GlobalGAP beneficiaries in Central, Eastern and Rift Valley production areas, and a range of minor crops including butternut squash, sweet potato, watermelon, sweet pepper, cucumber, African indigenous vegetables, tea-tree, moringa and others. Although recorded income from crops such as sweet potato and butternut was relatively low, much of the crop was consumed at home and was an important food source particularly in Nyanza and Coast areas.

In its selection of interventions KHDP deliberately attempted to influence production and income generation at a national level as well as through direct beneficiaries who can be monitored accurately. Crops such as passion fruit and new technologies such as hybrid tomato varieties and low-cost

greenhouses have been promoted nationally through the media, by speaking at regional workshops and hortifairs, and in partnerships with input suppliers and traders operating nationally. KHDP has also been a leader in coordinating the national private-public approach to smallholder compliance with standards which has enabled smallholder-grown crops to retain and increase their market share. For this reason we have tracked smallholder performance at the national level. Even though KHDP attribution cannot be calculated accurately, we believe that some attribution should be claimed.

Table 4: Smallholder Income from Horticultural Exports 2005-2009

Product	FOB value (\$ Million)					SH Share (%)	SH Income (25% of SH Contribution) (\$ Million)				
	2005	2006	2007	2008	2009		2005	2006	2007	2008	2009
Flowers	273	323	419	579	475	2	1.4	1.6	2.1	2.9	2.4
Vegetables	176	202	238	279	228	60	26.4	30.3	35.8	41.8	34.3
Nuts	12	11	11	17	14	70	2.0	1.9	1.9	3.1	2.5
Fresh Fruits	17	19	20	26	22	90	3.9	4.3	4.6	5.9	4.9
Proc. Veg	36	37	35	76	62	95	8.5	8.7	8.3	18.1	14.8
Proc. Fruit	54	57	69	81	66	2	0.3	0.3	0.3	0.4	0.3
Total	568	648	793	1,058	868		42.5	47.2	53.0	72.1	59.2

The total wholesale value of the domestic market for fruits, vegetables and root crops is projected to reach Ksh 129 billion in 2008-2009 (Table 4) although no reliable source of data is available. Most of this is produced by smallholders and the estimated farmgate value is at least Ksh 43 billion (\$573 million). The validation study carried out in 2008-2009 by KHDP and a national technical committee of stakeholders suggests an average annual increase in production of 2 percent to 5 percent or at least Ksh 502 (\$7.17 million) in 2008-2009.

Export data are more reliable and show that smallholders earned a total of \$72 million from exports in 2008, up 36 percent on the previous year. KHDP estimates based on KRA export data (see below, Figure 13) and consultation with exporters, suggest that this will decrease by at least 15 percent in 2009 (Table 4). Unusually dry weather in some of the main production areas is the main cause of this although the global recession has also contributed to more difficult trading conditions in Europe, Kenya's main market.

SECTION 5: EXPORT AND DOMESTIC TRADE

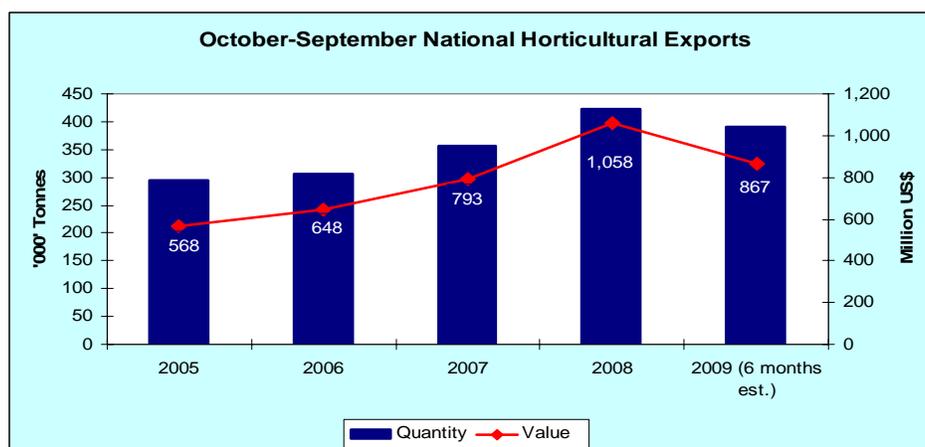
The projected wholesale value of domestic trade for 2009 is Ksh 129 billion (\$1.72 billion). The projection is based on validated MOA production data and a minimum 2 percent growth over the previous year. Although KHDP focused mainly on new growers and farmers in marginal production areas, we estimate that direct and indirect beneficiaries of technical assistance will account for at least \$28 million, equivalent to 2 percent of this trade.

Table 4: Value of Trade in Horticultural Crops and Products

Indicator	Description	2003 Baseline	2009 Target	2009 (Est.)	% over baseline	% over target
IR7.2 Value of fresh and processed horticultural Products	Export <i>FOB value</i> -Ksh billion	28.04	60.00	65.10	+ 132%	+ 8.50%
	Domestic wholesale <i>value</i> Ksh billion	83.45	120.00	128.95	+ 54%	+ 7.46%
Total value domestic and export trade		111.49	180.00	194.05	+ 74%	+ 7.81%

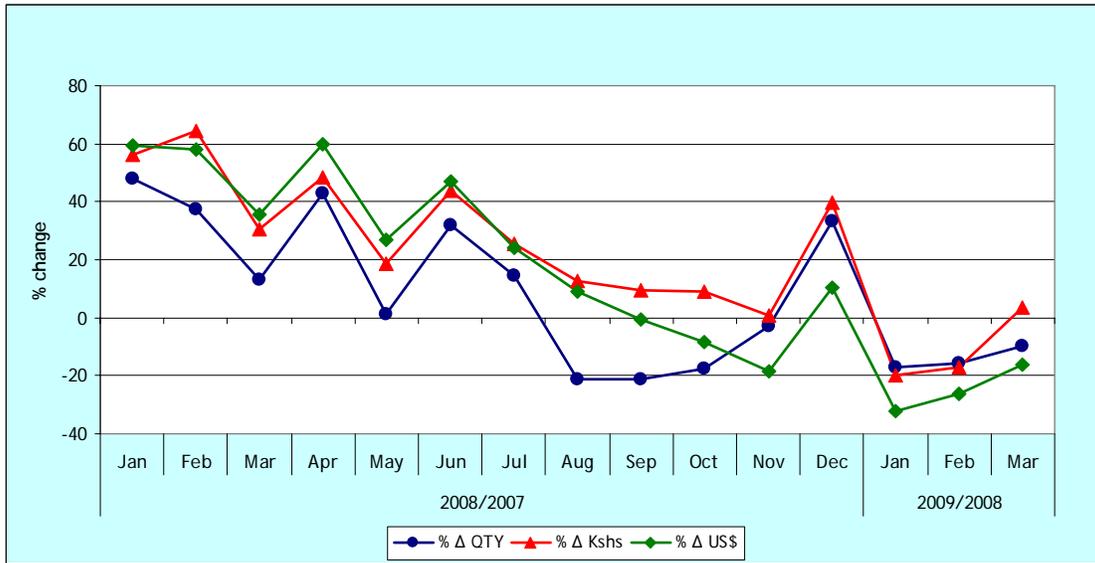
Export trade, projected from the KRA data for the last quarter of 2008 and first quarter of 2009, is expected to drop by 18 percent over the previous year due to drought in many production areas and economic conditions in Europe which reduced demand, particularly in January-March 2009 (Table 4). The biggest loser was fresh vegetables (down 18 percent). Flower value was also down almost 20 percent although quantities exported decreased only slightly.

Figure 13: Trends in Horticulture Exports 2005-09



The outlook for 2009 is difficult to predict. Sales for the first quarter of 2009 were 20 percent down on 2008 (Figure 14) but 2008 was a record year with some products up 50 percent or more on 2007. So, overall exports are still unlikely to fall back below the pre-2008 level unless there is a continuation of serious drought in production areas. Reports from traders are that business is gradually picking up. Smaller companies with niche products and large companies with supermarket contracts appear to be doing better than firms with more opportunistic sales strategies who tend to sell into European wholesale markets which have been worst hit by the recession.

Figure 14: Monthly Trend in Exports of Relative to the Previous Year



SECTION 6: CHALLENGES

Climate and weather

The 20 percent fall in vegetable exports experienced since December 2008, with corresponding losses of employment and income, is largely due to changing weather patterns which have caused drought in some of the important production areas. This affects smallholders and rural employment disproportionately since small-scale field production of vegetables is particularly prone to water shortages. Flower farms with greenhouses, boreholes and dams are less susceptible to temporary drought but are also affected if water tables drop and rivers dry up. Demand and competition for water from non-agricultural users is also increasing and exacerbating the problem for farmers. The only way to combat this is by introducing national policies which encourage more efficient water use and by providing more intensive technical assistance to improve water collection and conservation systems, low-cost irrigation (particularly drip irrigation) and soil and water management at grass roots level.

Fertilizer costs

Farm input prices have increased by 50 percent to 100 percent over the past 18 months. High fertilizer costs were particularly damaging to crop production since they account for the highest proportion of production cost for commercial growers both large-scale and small. Under-use of fertilizer by small-scale growers will exacerbate the national problem of depreciating soil fertility. The Government is taking measures to source and distribute fertilizers at lower cost but these are slow to come into effect and few of the formulations required by vegetable growers are available, except at high cost. Regardless of national fertilizer policy, which cannot solve the long-term problem of market costs, technical assistance is needed to raise awareness of soil and fertility management systems which can reduce fertilizer wastage and reduce long-term application rates.

Global recession

The global downturn in economic activity in the second half of 2008 had an instant impact on Kenyan exports (Figure 14). Flowers were worst affected with sales down 25 percent in January-March 2009. Vegetables were less affected by market demand factors but exports were limited by a drop in production (see above). Both are likely to recover gradually during 2009 to a level somewhere between the 2007 and 2008 figures. Long-term the industry needs to concentrate even more on reducing costs to remain competitive, diversifying markets and increasing the range of products exported to hedge against global fluctuations in supply and demand.

Food crops

Horticultural crops play a major role in food security both in terms of calories (root crops, bananas, squash) and essential nutrients (fresh fruits and vegetables). A small knowledge of horticulture also enables families to meet their food needs by generating income from local sales of fast-growing crops such as African indigenous vegetables, kale (“sukuma wiki”) and green beans. The importance of horticultural crops to food security is clear from the National Food Balance Sheet (2005) which shows that pulses, root crops, fruits and vegetables account for 19 percent of national calories consumed, more than half the contribution of maize, and 24 percent of protein compared with 31 percent for maize. Potato and sweet potato in particular have great potential as food crops and as cash crops for export to regional and international markets. However, years of public sector research have not increased production. The basic problem facing potato growers is lack of good seed and planting

material. Multiplication of clean planting material is best done by the private sector with public sector encouragement and cooperation.

Public-private sector cooperation

To maintain the high growth rate achieved by the horticulture industry over the past decade, cooperation between Government agencies and the private sector must be strengthened. KEPHIS is widely regarded by the private sector as doing an excellent job on phytosanitary issues but the role of HCDA is not clear. The MOA has an important role to play in technology transfer to small-scale growers and in national data collection, but is weak in both areas. At the same time, the industry is lacking a national private sector trade body which can represent both domestic and export market stakeholders. The decision by FPEAK and KFC to merge and form the Kenya Horticulture Council with a domestic market division should solve this problem but the merger needs to be accelerated. Similarly the role and approach of HCDA should be clarified and modernized so that the industry is served by one national public sector agency working in unison with a single private sector association.

Data analysis for planning

Formulation and implementation of more relevant national policies for the horticulture industry requires a new level of analysis and planning. Efficient planning requires access to current, comprehensive and accurate data. However, the systems currently in place to collect and analyze data have remained unchanged for more than twenty years. Front line field staff lack even the basic tools of GPS equipment and computers to track production. Headquarters staff responsible for production and market analyses lack training, equipment and experienced IT support. There is no methodology in place to track domestic production and regional sales which account for more than 90 percent of horticultural production in the country.

Food safety

Excellent progress in meeting international food safety and traceability standards has not been matched by similar improvements in the quality of products offered for sale on local and regional markets. Standards have been written and gazetted, but most fresh produce is still sold through urban markets where infrastructure and food handling facilities are in bad condition and standards cannot be applied. Government has approved funds to improve wholesale markets, starting with a major new market for Nairobi. This will eventually lead to improvements but will take years to implement. In the meantime, other, smaller-scale measures need to be taken to improve the quality of fresh produce sold to local consumers and exported to regional markets.

Kenya/US trade

Less than 2 percent of Kenya's horticultural exports went to the US market in 2008. A major reason was the relatively low value of the dollar compared to sterling and the euro. If the current exchange rate holds, some Kenyan products could become competitive in the US during 2009. However, USDA entry approvals have still not been obtained for most of the high value vegetable products which could be sold competitively against Latin American suppliers.

SECTION 7: FINANCIAL SUMMARY

Original Contract and Modifications

The USAID-KHDP contract with Fintrac (623-C-00-03-00071-00) was signed on September 19, 2003. Program activities were originally planned to continue through September 30, 2006, with a possible extension to September 30, 2007, pending the approval of USAID/Kenya's Integrated Strategic Plan. The original budget was \$4,998,507, with initial incremental funding of \$1,000,000.

There have been 11 subsequent modifications to the USAID-KHDP contract as follows:

- **Modification 01** – effective September 19, 2003. To provide additional incremental funding of \$250,000, raising total obligated funding from \$1,000,000 to \$1,250,000.
- **Modification 02** – effective May 28, 2004. To provide additional incremental funding of \$1,100,000, raising total obligated funding from \$1,250,000 to \$2,350,000.
- **Modification 03** – effective June 10, 2005. To provide additional incremental funding of \$625,000, raising total obligated funding from \$2,350,000 to \$2,975,000.
- **Modification 04** – effective October 12, 2005. To provide additional incremental funding of \$750,000, raising total obligated funding from \$2,975,000 to \$3,725,000.
- **Modification 05** – effective January 30, 2006. To include Standard Provision on Terrorism Financing.
- **Modification 06** – effective April 20, 2006. To increase the Total Estimated Cost (TEC) of the contract from \$4,998,507 to \$7,498,507, and to provide additional incremental funding of \$1,600,000, raising total obligated funding from \$3,725,000 to \$5,325,000. Also included a revised statement of work extending the performance period end date by one year, from September 30, 2006 to September 30, 2007, and a revised budget.
- **Modification 07** – effective January 17, 2007. To provide additional incremental funding of \$1,783,750, raising total obligated funding from \$5,325,000 to \$7,108,750.
- **Modification 08** – effective April 17, 2007. To re-align budget line items only, without any increase to contract cost or obligated funding.
- **Modification 09** – effective December 3, 2007. To increase the Total Estimated Cost (TEC) of the contract from \$7,498,507 to \$9,297,958, and to provide additional incremental funding of \$2,189,208, raising total obligated funding from \$7,108,750 to \$9,297,958. Also included a revised statement of work extending the performance period end date by one year, from September 30, 2007 to September 30, 2008, and a revised budget.
- **Modification 10** – effective July 1, 2008. To re-align budget line items only, without any increase to contract cost or obligated funding.
- **Modification 11** – effective September 1, 2008. To increase the Total Estimated Cost (TEC) of the contract from \$9,297,958 to \$10,297,941, and to provide additional incremental funding of \$999,983, raising total obligated funding from \$9,297,958 to \$10,297,941. Also included a statement of work and budget for the extension period, and extended the

performance period end date by six months from September 30, 2008 to March 31, 2009.
 (Note: Separate approval was provided by the USAID/Kenya Contracts Office to carry out activities related exclusively to program closeout during the month of April, 2009).

Total program spending over the contract performance period of September 19, 2003 to April 30, 2009 was \$10,211,364, or 99.16 percent of obligated funds (note: some final expenditures incurred during the performance period have not yet been invoiced). The major cost categories are shown below.

Table 5: Fiscal Summary
USAID-KHDP Fiscal Monitor – As of April 30, 2009 (Contract #623-C-00-03-00071-00)

Cost Category	Budget (Modification 11)	Expenditure to Date*	Remaining Balance
1. Salaries			
2. Indirect Costs			
3. Travel and Transport			
4. Allowances			
5. Other Direct Costs			
6. Equipment/Freight			
7. Partners/Technology Fund			
8. M&E			
9. Fixed Fee			
Total			

* Does not include all final program expenditures

ANNEX 1: KHDP PARTNERS 2003-2008

Category	Partner
Public Sector	Ministry of Agriculture
	Kenya Agricultural Research Institute (KARI)
	Horticultural Crops Development Authority (HCDA)
	Coast Development Authority (CDA)
	Nairobi University
	Jomo Kenyatta University of Agriculture and Technology
	Kenya Plant Health Inspectorate Services (KEPHIS)
	Moi University
Trade Associations	Kenya Flower Council
	Fresh Produce Exporters Association of Kenya
Fresh Produce and Flowers	East African Growers
	Indu-Farm
	Kenya Horticultural Exporters
	Woni
	Myner Exporters
	PJ Flowers
	K-Net
	Pemiculture Afrique
	Simeth Investments
	Zedgee
	Nature Grown Flowers
	Vegpro
	Sunripe
	Uchumi Supermarket
Agri-fresh	
Processors	Essential Seeds and Juices
	Juicee-Juice It Up
	Kevian Kenya
	Milly Fruit Processors
	Kasarani Fresh
	HR Retief
	Premier Foods
	Mace Foods
	Equator Products
	Raja Products
	Earth Oil
	Lubanchem
	Kenya Nut
	Natures Own
	Jungle Macadamia
	Rosavie
	Frigoken
Malindi Vanilla	
Input Suppliers	Seminis
	Hygrotech East Africa
	Osho Chemicals
	Athi River Mining
	Trees & Bees
	Booth Manufacturing
	G-North
	Genetic Technologies
	Shade Net
Etang	

Category	Partner
	Amiran
	Bayer East Africa
	Syngenta East Africa
Technical Consultancies	Market Economies Development
	Millennium Management Consultants
	Real IPM
	Africert
	Farm Produce Technologies
	KenGap
	Blue Rhino
Financial Service Providers	K-Rep Bank
	Equity Bank
Local NGOs	Farm Concern
	Youth Action for Rural development
	Rural Service Program
	Animal Draft Power Program
	One Acre fund
	Catholic Diocese Eldoret
	Good Neighbours CBO
	Christian Women Partners
	SCC-VI Agroforestry
	Samburu Integrated Development Program
	Imenti CBO
	Family Preservation Initiative
	Mount Kenya Organic farming
International Agencies	GTZ
	Royal Netherlands Embassy
	IFAD
	UNDP
	EU Pesticide Initiative Programme
	Action AID
	ICIPE
	DANIDA

Summary

Category	Number
Public Sector	8
National Trade Associations	2
Fresh Produce and Flower Marketing Companies	15
Processors	18
Input Suppliers	13
Technical Consultancies	7
Financial Service Providers	2
Local NGOs	13
International Agencies	8
TOTAL	86

ANNEX 2: KHDP PARTNERS FUND GRANTEES, 2003-2008

PF EXPENDITURE AS OF APRIL 2009

No	PF Agreement	Company	Amount
TF1	National smallholder fund - phase 1	Various	51,648.00
TF2	National smallholder fund - phase 2	Various	94,630.00
TF3	National smallholder fund - phase 3	Various	39,410.00
TF4	National smallholder fund - phase 4	Various	35,640.00
PF1	Strategic review of the local market	MED (Stanley Karuga)	20,879.70
PF2	Improved seed and production technologies (demo plots)	Regina Seeds	35,520.00
PF3	Development of IPM protocol for passion fruit production	Real IPM	41,279.00
PF4	Development of IPM protocol for cashew production	Real IPM	27,270.08
PF5	EurepGAP certification of outgrowers	East African Growers & MMC	70,998.00
PF6	EurepGAP certification of outgrowers & passion fruit trials	Indu Farm	63,631.00
PF7	Coast Province cashew productivity enhancement program	KARI for cashew Tech. committee	72,919.22
PF8	Coast Province postharvest program - mango	Retief	81,762.00
PF9	Coast Province product development - vanilla	Trees and Bees	33,830.07
PF10	Export market promotion and policy analysis	FPEAK	65,417.00
PF12	Extension services to smallholder producers - chili	Mace Foods	42,563.00
PF13	Local market intermediaries-smallholder production of horticultural produce	Domestic Market Intermediaries	38,119.00
PF14	EurepGAP certification of out growers	Kenya Horticultural Exporters	49,598.00
PF15	EurepGAP certifications of outgrowers	Woni Veg-Fru Exporters	41,471.00
PF16	Smallholder production of pressed oils	Earthoil Kenya.	28,025.10
PF17	Trials & Training in passion fruit & smallholder flower production	KARI-NHCR	54,750.91
PF18	Provision of Extension services in Nyanza Province	Animal Draft Power Program	23,430.00
PF19	Improved seed and production technologies (demo plots)	Hygrotech East Africa	36,582.00
PF20	ABE chili and dehydrated vegetable production	Equator Produce	27,259.00
PF21	Capacity building for smallholder groups	Family Concern	39,345.00
PF22	Market promotion and TA for smallholder flowers	Kenya Flower council	58,685.00
PF23	Export market support - phase 2	FPEAK	17,487.00
PF24	US export market support	Kenya Flower council	65,825.00
SC1	Coast province cashew product development program - phase 2	KARI/CTC	99,479.00
SC2	Coast Province product development - phase 2	Trees and Bees	21,808.00
SC3	Extension services to smallholder producers of birds eye chillies - phase 2	Mace Foods	18,074.00
SC5	Smallholder extension program in Nyanza - phase 2	Animal Draft Power Program	29,991
SC6	Technical assistance for ABE Chili and dehydrated vegetable production - phase 2	Equator Produce	23,801

PF EXPENDITURE AS OF APRIL 2009

No	PF Agreement	Company	Amount
SC7	Expanded market access for Kenyan preserved flowers to the US	Rosavie	15,519
SC8	Export promotion for Kenyan flowers & foliage to the US	K-NET Flowers	18,186
SC9	Enhanced market access for horticultural produce from small-scale growers	KEPHIS	8,923
SC10	Improved seed and production technologies - phase 2	Seminis	20,000
SC11	Extension services	Vanilla Development Foundation	15,834
SC12	Extension services	Rural services providers (RSP)	25,557
SC13	Passion fruit processing	FIPS - Kasarani Fresh	22,259
SC14	Positive health	Real IPM	9,616
SC15	Smallholder flower & foliage production	Nature Grown	22,583
SC16	Coast Province postharvest and processing - mango	Retief	48,227
SC17	Smallholder flower trials	KARI Thika	5,664
SC18	Export market support	Kenya Flower council	698
SC19	Essential oils and plant extracts to the US	Lubanchem Ltd	21,698
SC21	Domestic market standards	FPEAK	4,340
SC23	Extension services	ADPP/Mace	14,987
SC24	Extension services	RSP/Mace	15,045
		Total	1,720,263

ANNEX 3: ACHIEVEMENTS AGAINST USAID SO7 PMP INDICATORS

SO7- IR 7.1 Increased Productivity of Selected Products

Average yields of target crops tripled since the start of the program and are 37 percent over the 2009 target figure (Table A3-1).

Table A3-1: Productivity Indicators

Intermediate result	Indicator	Crop	Baseline 2003	Target 2009	2009 YTD	Performance	
						% VS	
						Baseline	Target
IR 7.1 Increased productivity of selected products	Percentage change in annual production per unit (MT/ha)	Tomato	16.3	60	64.41	295.15	7.35
		Passion fruit	9.7	15	17.45	79.90	16.33
		Chilli	1	2.5	2.88	188.00	15.20
		Cashew	0.2	0.5	3.17	1,485.00	534.00
		Onion	10.3	17.5	18.7	81.55	6.86
		Cabbage	13.7	40	80.18	485.26	100.45
		Average	8.53	22.58	31.13	435.81	113.37
	Percentage change in cost of production per unit (Ksh/kg)	Tomato	6.00	3.00	3.33	-44.50	11.00
		Passion fruit	12.00	9.00	5.28	-56.00	-41.33
		Chilli	40.00	20.00	19.10	-52.25	-4.50
		Cashew	20.00	15.00	3.11	-84.45	-79.27
		Onion	12.20	2.50	1.61	-86.80	-35.60
		Cabbage	4.00	0.75	1.04	-74.00	38.67
		Average	15.70	8.38	5.58	-66.33	-18.51

Source: MOA, CIRIS

SO7- IR 7.1.2 Increased Use of Technology

SO7- IR 7.1.3 Adoption of NRM (Natural Resource Management) Techniques

An estimated 54,520 or 94 percent of KHDP beneficiaries adopted one or more new technologies since receiving training (new crops, hybrid seeds, drip irrigation, greenhouse production, shade netting and others).

SO7- IR 7.2 Increased Trade in Domestic and Export Markets

Total of export and domestic trade volume was targeted to reach 7 million tons by September 2009. Based on actual figures for the September 2008 to March 2009 period, the projection for 2009 is 8.2 million tons, equivalent to 17 percent over target.

Trade value was targeted to reach Ksh180 billion for 2009 and is projected at 234 billion or 30 percent over target for the year (Tables A3-2 and A3-3).

Domestic trade is set to exceed the annual targets significantly for both value and volume. Export volumes should achieve target but trade value is projected to be 2.25 percent below target for the reasons described in the main report.

Table A3-2: Volume of Trade in Horticultural Crops and Products

Indicator	Description	2003 Baseline	2009 Target	2009 Est.	% over baseline	% over target
IR7.2 Quantity of fresh and processed horticultural Products	Export <i>FOB Quantity - '000 MTs</i>	276	400	391	42	-2.25
	Domestic wholesale <i>Quantity- '000 MTs</i>	4,562	6,600	7,820	71	18.48
Total value domestic and export trade		4,838	7,000	8,211	70	17.30

Table A3-3: Value of Trade in Horticultural Crops and Products

Indicator	Description	2003 Baseline	2009 Target	2009 Est.	% over baseline	% over target
IR7.2 Value of fresh and processed horticultural Products	Export <i>FOB value- Ksh billion</i>	28.04	60	65	132	7.73
	Domestic wholesale <i>value Ksh billion</i>	83	120	169	103	41.13
Total value domestic and export trade		111	180	234	110	30.22

SO7- IR 7.2.2 Improved Performance of Agricultural Marketing Systems

More than 100 KHDP monthly Horticulture Updates and Market News were produced during the life of the Program. FPEAK, MOA, HCDA and other partners produced price and market information reports. The National Taskforce produced numerous reports. All received KHDP technical support.

SO7- IR 7.2.3 Services for Agricultural Trade Improved

An estimated 80,000 stakeholders now receive improved market information through the national media and industry publications supported by KHDP compared with the 2009 target of 50,000.

SO7- IR 7.3 Increased Access to Business Support Services for Micro and Small Enterprises

An estimated 58,000 growers received customized services from KHDP's lead partners compared with the 2009 target of 50,000.

SO7- IR 7.3.3 Non-financial Services Delivered Cost-effectively

KHDP worked with a total of 86 partners providing business development services compared with an EOP target of 64.

SO7- IR 7.4 Increased Effectiveness of Smallholder Organizations to Provide Business Services to their members

KHDP provided assistance to 1,190 smallholder groups. Their average Organizational Capacity Assessment Tool (OCAT) score in 2003-04 was 29.6%. The EOP target for improved institutional capacity was an OCAT score of 65%. A sample survey of groups carried out in 2009 showed that groups had increased their score to 76.7%, equivalent to a 159% increase over baseline and 18% over target.

ANNEX 4: ACHIEVEMENTS AGAINST USAID IEHA (FORMERLY OPIN) INDICATORS

IEHA – No. of Households Benefiting

58,000 households received technical assistance, marketing and business services from KHDP partners.

IEHA – No. of Partners

KHDP worked with more than 86 public and private sector partners.

IEHA – No. of Firms Benefiting

More than 55 firms received direct assistance, comprising fresh produce exporters, local market traders, processors, input suppliers, technical consultancies and financial service providers.

IEHA – Training Beneficiaries

KHDP provided short-term training to a total of 58,000 beneficiaries including 23,200 women

IEHA – No. of Producers' Organizations Benefiting

A total of 1,190 producer groups received technical assistance.

IEHA – No. of Public-Private Partnerships Formed

A total of 55 public-private partnerships were formed through KHDP interventions.

IEHA – New Technologies being Transferred

More than ten significant new technologies were introduced by KHDP and adopted by growers to varying degrees. These included: raised bed planting, drip irrigation, starter solutions, hybrid vegetable varieties, low-cost greenhouses for tomatoes, shade netting for smallholder flowers, companion tree planting for yellow passion fruit, vanilla production systems, tea-tree oil production and improved ABE chili seed from Moi University.

IEHA – IR 1 Gross Margin (Productivity)

Gross margins for the two IEHA indicator crops of onion and cashew increased by 19 percent and 500 percent during the life of KHDP.

IEHA – IR 1.1 Technology Adoption

The area under new technology farmed by KHDP beneficiaries reached 44,600 hectares. A total of 54,000 growers adopted at least one new technology.

IEHA-IR3 International Trade

International trade in fresh vegetables, the IEHA product indicator, increased from \$87 million in 2003 to an estimated \$228 million in 2009, equivalent to an increase of 162 percent. Volume of trade increased from 50,667 tons in 2003 to an estimated 99,106 tons for 2009 equivalent to a 96 percent increase.

IEHA – IR 3.1 Competitiveness

Projected value of the total domestic and export vegetables (only) bought from smallholders in 2009 is valued at \$266 million farm gate.

IEHA – IR 3.2 Value of Credit, BDS access and International Standards

Fifty five KHDP-assisted firms achieved international standards during the life of the program.

ANNEX 5: KHDP PUBLICATIONS LIST, 2003-2008

A full list of all publications (including power point presentations) produced and distributed with technical and financial support from KHDP is given below. The Program also contributed information and analysis to many other reports produced by Government, academic and donor-funded programs.

TITLE	AUTHOR	DATE
1. Policy		
Increasing Horticulture Industry Competitiveness: KHDP Final Workshop	KHDP/Partners	March 2009
High value crops for local regional and international markets - PP	KHDP/George Okundi	November 2007
High value crops for local regional and international markets - PP	KHDP/Geoffrey Nyamota	August 2007
Increasing smallholder incomes from horticultural crops and products - PP	KHDP/Timothy Mwangi	February 2006
Regulations faced in the Product-to-Market Value Chain - PP	KHDP/Steve New	October 2006
Background presentation for intermediaries training on calendarization - PP	KHDP/Julius Maithya	August 2006
Increasing smallholder incomes from horticultural crops and products - PP	KHDP/Steve New	June 2006
Smallholder horticulture in Kenya - PP	KHDP/Timothy Mwangi & Irene Ngugi	March 2006
Increasing smallholder incomes from horticultural crops and products - PP	KHDP/Timothy Mwangi	February 2006
A summary of export horticulture in Kenya - PP	KHDP/Steve New	January 2006
Donor-funded Programmes Survey	Simon Ethangatta & Martin Mulandi/KHDP	July 2005
2. SPS Standards and Compliance		
Overview of implementation of food safety standards in Kenya: Successes and Challenges	KHDP/Timothy Mwangi & Steve New	August 2008
Impact of Private agrifood standards on smallholder incomes in Kenya	KHDP/Timothy Mwangi	March 2008
Impact of EurepGAP on smallholder incomes in Kenya	KHDP/Timothy Mwangi	April 2007
Food quality schemes in the international context: KenyaGAP experiences and lessons learnt - PP	KHDP/Timothy Mwangi and Apollo Owour	February 2007
Technical support for smallholders to manage food standards - PP	KHDP/Timothy Mwangi	November 2006
EurepGAP impact assessment survey	KHDP/Timothy Mwangi	October 2006
Impact assessment of EurepGAP standard requirements on smallholder horticultural exports in Kenya	Farm Produce Technologies/KHDP	September 2006
Safe use of pesticides - PP	KHDP/Timothy Mwangi	April 2006
Pesticide evaluation report and safer use action plan	KHDP/Jim Finlay	October 2004
Training manual for EurepGAP fruits and vegetables (version 2.1)	KHDP/Timothy Mwangi	October 2004
3. Domestic Market		
Horticulture Data Validation 2005 – 2007	HCDA/MOA/KHDP	June 2008
Kenya's Horticultural Sector Data: Problem areas & proposed actions for improvements - PP	KHDP/Steve New	June 2006

TITLE	AUTHOR	DATE
Domestic market for Fruits and vegetables (summary report)	KHDP/Martin Mulandi & Stanley Karuga	December 2004
Rethinking Kenya's Horticultural Subsector: market investment opportunities for domestic market (stakeholders workshop)	KHDP/Stanley Karuga	November 2004
Study of Kenya's domestic market for fresh fruits and vegetables	KHDP/Martin Mulandi	November 2004
4. Gender		
KHDP Gender review and strategy development	KHDP/Mary Duncan	August 2006
Guidelines for gender mainstreaming	KHDP/Mumbi Kimathi	December 2005
5. Tomato		
Commercialization Guide : Greenhouse Tomatoes	KHDP	December 2008
Tomato Production Guide	KENGAP/KHDP	April 2007
6. Onions		
Commercialization Guide: Onions	KHDP	May 2007
7. Cabbage		
Commercialization Guide: Cabbage	KHDP	August 2007
8. Butternut squash		
Commercialization Guide: Pumpkins and butternut squash	KHDP	August 2007
9. Sweet Potato		
Commercialization Guide 10: Sweet Potatoes	KHDP	August 2008
10. Mango		
KHDP interventions in smallholder Mango production - PP	KHDP/Steve New	March 2007
Feasibility study for a proposed fruit juice processing factory in Kenya (Mango)	KHDP/Steve New	January 2006
The role of post harvest management in Food security: A Mango case study	KHDP/Anne Wangalachi & Steve New	February 2005
Pre-feasibility study for a sustainable mango collection system in the Tana	KHDP/ Steve Humphreys	November 2004
11. Cashew		
Enhancing Cashew Productivity, cashew program launch, Mombasa - PP	KHDP/Beatrice Gambo	September 2006
Market assessment of the cashew nut subsector: a case of Kwale cashew nut cottage industry	Farm Concern/KHDP	July 2006
Report on field trials for control of powdery mildew in cashew nut in Kenya	REAL IPM/KHDP	December 2005
Cashew integrated pest management protocol	REAL IPM/KHDP	November 2004
12. Passion fruit		
Commercialization guide : Yellow passion fruit	KHDP	May 2008
Commercialization guide : Purple passion fruit	KHDP	May 2008
Improvement of Smallholder passion fruit Production in Kenya	KHDP/Lydia Njuguna	March 2007
Notes on the US market for passion fruit - PP	KHDP/Steve New	April 2006
Proceedings of the official launching of the passion fruit research/seedling production facility and farm	KARI/KHDP	March 2006
Training manual for passion fruit	KARI/KHDP	March 2006
IPM Crop protocol for passion fruit in Kenya	REAL IPM/KHDP	December 2005
Feasibility study for a passion fruit juice Processing facility in Kenya	KHDP/Steve New	July 2005
Safe use pesticide training on passion fruit	REAL IPM/KHDP	January 2005
13. Macadamia		
Training Manual for Orchard Management	KARI/KHDP	March 2006
14. Floriculture		
Horticultural Production manual: Smallholder	KARI/KHDP	January 2009

TITLE	AUTHOR	DATE
flower production		
Opportunities for smallholder flower growers - PP	KHDP/Lydia Njuguna	November 2007
Value addition opportunities for smallholder growers in floriculture - PP	KHDP/Ben Kiragu	November 2007
Grower guide for selected smallholder flower/foilage crops	JKUAT/KHDP	December 2006
Field cut flower production manual : a quick reference for the Kenyan grower	KHDP	October 2006
Hydrangea trials report	KARI/KHDP	May 2006
A training manual for summer flower growers under KARI/KHDP partnership	KARI/KHDP	March 2005
Summer flowers evaluation trial	KARI / KHDP	March 2005
Summer flowers evaluation trials	JKUAT/KHDP	March 2005
Baseline survey of Kenyan Smallholder flower sector (Summary report)	KHDP/Martin Mulandi	January 2005
15. Vanilla		
Notes for Planting Vanilla in Kenya	KHDP/Steve New	September 2006
16. Chili		
Commercialization Guide: African Bird's Eye (ABE) Chili	KHDP	May 2008
17. KHDP Newsletters		
Horticulture Marketing News - Monthly	KHDP	2004-2009
Update on Kenyan Horticulture - Monthly	KHDP	2004-2009
18. USAID Reports		
KHDP Annual reports (5)	KHDP	2004-2008
KHDP Quarterly reports (16)	KHDP	December 2008
KHDP Final Report	KHDP	April 2009



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