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Year 4 Annual Report

For the Period 1 October, 2005 – 30 September, 2006
USAID Kenya Business Development Services Program (Kenya BDS)
Contract No. 623-C-00-02-00105-00



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YEAR 4 ANNUAL REPORT

FOR THE PERIOD 1 OCTOBER, 2005 – 30 SEPTEMBER, 2006
USAID KENYA BUSINESS DEVELOPMENT SERVICES PROGRAM (KENYA BDS)
CONTRACT NO. 623-C-00-02-00105-00
PREPARED BY THE EMERGING MARKETS GROUP, LTD.

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I. EXECUTIVE SUMMARY

Kenya BDS works to increase growth and incomes among rural Micro- and Small-Enterprises (MSEs) through: 1) access to markets; and 2) access to skills, resources, and services to compete in those markets. By the end of Year 4, Kenya BDS had surpassed most of the targets established in the SO7 Performance Monitoring Plan (PMP) for this contract period. A total of 58,913 MSEs had accessed commercial business services, representing a 118% achievement over program targets. A total of 1,006 business service providers had been developed, representing a 234% achievement over program targets. As of September 30, 2006, a total of 211,450 MSEs had been sensitized on program assisted business services, exceeding targets by 132%. Most importantly, 15,442 MSEs had been linked with the commercial market, which is perhaps the most meaningful indicator for measuring increased rural incomes.

Progress was made during Year 4 in enhancing productivity and trade among smallholder farmers in the targeted subsectors of tree-fruit and Lake Victoria Fish. This had a direct effect on increasing household incomes as well as providing MSEs with monies to invest in business services to enhance quality and yields.

By the end of Year 4, a total of 8,781 smallholder avocado farmers were directly linked with primary and secondary markets through Kenya BDS service providers, with a guaranteed market for all produce. Since inception of program activities, prices have increased 200–500%. Although outreach was strong, the avocado subsector was directly affected by drought during Year 4, which had an impact on the volume of produce harvested (7% decrease) as well as the value of domestic trade (15% decrease) compared to the previous year. However, an overall increase in the volume and value of export trade was realized (45%), stemming from both an increase in outreach (coverage of more farmers/trees/hectare) as well as increased productivity arising from adoption of good agricultural practices promoted under the program. During Year 4, prices for grade 1 increased to Kshs 3.50 for Fuerte variety and Kshs 4.50 for Hass variety, as compared to Kshs 2.50 per piece the previous season. For every 1 Kshs expended by Kenya BDS in the avocado subsector, 1.85 Kshs was generated in sales.

Overall the avocado value chain continues to grow at an aggressive pace. Kakuzi became the fourth major avocado exporter to approach Kenya BDS. Over the past year the company completed construction of a US\$1.5 million pack-house for their avocado operations, and signed an MOU with Kenya BDS for replication of the smallholder linkage program. Grade 2 supplies under the processing linkage intervention increased by 130% from the previous year, with a total delivery of 411 MT. Equity Bank commenced an innovative value-chain financing program allowing smallholders access to agrochemicals on credit. During the Fourth Quarter, Kenya BDS was approached by Houghton Avocado Products, Ltd., a firm interested in establishing a cold-press avocado refinery in Kenya for edible oils. This will mark the first high-value avocado refinery operational in Kenya, and the only avocado processor manufacturing a finished product for retail. By capturing this value addition the firm will command an additional price increase of 50% in their finished product.

During Year 4, Kenya BDS realized a 78% increase in the value of passion fruit entering domestic, regional, and international markets, with Kshs 58,537,500 in sales. An additional exporter, Kenya Horticultural Exporters (KHE) joined East African Growers (EAGA) as the second major exporter in formalizing supply contract relationships with passion fruit farmers.

To date 1,524 farmers (193,408 vines) have been organized into 54 groups and linked with EAGA. Of this number, 328 farmers are women. To date 265 MT have been sold to the exporter which has resulted in a total sales volume of Kshs. 10,817,848. Under the KHE scheme, there are currently 477 farmers (58,526 vines) organized into 20 groups, with 168 of those farmers comprising women. To date 16 MT have been sold to the exporter valued at Kshs 1,034,955. Taking into account the increase in the number of mature vines, there is a very high possibility of more than doubling production during Year 5. For every 1 Kshs expended by Kenya BDS in passion fruit, a total of 10.58 Kshs was generated in sales.

Although many agricultural crops were affected during the drought, mangoes proved a worthwhile investment for smallholder farmers in Central and Eastern Kenya. While other crops failed in Makueni and Machakos, the 1,490 mango farmers in this area harvested a total of 421,622 cartons (4,216,220 pieces) of grade 1 mangoes, earning farmers an income of KShs 24.5 million. Following the drought, Kenya BDS pursued an aggressive expansion in Central and Eastern to reach a total of 3,316 farmers organized into 100 groups with a total of 82,400 mature mango trees. Of these groups, 76 have an attendance rate of over 80%, with approximately 33% of the farmers being women. The program currently has 5 field-based Group Management Officers each with an average of 20 groups and 18,000 mature mango trees. Working relationships have been established with 8 exporters (2 of them large-scale) and farmers through formal supply contracts.

Along the coast, a total of 1,019 farmers were mobilized in Mpeketoni and organized into 33 groups, representing a total of 14,549 Ngowe mango trees and 4,362 Apple mango trees. All the groups are on regular scheduled group meetings, and most of them have organized merry-go-rounds and savings. From the 33 groups, 22 have mobilized savings totaling Kshs 149,300. There are eighteen (18) group-owned and twenty-one (21) individual-owned nurseries comprising of both mango seedlings and other indigenous/exotic trees. Through these combined efforts Kenya BDS realized a 77% increase in the value of mangoes entering domestic, regional, and international markets, with Kshs 88576,500 in sales. For every 1 Kshs expended by Kenya BDS in mangoes, a total of 8.74 Kshs were generated in sales.

Over the past year Kenya BDS continued with a number of interventions to increase growth and incomes along the shores of Lake Victoria. A total of 42 fishing gear retailers and 6 wholesalers were actively linked through horizontal bulking arrangements and vertically integrated supply deliveries. Through these efforts a total of 2,500 fisher folk were able to access fishing gear with increased efficiencies. Uptake of the Omena rack-drying technology and market linkage arrangement with lead firm Promasidor has expanded dramatically. By the end of Year 4, the Omena market linkage activity had expanded to 519 Omena women processors organized into 20 groups from 13 beaches. A total of 196 racks have been constructed on full commercial terms between the Women Omena processors and lead firm. Through these combined efforts Kenya BDS realized a 279% increase in the value of Lake Victoria Fish produced under the Program. For every 1 Kshs expended by Kenya BDS, a total of 62.51 Kshs were generated in sales for the sector.

Kenya BDS was also able to graduate from a number of interventions that had become fully commercialized. One example is the savings mobilization activity, which has brought in over 7,000 clients with a total confirmed savings of Kshs 55,000,000 mobilized. (For every 1Ksh invested by Kenya BDS under the past program, 9 Kshs was mobilized in fisher-folk savings.) Three reputable microfinance institutions – SAGA, K-Rep Bank, and Faulu/Kenya have formalized beach bank services for fisher-folk, in addition to a series of locally-based cooperative

societies. The program has had particular impact on SAGA, which has evolved from 16% to over 100% sustainability over the past 12 months. The MFI is now afloat.

Advancing Best Practices in Value Chain Facilitation

Over the past Year Kenya BDS participated in a number of activities to advance the learning agenda on value-chain facilitation and business services market development. A few of the highlights include:

- On February 28 Jacqueline Schafer and Jeremy Haggard from the USAID Bureau for Economic Growth, Agriculture, and Trade (EGAT) visited smallholder farmers operating under the avocado backwards linkage program in Maragua District. During her visit, Ms. Schafer visited locally developed service providers in grafting, pruning, and spray services, and interacted with smallholder farmers from Kawendo Group B. The visit made an impression upon Ms. Schafer. On July 27 the Assistant Administrator testified to the US House of Representatives on USAID's progress in implementing the Microenterprise Results and Accountability Act of 2004. During her testimony, Ms. Schafer cited Kenya BDS as a flag-ship program for USAID in increasing the productivity and profits of smallholder farmers through access to more and better inputs, improved practices, value-added processing, and access to higher-value markets.
- From June 14-16 a USAID Learning Conference titled *Microenterprise Development in a Globalizing World* was held in Washington, D.C. Hosted by the USAID Microenterprise Office, the event brought together leading practitioners from around the world to examine the impact of globalization on emerging markets, microenterprise development, and poverty alleviation. David Knopp was invited to participate as speaker in a panel session titled *Enhancing MSE Competitiveness in a Globalizing World*. During this session, participants learned about the activities of Kenya BDS in creating and sustaining competitiveness for small producers in the avocado value chain.
- From 3-7 July, Kenya BDS facilitator Resource Mobilization Center (RMC) participated in the Second SEEP Practitioner Learning Program (PLP) Workshop on *Strategic Alliances for Financial Services and Market Linkages in Rural Areas* in Asuncion, Paraguay. Funded by USAID through the SEEP Network, the objective of the overall PLP is to pilot interventions that leverage strategic alliances to increase access to financial services and market linkage opportunities for rural MSEs. Participants met to share and document emerging lessons learned and experience among peers, as well as identify learning products relevant to practitioners working in microfinance and value chain development.
- Kenya BDS was once again featured as a best practices program in value chain market facilitation at the ILO-sponsored Private Sector Development Seminar (formerly BDS Seminar) this September, 2006 in Chiang Mai, Thailand. This not only included open discussion during the conference plenary, but also detailed examination of Kenya BDS methodologies in facilitating horizontal and vertical linkages for smallholder farmers in the Seminar Reader, which was published for wider dissemination.

The following document represents the Year 4 Annual Report, which comprises the implementation period 1 October 2005 – 30 September 2006.

II. PROGRAM PERFORMANCE AND ACHIEVEMENTS

Key Results

By the end of Year 4, Kenya BDS had achieved and surpassed most targets specified under the Year 4 Performance Monitoring Plan. Table A offers a brief summary of PMP targets and (cumulative) results achieved. Please refer to the Annex material for a complete listing of process, performance, and OPIN and IEHA indicators and results tracked under this program.

Table A: Performance Monitoring Plan Achievements

S07 PMP Indicators	Year 4 Targets	Yr 4 Results	% Achieved
Total number of MSEs accessing commercial business services	50,000 MSEs	58,913 MSEs	118%
Total number of Business Service Providers participating in the KBDS Program target areas	430 BSPs	1,006 BSPs	234%
Total number of MSEs aware of program assisted business services	160,000 MSEs	211,450 MSEs	132%
Total number of MSE producers linked with the commercial market	20,000 MSEs	15,442 MSEs	77%

Much of the success for *increasing access to business services* during Year 4 is a result of the independent sprayers, as well as grafting and pruning service providers. Input suppliers retailing grafted seedlings and other planting materials also contributed to the increased outreach. The surge in *business service providers participating in the KBDS program target areas* is also a result of the large number of input suppliers and fishing gear retailers servicing the MSEs. A number of additional service providers supporting the tree-fruit market linkage intervention such as pickers, graders, and transporters also contributed to the increased supply. *Awareness of program assisted business services* was fueled by the many awareness creation events by local facilitator Ideal Business Link to promote grafting, pruning, and spray services, as well as the beach-based local consultants promoting savings mobilization among fisher-folk. The participation of Kenya BDS on the *Mali Shambani* radio program had an immediate impact on raising awareness.

Linking MSE producers with the commercial market is the only indicator in which Kenya BDS did not exceed expectations. This is largely a result in the shift of produce sourcing by lead firms. To increase competitiveness and lower production costs, there is a shift among lead firms to promote greater productivity and yields among participating smallholder farmers versus expanding the absolute number of farmers linked with the market. Lead firms are also actively weeding out non-performing farmers to protect the overall commercial viability of the scheme. Therefore some level of attrition can be expected, both now and moving forward.

Progress on Activity and Process Outputs

Progress was made during Year 4 in enhancing productivity and trade among smallholder farmers in the targeted subsectors of tree-fruit and Lake Victoria Fish. This had a direct effect on

increasing household incomes as well as providing MSEs with monies to invest in business services to enhance quality and yields. Following is a brief summary of process within the targeted subsectors:

Avocados - By the end of Year 4, a total of 8,781 smallholder avocado farmers were directly linked with primary and secondary markets through Kenya BDS service providers, with a guaranteed market for all produce and price increases averaging 200 – 500% since program inception. Although outreach was strong, the avocado subsector was directly affected by drought during Year 4, which had an impact on the volume of produce harvested (7% decrease) as well as the value of domestic trade (15% decrease) compared to the previous year. However, an overall increase in the volume and value of export trade was realized (45%), stemming from both an increase in outreach (coverage of more farmers/trees/hectare) as well as increase productivity arising from adoption of good agricultural practices promoted under the program. During Year 4, prices for grade 1 increased to Kshs 3.50 for Fuerte variety and Kshs 4.50 for Hass variety, as compared to Kshs 2.50 per piece the previous season.

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Passion Fruit – During Year 4, Kenya BDS realized a 78% increase in the value of passion fruit entering domestic, regional, and international markets, with Kshs 58,537,500 in sales. A second firm, Kenya Horticultural Exporters (KHE) joined East African Growers (EAGA) as the second major exporter in formalizing supply contract relationships with passion fruit farmers. To date 1,524 farmers (193,408 vines) have been organized into 54 groups and linked with EAGA. Of this number, 328 farmers are women. To date 265 MT have been sold to the exporter which has resulted in a total sales volume of Kshs. 10,817,848. Under the KHE scheme, there are currently 477 farmers (58,526 vines) organized into 20 groups, with 168 of those farmers comprising women. To date 16 MT have been sold to the exporter valued at Kshs 1,034,955. Taking into account the increase in the number of mature vines, there is a very high possibility of more than doubling production during Year 5.

Mangoes – Although many agricultural crops were affected during the drought, mangoes proved a worthwhile investment for smallholder farmers in Central and Eastern Kenya. While other crops failed in Makueni and Machakos, the 1,490 mango farmers in this area harvested a total of 421, 622 cartons (4,216, 220 pieces) of grade 1 mangoes, earning farmers an income of KShs 24.5 million. Following the drought, Kenya BDS pursued an aggressive expansion in Central and Eastern to reach a total of 3,316 farmers organized into 100 groups with a total of 82,400 mature mango trees. Of these groups, 76 have an attendance rate of over 80%, with approximately 33% of the farmers being women. The program currently has 5 field-based Group Management Officers each with an average of 20 groups and 18,000 mature mango trees. Working relationships have been established with 8 exporters (2 of them large-scale) and farmers through formal supply contracts.

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Lake Victoria Fish – Over the past year Kenya BDS continued with a number of interventions to increase growth and incomes along the shores of Lake Victoria. A total of 42 fishing gear retailers and 6 wholesalers were actively linked through horizontal bulking arrangements and vertically integrated supply deliveries. Through these efforts a total of 2,500 fisher folk were able to access fishing gear with increased efficiencies. Uptake of the Omena rack-drying technology and market linkage arrangement with lead firm Promasidor has expanded dramatically. By the end of Year 4, the Omena market linkage activity had expanded to 519 Omena women processors organized into 20 groups from 13 beaches. A total of 196 racks have been constructed on full commercial terms between the Women Omena processors and lead firm. Through these combined efforts Kenya BDS realized a 279% increase in the value of Lake Victoria Fish produced under the Program.

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Specific Achievements

The Kenya BDS mantra is that a donor practitioner has no business developing, promoting, or facilitating a service if it is not commercially viable in the local market. This is in line with the USAID objective to “increase access to business services” on a commercial basis. Following are the five most significant achievements over the past year in which Kenya BDS has introduced, demonstrated, and left behind a functioning commercial intervention that can now both replicate and expand without donor support.

Achievement 1 – Creation of a Commercial Market for Grafting and Pruning Services

Grafting and pruning services were identified by Kenya BDS as a critical activity for increasing yields, productivity, and incomes among smallholder farmers. Grafting allows a farmer to change varieties of already established orchards to suit market trends, increase the growth rate of seedlings, take advantage of rootstocks of superior growth habits, and increased resistance against disease and insects. Pruning is not only critical for pest and disease control, but it allows a farmer to control tree size for ease of harvesting and chemical application, while allowing for faster vegetative growth, early flowering, and production of larger fruits.

During Year 4 Kenya BDS scaled up efforts to develop a total of 95 grafting and pruning service providers. Of the 95 trained, 93% (88 service providers) are currently operating successfully as independent business-people in the private sector. Some providers have developed relationships with small-holder farmers on a retainer basis, whereby they have been contracted to oversee a

farmer's crop on a monthly basis, and provide crop husbandry services when needed. One female provider based in Makueni developed a new technology for dissecting a scion, thereby producing two for grafting. The technology has been studied by KARI, and recently introduced into its own technical curriculum.

Over the past year commercial uptake of grafting and pruning services has been strong. A total of 3,923 smallholder farmers paid full commercial rates to access these services, resulting in the full rehabilitation (top-worked, pruned, grafted) of 18,727 avocado and 12,526 mango trees. To professionalize their offering, individual service providers have formed an Association. As members of the association, service providers operate with a minimum quality of service delivery. This includes a coding and labeling system to identify trees that they have worked on to avoid problems arising from individuals that have attempted to replicate their services without the proper technical knowledge and materials. Accredited members also provide a satisfaction guarantee for the smallholder farmer. If a grafting procedure is not successful, the provider will return and graft an additional scion until the tree shoots.

To stimulate demand for grafting and pruning services, Kenya BDS has undertaken a number of awareness creation events. These include farmer field days, sensitization barazas, and exposure visits. One tool includes a marketing pamphlet sponsored by Osho Chemicals which lists the contact information for each service provider in the District. The pamphlet is fully funded by the private sector.

Achievement 2 – Development of a Vibrant Input Supply Market for Quality Grafted Seedlings and Certified Planting Materials

Tree-fruit crops are generally low-margin commodities, meaning a small-holder farmer makes money largely through volume as compared to price. To ensure the small-holder farmer is competitive, both within Kenya as well as the global market, Kenya BDS and collaborating lead buyers have been promoting the theme of “larger smallholders.” Farmers have responded to this call by: 1) planting new seedlings; and 2) sourcing quality scions to convert their indigenous-variety crop. Under all Kenya BDS market linkages programs, participating farmers are expected to source planting materials (seedlings) from certified commercial nurseries using their own funds. This increased demand has led to a surge of individual and group-level nursery operators in each of the tree-fruit commodities.

In passion fruit alone, a total of 304 group- and individual-level commercial nurseries have been established for grafted purple passion fruit. Many have already been certified by HCDA. In Mpeketoni, mango farmers have established 17 group- and 16 individual-level nurseries comprising of both grafted mango seedlings and other exotic trees. For both avocados and mangoes, clean mother blocks and healthy planting materials have been a constraint, leading Kenya BDS to encourage both service providers as well as farmers encouraged to develop their own commercial nurseries. In collaboration with KEPHIS, detailed investigations were conducted with candidate farms that could serve as sources for clean scion materials. Over the past Year, a total of 17 farmers were inspected and approved by KEPHIS throughout Makueni and Maragua.

Achievement 3 – Emergence of Commercial Market Linkage Service Firms

Several donor programs have recently targeted group formation as a means of achieving economies of scale for small-holder farmers, as means for bulking of inputs as well as accessing the market. Unfortunately, many group formation and market linkage activities have been carried out as a direct service provision by donor programs, with no vision for sustainability. It is the opinion of Kenya BDS that, provided group formation and market linkage services demonstrate

value for both the buyer and smallholder farmer, they can and should be provided by the private sector.

Kenya BDS has tested a number of commercial group formation and market linkage service models through locally contracted facilitators. Each began with a pilot intervention to demonstrate value to both smallholders and buyers before scaling-up and commercialization. During the past year, two models have begun to emerge in both the tree-fruit as well as Lake Victoria fish subsector. The first may be described as an “in-house” model, where the lead firm has embedded the service directly as part of their core business in sourcing from smallholders. Kenya BDS is testing this model with exporter Promasidor for the sourcing of Grade 1 Omena through women processors, as well as with Indu-Farm in the procurement of Grade 1 avocados for export.

Another emerging model may be described as “outsourcing,” whereby the lead firm contracts an independent service provider to assume responsibilities such as group formation, production forecasting, grading and collection coordination, and maintenance of a quality management system. Through Kenya BDS, a number of independent service providers have recently been registered as private companies to undertake this role, including *Fineline Rural Reach, Ltd.* and *Agri Outlets Company*. More than 10 lead firms (processors and exporters) are currently sourcing produce through this arrangement. Remuneration for these service providers is calculated by a percentage based levy on the sale of grade 1 fruit acceptable by the lead firm. To date, over 8,000 smallholder farmers have been linked with the market through this commercial service.

It is important to note that Kenya BDS is not prescribing a particular approach. Rather, the evolution of each group formation and market linkage model has been based upon the particular dynamics of the smallholder farmer (or fisher-folk) as well as preferred sourcing strategy of the buyer. Whichever the service offered, what matters is that the market linkage service is now sustainable.

Achievement 4 - Commercial Uptake of Rack-Drying Technology

The traditional method of processing Omena involves sun-drying the fish on the ground for a period of several days. This rudimentary process often results in very poor quality, as the Omena comes into direct contact with sand and shells, not to mention chickens and dogs that peck and walk over the product. The ground drying method also limits the ability for Omena to properly dry, thus increasing the chance for aflatoxins and mold. Finally, the constant sweeping of Omena on the ground by women processors to increase the speed of drying is ergonomically harsh on the lower back.

During Year 4, a local rack drying technology was introduced to women Omena processors. It was important however that the technology could be sourced through local materials, and cost-effective for the users. The racks consisted of simple local materials including wood and wire mesh. To develop a sustainable value chain and drive up-take of this technology through commercial incentives, Kenya BDS formed individual women processors into groups, and linked them with Promasidor, an Omena exporter.

Through Promasidor, the rack-drying technology was provided to each beach as demonstration equipment. For those women processing groups willing to enter into a supply contract relationship, Promasidor would provide the wire mesh and netting on credit, while the women constructed the wooden rack frames through their own labor and resources. Promasidor would also construct a fence around the racks for each of the groups to protect against theft and tampering by individuals outside of the program. The exporter would then buy all Grade 1 Omena

processed on the racks, at prices 25% - 30% over that traditionally offered by brokers. In addition, the exporter would provide buyers credit for women to purchase Omena in the morning from fishermen, as well as collection, transport, and timely payment for the processed fish.

Uptake of the technology has been strong. During the pilot period in early 2006, 335 women were organized into 17 groups at 10 beaches in Suba District. Following sensitization and supply contract development, 83 racks were constructed. From these racks, an initial 1,346 Kgs of Grade 1 Omena was purchased by Promasidor. The price premium, guaranteed market, and increased productivity stemming from the technology have created a demonstrator effect among women Omena processors in Suba District. The number of women processors has now risen to 519 organized into 22 groups, at 13 beaches. Over 196 drying racks may now be found throughout Suba District. From the last Quarter of Year 4 alone, a total of 31,097 Kgs have been sold to Promasidor as a result of this new technology. Most importantly, dissemination and uptake of the new technology has taken place through private sector, commercial incentives – a critical factor for sustainability.

Achievement 5 – Full-Scale Rollout of Innovative Value Chain Financing Offers

Over the past year Kenya BDS has piloted and ramped up a number of innovative value chain financing arrangements. In Makueni and Machakos, Kenya BDS facilitated the delivery of various spraying and agrochemical services to farmers by spray companies including Twiga, Osho, and Farmchem. In each of these arrangements, the cost of agrochemicals was financed by input suppliers for those farmers active in their operational areas. To address financing constraints, farmers in Mavindini production cluster were linked to the Mavindini Farmers Cooperative where they are accessing credit at favorable rates. SCODIP provided chemicals to farmers on credit, while K-Rep community bank extended credit of up to KShs.8, 000 per farmer with shares to buy farm inputs and pay for labour in their orchards. In the Matiliku production cluster, mango exporter Keitt Ltd. extended credit for agrochemicals to farmers which was deducted after selling their produce. As a result, an increase of 75% in grade 1 production was noted *in the midst of the drought season*.

Perhaps the greatest achievement by Kenya BDS was convincing a large commercial bank to provide credit to smallholder farmers, an action previously unheard of in the avocado production zones of central Kenya. Managed by Kenya BDS facilitator Ideal business Link (IBL), this program allows avocado farmers possessing supply contracts with lead buyers to apply for credit facilities at Equity Bank, with an assurance from the exporter that farmers' payments for their fruits will be channeled through their accounts at Equity Bank.

With this assurance from the export companies (through signing of a MoU) the bank is able to process farmers' applications within 48 hours, after which they issue an offer letter indicating the approved loan amount and repayment terms. Once farmers receive this offer letter, they then requisition spray services. Spray services are provided from a private company to coordinate the work of 57 spray service providers developed under the Kenya BDS Program. They are currently undergoing accreditation by the Agrochemical Association of Kenya (AAK). The agrochemical spray services company then provides the services to farmers with each farmer signing an invoice for the number of trees sprayed. Each farmer group then signs an authorization to Equity Bank for the spray services company to be paid.

The program is flexible, and farmers who do not wish to take a loan are allowed to pay cash to their groups which is then deposited to the group account so that payment for spraying services is done at once for all farmers (those paying cash as well as those paying through loan) through the bank authorization letter made by the group after each spraying cycle.

During Year 4 of this program, a total of 3,500 farmers with 20,520 avocado trees in Maragua and Thika District received 3 cycles of spray services through this arrangement. Through its own financing, the spray services company has also bought 38 boom sprayers and a van for transporting the various spray teams in the field. This has greatly enhanced efficiency, and now farmers are able to receive spray services per the recommended 21 day spraying cycle.

With this consistency in spraying there are already noticeable improvements in quality and productivity of orchards, particularly since unlike other years, spraying commenced during flowering which has helped in reducing flower abortion. Equity Bank is already keen to extent this type of credit facility to farmers in different commodities, and Kenya BDS will be exploring the possibility of providing these services to passion and mango farmers by next season. What may be the most momentous achievement of this program however is that it promises to be perhaps the most feasible way towards EurepGap certification for smallholder farmers – centralized provision of pest and disease control services where audit/control points are minimized.

III. PROGRAM INPUTS AND THEIR ADEQUACY

Over the past year funding has been steady, allowing the program to proceed without any interruption of scheduled activities. By the end of Year 4, Kenya BDS had expended \$4,015,239 of the Kenya BDS budget. This represents 99% of spending against the contract amount of \$4,043,821 for the same period, indicating that the Kenya BDS burn rate is directly in accordance with our contractual requirements.

Program inputs were generally sufficient to support the targeted interventions in both tree-fruits and Lake Victoria fish. *Minimalism* and *cost-sharing* were key themes when undertaking market facilitation, which enabled Kenya BDS funds to achieve greater impact. Each intervention was carried out with the “lightest touch” possible to minimize market distortions and donor signals. Moreover, both service providers and lead firms were required to share costs and even invest at some level within each intervention to ensure risk is shared, while increasing the potential for commercial uptake. All of the business services targeted by Kenya BDS were immediately offered on commercial terms, which allowed Kenya BDS funds to be extended to other areas.

Finally, Kenya BDS was pleased to receive a one-year extension effectively increasing the period of performance to 6 years through September 30, 2006. This additional support will allow Kenya BDS to fully exit from all business service interventions in both the tree-fruit and Lake Victoria fish subsectors, providing the opportunity to monitor, support, and provide targeted technical assistance as needed to ensure full commercial viability of all interventions is achieved.

V. VULNERABILITY ISSUES, PROBLEMS, DELAYS, AND CORRECTIVE ACTIONS

Following is a summary of some of the principle challenges faced by Kenya BDS and corresponding remedial activity during Year 4.

Passion Fruit Production Reaches Critical Mass

Three years ago when Kakuzi Limited got out of passion fruit farming, Kenya started having an acute shortage in the supply of passion fruit both for the processing and export markets. Partly

owing to this shortage, the lead passion juice processing factory in the country established in the 1960s based in Thika went out of operation. Similarly, many exporters started experiencing difficulties in meeting their customer supply orders and some, altogether, removed passion fruit from their export lines. Kenya BDS started its passion fruit program in Embu/Meru at this time in August 2003 focusing on promotion of passion fruit cultivation among farmers in the area as an alternative high value crop, and linking farmers to the market through longstanding supply contracts.

During January and February over the past year Kenya BDS started making a presence in the supply of passion fruit in the country. For the first time in Kenya, passion fruit production from a coordinated source of supply reached 25 – 30 Metric Tons per week for grade 1 quality fruit. With this level of production, it has become possible for exporters to start exploring serious possibilities for exports by sea. This possibility became a reality when East African Growers did its first trial runs in early February in response to the increased production. Export by sea requires a volume of at least 10 tons (20 ft container) collected and packed within a span of two days and this is only becoming marginally possible with the production levels achieved this past January/February. Sea transport is the way to go as the continued increase in airfreight charges is making Kenyan passion fruit unfavorably competitive to passion fruit from Colombia and other countries where production volumes allow for sea transportation to the European market.

While the increased production has made a significant impact in farmers' incomes, with earnings over the two month period topping over Ksh 4 million, this peak production period did not go without a significant measure of challenges. The increased production came in without full preparedness of the absorption capacity of the market. This was partly caused by weather effects of the prolonged cold spell that pushed the peak season to start in late December rather than in November. With production shooting up from 5 tons per week in November to over 25 tons per week in January, EAGA quickly made adjustments to start taking 15 tons per week. The company also quickly invested in R&D for sea exports and was ready to do trials by the first week of February.

Efforts by EAGA were however not enough to clear farmers' produce. As remedial action, Kenya BDS quickly engaged other lead exporters to come in. By the end of January, KHE was buying passion fruit from program farmers and another was finalizing market arrangements to commence purchases. Another remedial measure taken to deal with the increased production was establishment of market linkages with a leading processor, Del Monte, for purchase of all grade II fruit.

To avoid a "reactive" response to such production booms in the future, Kenya BDS has also streamlined and regularized field reporting requirements on production estimates. Group management officers are now responsible for providing projections on the status of their passion fruit farmers produce on a weekly, monthly, and seasonal basis. The report is updated every Friday in advance of field collection by the exporter, and should enable the scheme to avoid any surprises on production booms in the future.

Impact of Drought on Avocado Production

Of all the tree-fruit commodities, avocados were the most heavily affected by the 2005 drought. With the decreased amount of rainfall, avocado trees experienced late blossoming and heavy flower abortion. This resulted in an average decrease in production from 750 fruits per tree in Year 3 to 450 pieces of fruit per tree in Year 4. Although average production decreased, it was interesting to note that grade 1 yields overall improved from 30% in Year 3 to 50% in Year 4.

The drought not only decreased overall tree productivity, but it also resulted in a late-season harvest, preventing Kenyan produce from taking advantage of the counter-season window of January – March. Fortunately for Kenya, production was down globally with early frost in South Africa, a strong currency in Chile, and the war with Lebanon which all but destroyed Israel’s crop for 2006. Kenya BDS was limited in adopting remedial actions in response to such challenges, other than encourage farmers to remain committed to their lead firm relationships, and prepare for next harvesting season.

Donor Distortion in the Provision of Grafting and Pruning Services

Kenya BDS supports the development of commercial business services that can be offered and consumed through the private sector. On various occasions over the past year other donor funded activities have arisen that operate with heavy subsidies and free handouts to smallholder farmers. Such activities send mixed messages to farmers, crowd out private sector players, and create significant donor distortion in the market.

Kenya BDS has been supporting a grafting and pruning program with local facilitator Ideal Business Link (IBL) since April 2005. This program is aimed at increasing the availability of commercial service providers in top-working, grafting and pruning among mango and avocado farmers in Maragua (avocado) and Makueni (mango) Districts. In Makueni, this program has developed a total of 33 service providers, but over the past year has been facing implementation challenges due to distortion of the market by other donors. One of these donors is the World Bank financed Kenya Agricultural Productivity Program (KAPP), implemented through KARI in conjunction with the Ministry of Agriculture. In Makueni, this program is targeting mangoes among other crops in the same areas where Kenya BDS is also working. The program also targets provision of business services to farmers. However, unlike Kenya BDS which does not subsidize transaction-level activities, this program provides monies to groups to enable them to hire service providers.

Information on the ground indicates that a grafting and pruning service provider is paid Kshs 600 per day when they meet and provide services to a farmer group. Each service provider has entered into service provision MoUs with the farmer groups interested in their services, and all they need to do is get a signed voucher from the group after delivery of a service which is then liquidated with KAPP. The effect of this program has been extremely damaging to the commercial service providers developed under Kenya BDS. For example, Alphonse Muli of Kasikeu Location, who had even opened an office and employed 2 assistants under the Kenya BDS grafting/pruning program, has now closed the office and started offering his services under the KAPP program because it is easier to make money through a subsidized scheme. The money is assured, and with some collusion, vouchers can be signed even when no service is appropriately delivered. Besides the effect on the SPs, this program is also making it difficult for other SPs to sell their services to farmers, who are more reliant upon the KAPP program to cover their costs.

As remedial action, Kenya BDS has documented such distortionary activities on the ground and forwarded our findings to a World Bank review team which is currently reviewing the KAPP program. Should the problems continue, Kenya BDS will launch a formal complaint to both the World Bank and Ministry of Agriculture.

V. TEAM WORK, COLLABORATIONS, AND SYNERGIES

Over the past year Kenya BDS undertook a number of joint activities with USAID partners, donors, and Kenyan Government bodies to leverage field experience and maximize use of limited resources.

USAID, US Government, and SO7 partners

Collaboration has continued with SO7 partners. Kenya BDS is an active participant in the Horticulture Task Force with the Kenya Horticulture Development Program (KHDP). We also organized and hosted all the technical staff from ACDI/VOCA-Africa on a one day field visit of Kenya BDS avocado market linkage activities in Central Kenya. More recently, Kenya BDS collaborated with the Farmer-to-Farmer Program in providing assistance to Av-Oil Industries, one of the major avocado processors based in Kenya.

From June 14-16 Kenya BDS collaborated with the USAID Microenterprise Office by presenting at the global Learning Conference titled *Microenterprise Development in a Globalizing World*. Hosted by USAID in Washington, D.C., the event brought together leading practitioners from around the world to examine the impact of globalization on emerging markets, microenterprise development, and poverty alleviation. Kenya BDS presented in a session titled *Enhancing MSE Competitiveness in a Globalizing World*, where our experience in creating and sustaining competitiveness for small producers in the avocado value chain was featured.

Kenya BDS also continued collaboration with the USAID Practitioner Learning Program in exploring *Strategic Alliances for Financial Services and Market Linkages in Rural Areas* through local facilitator Resource Mobilization Center (RMC). Through Kenya BDS and SEEP, RMC is developing rural based service providers to enhance savings among fisher-folk, while sensitizing and providing supply-side assistance to formal financial institutions to service this previously ignored sector. From 3-7 July, USAID IGP hosted a workshop in Asuncion, Paraguay, whereby RMC met with other IGP grantees to share and document emerging lessons learned and experience among peers, as well as identify learning products relevant to practitioners working in microfinance and value chain development.

Over the past year Kenya BDS also employed 3 Peace Corps volunteers in the field. Jason Kinker was based in Mbita and assisted with privatization and start-up of a commercial ice production plant. Jason Milliski was based in Meru and assisted small-holder farmers in passion fruit production and market linkages. In Thika, Andrew Miller assessed the management information system requirement of Kenya BDS avocado market linkage operations, while providing technical support in the design of an agrochemical loan program with Equity Bank.

Other Donors

Kenya BDS continues to serve as Chair of the BDS Donor Working Group, a national body of donors and major donor contractors implementing large BDS and value-chain related programs. Members include the World Bank, DFID, IFC, SwissContact, Danida, USAID, JICA, UNDP, and EU, to name a few. The Group serves as an informal body to: coordinate field activities; vet future program design; share technical information; and provide references on local partners. The Donor Group also hosts an Annual National Conference which gathers over 80 donor practitioners from within Kenya and the region to share practical experience and discuss emerging trends in value-chain facilitation and BDS market development.

Kenya BDS has served as an active technical content provider in mango, passion, and avocado farming for the interactive radio program *Mali Shambani*. The commercial venture was designed

and launched through FIT Resources with support from the DFID-funded Business Services Market Development Program (BSMDP). The program provides information on farming techniques, inputs, quality standards, weather and seasonal issues, market prices and trends, business tips, land use, and financing opportunities to smallholder farmers. Each program also features a question and answer segment, whereby listeners can call (or sms) in and interact live with a featured expert panel. According to a recent report by Steadman Research, in the first quarter of 2006 after KBC Kiswahili News, *Mali Shambani* was cited as the most listened to radio program by rural farmers in Kenya.

With GTZ, Kenya BDS is currently exploring the opportunities of eco-labeling for the Nile Perch fish industry. A recent film titled “Darwin’s Nightmare” sensitized European Nile Perch consumers on the negative aspects of the fish trade, which resulted in a back-lash towards many retailers offering Nile Perch fillet. To protect these high value market channels, eco-labeling is being explored as a type of free-trade certification to guarantee that the Nile Perch fillet is sourced through non-exploitative practices.

Government of Kenya

While policy formulation is not a core activity under Kenya BDS, we maintain close relations with Government officials in both the fisheries and agriculture sectors. Through stakeholder meetings and vetting sessions, Kenya BDS was an active participant in development of the Kenya Fisheries Policy as well as Strategic Plan for the sector. This included direct technical advice to the Fisheries Director in support of development of the Kenya Fisheries Development Authority and a fish levy trust. At a broader level, Kenya BDS participated in the quarterly Ministry of Livestock and Fisheries Development “Consultative Sessions.” Presided over by the Permanent Secretary, the forums provided an opportunity for Kenya BDS, KDDP, and USAID to discuss ongoing implementation of field activities with the Ministry.

At the field level, Kenya BDS has maintained a close working relationship with the Kenya Agriculture Research Institute (KARI) for the technical training of 145 grafting, pruning, and spray service providers. For each of these technical areas Kenya BDS utilized the training facilities of KARI/Thika to host residential training courses for future service providers. The 6-day courses covered agronomic and physiological aspects of mangoes and avocados, as well as technical skills in grafting, pruning, and spray services. As a national research institute, KARI also provided excellent demonstration farms which enabled participants learn how to practically manage an orchard. In each of the market linkage activities related to passion fruit, avocados, and mangoes, Ministry of Agriculture extension officers have proven invaluable in assisting with the initial identification of new production zones, hosting sensitization barazas, and even providing technical training when available at weekly group meetings.

Kenya BDS has also collaborated closely with KEPHIS and HCDA in the certification and registration of input suppliers. Over the past year, a total of seventeen farms were inspected and certified by KEPHIS as sources of healthy planting material (scions). Over 30 group and individual commercial nurseries have been developed under Kenya BDS for passion fruit and avocado farmers. They are presently being inspected by teams from HCDA, the Ministry of Agriculture and KARI for registration.

In the fisheries sector, the activities of Kenya BDS were featured in the latest edition (Vol IV No. 1) of *Samaki News*, the official magazine of the Department of Fisheries of Kenya. In addition a feature article on Kenya BDS activities, the magazine included a message from Permanent Secretary Dr. Jacob Ole Miaron where he stated the “USAID funded Kenya Business Development Services Program has spearheaded the ‘Fisheries as a Business’ programme in parts

of Lake Victoria, with delightful gains some of which include the unprecedented establishment of beach banks.” On the ground Kenya BDS has worked closely with the Suba-based Fisheries Health Inspector to achieve HACCP certification for Promasidor, a local Omena exporter. Close collaboration also took place with the Fisheries Department to design a smallholder aquaculture production cluster activity in Busia and Vihiga Districts. This entailed a series of visits with the Fisheries Director, Kenya BDS, and USAID staff to the Sagana research and extension site, Moi University’s aquaculture demonstration farm in Eldoret, and the Wakhungu Demonstration farm in Busia District. Kenya BDS eventually designed a program based upon these visits which incorporates joint implementation with the Fisheries Department.

VI. SUCCESS STORIES

Following are just a few of the success stories collected by Kenya BDS during Year 4.

Omena Market Linkage Activity at Litare Beach – Monica Adhiambo Daula

Monica Adhiambo Daula lives at Litare Beach, Rusinga Island in Suba district where she is involved in the fish business. She is 28 years old, and married with one child in class 4. She has secondary education up to Form Two, however dropped out of school because of teenage pregnancy whereby her father refused to pay her school fees. Monica is in her second marriage. Her first husband died hardly one year into their marriage, leaving her as a pregnant teenager widow with no source of income. She was also homeless, as her father could not condone having a pregnant teenage daughter in his home.

Monica still hopes that one day she will complete her secondary education and “*hold in her hand*” a Form Four certificate. She is presently settled in her second marriage, which consists of three members’ two adults, i.e. Adhiambo and her husband, and their daughter. Her husband is a fisherman hence they support each other reports Adhiambo. *Jaoda en jalupo kendo okonya kaka dichuo nyalo konyo chiege-wadak gi kwe.* My husband is a fisherman and he supports the way he should and we live in peace.



Monica joined the Litare Omena Market Linkage Women’s Group when it was started by Kenya BDS in August 2005. She is a hard working lady, and was elected Secretary where she works hand in hand with the other group officials to ensure the stability of their group. She views her elected position as a sign of leadership where, if she had been given a chance to complete her secondary education, she could have moved far places in her career. *An di ne a tiek sekondari di koro an mabor* comments Monica as she smiles during the interview. As Secretary, she ensures each of the 26 members contributes Ksh 20 per week for the group savings account. So far the group has saved Kshs10, 000 because of her encouragement. To set an example for other members, Monica herself has saved Ksh 2,500 in the group account at Homa Bay Co-Operative Bank, and intends on opening a bank account for her daughter and a joint account with her husband. She comments that since the initiation of the project, she has gained a lot of knowledge on savings, group leadership/management, record-keeping and basic business management for her own business and for the group (*project ose puoja tiyo matek, Kano pesa e bengi, rito kuan mar ohala mara, kata mar girup*).

In the month of July, 2006 she sold a total of 1.3 MT of Omena valued at Kshs 58,000. From the proceeds, Monica purchased 2 fishing nets, 2 lamps, wages for help hands, and one domestic animal goat. The remaining money was used for school fees. On average, her monthly proceeds from fishing have more than doubled, and sometimes tripled from previous times. With this kind of income she intends to invest in sugar plantation beginning October 2006, and has already sent money for land preparation. She has also managed to take her only daughter to a boarding school in Homa Bay, instead of the day school at Litare Beach where she lives at the moment. “If I did not get better education my child must get the best and I must work hard for her future not like me”, she comments. (*Kata kane ok ayudo thuolo mar somo to nyathina nyaka koro som asoma maber*).

Monica would like to get an individual loan of Ksh. 22,000 to purchase a second boat of her own because in the past she has been hiring on a monthly basis. She can be able to pay this loan in two instalments of Ksh.12, 000 and Ksh. 10,000 as this will help them improve their income and standards of living. “However I am very happy because through my sales in June and July have managed to purchase one boat and fishing net which are the necessary fishing gears” says Monica. Following her interview, Monica’s request “*was that you send all my sincere thanks to USAID and Kenya BDS who have empowered my lifestyle. I promise them that come December, I will give you another interesting report concerning what I will have accomplished through this project. Thanks be to GOD who has remembered me even when I did not complete my education.*”

Omena Market Linkage Activity at Luanda Rombo Beach – Penina Oguta

Luanda Rombo Beach is one of the beaches initially identified as having high potential for Omena production. Penina Oguta is an Omena trader at Luanda Rombo Beach, who also owns a boat. The 66 years old lady quotes an English expression that “old is gold.” She never went to school because when she was born there were no schools in the area.

Penina is married and had 16 children, but 11 have since died and the remaining five are grown up and do not stay in the household. Penina and her husband are now elderly. The husband is very frail and is no longer physically or economically active. Penina and her husband however are ever close to each other, and whatever she does is in consultation with him. She believes the husband is the head of the household as long as he is alive. Penina enjoys stretching her finger to reveal her wedding ring, indicating that she is very comfortable in her marriage. Despite her age, Penina is a highly motivated entrepreneur. As early as 1 a.m. in the morning Penina can be found among those other buyers waiting for their fish to land. If one delays or arrives late the fishermen may opt to sell their catch to other traders. She feels strongly that for the business to succeed, one has to be personally present and manage it all the time. This explains why she has to wake up early hours of the day.

Penina Oguta joined Ng’uono Women’s Omena Linkage Group to sell Omena to Promasidor under the arrangement introduced by Kenya BDS. During the initial stages of the project, she attended all the trainings prior to registration as was required of all members of the group. During the trainings, she says she gained tremendous insight on leadership, group management, and basic accounting. She also realized savings as a key source of finance for business expansion. Before the Program, she had been running the business for a long, however had to hire a boat from members of CCF who had boats of their own. As a result of the training, her savings realized a net worth of Ksh 25,000. In June 2006, Penina bought a boat with these funds, and now is actively fishing for additional species like Tilapia and Nile Perch to diversify her sources of income. Penina is now in charge of her own destiny.

Increased Productivity for Smallholder Avocado Farmer - Charles Ndungu

Charles Ndungu was among the first members who were receptive of the avocado project being implemented by local facilitator Apex Microcredit Consultants (AMC) through the Kenya BDS Program. He enrolled with the project as a member of Kaaga "A" Avocado Business Self Help Group, Ichagaki location, one of the first groups to join the project. Charles joined the project with only six (6) mature Fuerte avocado trees.

One of the things he has found particularly useful is the education of the group management officers which he finds quite practical. He especially likes the way the officers apply demonstration methods during the training of various aspect of orchard management. In the past one year he has attended all the trainings *"We like coming to these meetings since we talk business unlike other social groups. Within one year we have realized the benefits of the project and we have a great future. I should have joined earlier!"* Charles reckons when asked whether the regular bi-weekly meetings are important.

His commitment is further demonstrated by the extensive (333%) orchard expansion that has seen his population of avocado tree increase in numbers as well as variety, to a present level of 100 Fuerte and 100 Hass seedlings. These seedlings were planted immediately when the project started training farmers in Maragua Division. Already some of the seedlings have started flowering and are pregnant with fruits of high quality and quantity. Charles says he has seen the benefit of pruning, manuring, weeding, and pest control. He ritually visits his orchard every day, and the condition of his trees is has become personal gratification to his heart for work well done. Charles expects his fruits will find their way to the export market when harvesting starts in February 2007. He thinks the market will appreciate his quality fruits as much as he will appreciate the income derived from their sale.

A visit to his farm is quite a thrilling experience for those who have adopted farming as a business. The outfit reveals a commercial approach that has resulted in a well managed orchard that occupies land previously occupied by coffee. Unlike the older avocado trees in the area, the young trees are continuously pruned, manured and the pests controlled as per the advice given by the agronomists. Charles is a proud farm manager, and is optimistic about the future *"these trees will benefit my family for a long time, they require less effort than coffee, the avocado payments are made every two weeks unlike coffee."*

His expectation is to get more money from avocado farming than he got from coffee. He is very positive that the market will be strong when he produces quality fruits. He plans to increase more avocado seedlings in the coffee plantation which he wants to minimize in order to diversify and to allow more space for the avocados. He hopes that more of his group members will follow his decision so that the positive impact can be great in his village. Indu-Farm, the exporter buying from farmers in the area, has made it a requirement for all farmers in the project to plant new seedlings to improve on future quality of avocado produce per market demands.

Increased Smallholder Avocado Production through Grafting and Spray Services – Cyrus Mburu

Cyrus Mburu is a former MOA extension officer who also worked with Twiga Chemicals for 30 years as a field manager. He is 82 years old and retired with 6 boys and 2 girls. He has 28 acres and grows avocados and bananas (used to do oranges).

In 2005, Mr. Mburu was approached by Dominic Njogu, a service provider trained by local facilitator Ideal Business Link (IBL). Njogu was a grafting and pruning services provider, and worked tirelessly to sensitize Cyrus on basic crop husbandry techniques which had previously

been ignored. At first it was hard to convince the farmer to top-work or cut down his trees to manageable sizes. Such activity was critical however for effective spraying and harvesting of his fruits.

After much persistence Cyrus hired the service provider to prune his 150 Fuerte trees. During this time, he also decided to graft and convert 26 of these trees to Hass variety. The sensitization was also effective in general crop husbandry, as Cyrus since this initial service has invested in casual laborers who continually weed and collect all the wastes from his orchard.

In the month of August, 2006 IBL introduced the spray program to Cyrus. With well managed crop husbandry, couple with the correct application of agrochemical spray, Cyrus claims he can now harvest 1,000 - 2,000 pieces of grade 1 avocado, with less than 10 pieces of reject (per tree)! There are several individuals who are getting interested to buy from him the fruits as they are assured of quality. Both Indu-Farm and KHE have already approached him to sell to them as they are assured of quality. Funds earned from his farming will be ploughed back into bettering his production, as well as supporting his family.



Due to the market requirements, Mr. Mburu is ready to ensure that he meets the spray protocol standards so that his fruits are sellable in the export market. His advice to farmers is to critically evaluate their fruit farming as a business, and to plant more trees so that they can have a better say when it comes to marketing of their produce. He says he is ready to attend forums where farmer's interests are well represented and farmers' efforts are compensated.

IBL has selected Mr. Mburu's orchard as a demonstration site which is used in educating other farmers on crop husbandry. He is a good example to many farmers in using integrated methods of pests and disease control by observing field hygiene, which reduces incidences related to insect, pests and disease infestation.

Cyrus remarks that although he used to work within the chemical industry during his early years, he does appreciate the spray program. It allows him from having to search for the right chemicals from agrovets shops, and provides him a service which is packed, priced, and offered by a skilled provider with the proper spray records. He comments that the investment he has put into the orchard will not frustrate him, as he can always sell his fruit at the prices he determines due to his volume. Nevertheless, this he says can only happen when the quality standards are right.

Annex A

Annual Performance Monitoring Plan

Annex A: Kenya BDS – Annual Performance Monitoring Plan

(End of Year 4)

Intermediate Result	Indicator	Yr 1 Results	Yr 2 Results	Yr 3 Results	Yr 4 Results	Yr 5 Results	Yr 6 Results	Life of Project Target
IR 7.1 Increased productivity of selected products	Percentage change in annual production per unit grade 1 (<i>Mango</i>)	N/A	100 pieces per tree	150 pieces per tree	23% 185 pieces per tree	-	-	396 pieces per tree
	Percentage change in annual production per unit grade 1 (<i>Passion</i>)	N/A	.11 Kgs per vine per week	.15 Kgs per vine per week	.16 Kgs per vine per week	-	-	.26 Kgs per vine per week, or 7 fruits per vine per week
	Percentage change in annual production per unit grade 1 (<i>Avocado</i>)	N/A	50 pieces per tree	206 pieces per tree	9% 225 pieces per tree	-	-	442 pieces per tree
IR 7.1.2 Increased use of Technology	Number of farmers using improved technology	N/A	1,110	16,197	29,739	-	-	29,950
IR 7.1.3 Sustainable use of Natural Resources	Number of farmers adopting NRM practices	N/A	405	2,780	3,475	-	-	6,720
IR 7.2 Increased agricultural trade in domestic, regional, and export markets	Percentage change in volume of horticultural crops and products entering domestic, regional, and international markets (<i>Total export and domestic</i>)	N/A	2,804 MT	348% 12,550 MT	23% 15,481 MT	-	-	260% 27,520 MT
	Percentage change in volume of horticultural crops and products entering domestic, regional, and international markets (<i>Total export</i>)	N/A	1,126 MT	340% 4,956 MT	55% 7,706 MT	-	-	355% 21,000 MT
	Percentage change in volume of horticultural crops and products entering domestic, regional, and international markets (<i>Total domestic</i>)	N/A	1,678 MT	353% 7,594 MT	2% 7,775 MT	-	-	90% 20,475 MT
	Percentage change in value of horticultural crops and products entering domestic, regional, and international markets (<i>Total export and domestic</i>)	N/A	Kshs 17,983,680	592% Kshs 124,528,731	54% Kshs 191,801,940	-	-	430% 375 million
	Percentage change in value of horticultural crops and products entering domestic, regional, and international markets (<i>Total export</i>)	N/A	Kshs 10,119,740	710% Kshs 82,037,329	65% Kshs 135,359,940	-	-	545% 307 million
	Percentage change in value of horticultural crops and products entering domestic, regional, and international markets (<i>Total domestic</i>)	N/A	Kshs 7,863,930	440% Kshs 42,491,402	33% Kshs 56,442,000	-	-	150% 102 million
IR 7.3 Increased access to business support services for MSEs	Number of MSEs accessing business support services	1,665	23,479	39,135	58,913	-	-	65,235 MSEs
IR 7.3.3 Non-financial services delivered cost-effectively	Total number of Business Service Providers participating in the BDS Program target areas	24	322	731	1,006	-	-	1,070 BSPs
	Total number of MSEs aware of program assisted business services	3,335	90,922	164,865	211,450	-	-	263,000 MSEs
	Total number of MSE producers linked with the commercial market	600	1,772	11,272	15,442	-	-	22,250 MSEs
SO7 Process Indicators	Activities	Yr 1 Results	Yr 2 Results	Yr 3 Results	Yr 4 Results	Yr 5 Results	Yr 6 Results	Life of Project Target
Approved subsector selection presentations and reports	Identification and selection of subsectors for BDS market development assistance	2	2	2	2	-	-	N/A
Approved presentation and report on selected business services	Conduct initial analysis in each sub-sector to identify constraints and appropriate BDS	8	15	15	15	-	-	N/A
Approved intervention concept papers	Conduct initial BDS market assessment of identified business services and design corresponding interventions	9	15	26	40	-	-	42 intervention concept papers
Market interventions awarded and approved	Award market facilitation interventions	6	15	23	37	-	-	28 tenders awarded

IEHA OPIN Performance Indicators	Yr 1 Results	Yr 2 Results	Yr 3 Results	Yr 4 Results	Yr 5 Results	Yr 6 Results	Life of Project Target
# of rural households directly benefiting from interventions	N/A	18,783	28,548	47,120	-	-	52,188
# of agricultural firms directly benefiting from interventions	N/A	25	32	40	-	-	40
# of male individuals who have received training	N/A	13,206	21,411	35,340	-	-	37,161
# of female individuals who have received training	N/A	4,402	7,137	11,780	-	-	15,027
# of producers' organizations, water user, trade, business associations, or CBOs assisted	N/A	158	404	568	-	-	600
# of women's organizations/associations worked with	N/A	0	56	68	-	-	70
# of public/private partnerships formed	N/A	5	19	23	-	-	26
# of technologies made available for transfer	N/A	18,783	5	18	-	-	9

Note All figures are presented as cumulative

Annex B

IEHA Performance Indicator Notes

Annex B: Kenya BDS Year 4 IEHA Performance Indicator Notes

1. Enhanced Productivity of Smallholder-based Agriculture

Commodity	Outreach (# of farmers/fisherfolk)			Number of trees (Fishing gear/racks in fish)			Volume of produce (M.Tonnes)			Value of produce (in Kshs)			Annual Productivity per tree/vine (in Kshs) : Gross Margin		
	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4
Avocados	405	4 925	6 838	10 964	51 242	67 593	1 371	8 107	7 604	3 220 674	40 093 311	44 688 240	293.70	782.40	661
Mangos	1,920	3,318	4,335	23,040	49,770	82,400	921	2,986	4,944	8,064,000	44,793,000	86,520,000	350	900 00	1,050
Passion fruit	457	2,046	2,520	41,577	210,776	250,111	130	877	1,561	2,270,104	32,881,056	58,537,500	54 60	156 00	234
Fish	52	720	3,413	260	3,600	18,576	338	3,381	12,860	20,000,000	202,800,000	770,284,500	-	-	-
Total	2,834	11,009	17,106	-	-	-	-	-	-	33,554,778	320,567,367	960,030,240	-	-	-

Notes:

1. **Avocados:** In year 2, Kenya BDS had only one export program for avocados (with EAGA). During year 3, two additional exporters came into the program (KHE and Indu-Farm) and the existing program with EAGA was expanded to bring a total of 2,116 farmers with a total of 27,242 trees. A program for linking farmers to three newly established avocado oil processing plants was also initiated bringing in an additional 2,809 farmers with a combined total of 24,000 trees. In year 4, Kenya BDS continued working with the three exporters of year 3 (EAGA, KHE and InduFarm) with a scale up on operations and also started working with an additional exporter – Kakuzi Limited. Kenya BDS also continued working with the three privately owned avocado processing plants established during year 3. Part of the expansion for the export programs however came from inclusion of farmers who were under the processing program during year 3. The effect of this was therefore a reduced number of farmers exclusively in the processing program. It is important to note however that the processing (grade II market) program targets groups both under the export programs as well as those exclusively formed for processing. During year 4, Kenya BDS also expanded the grafting and pruning intervention initiated during year 3 for accessing avocado (and mango) farmers with top-working, pruning and grafting services all geared at improving quality and productivity of their orchards. The Table below (Table 1.2) shows a breakdown of the outreach under each of these programs.

Under the export programs, farmers receive agronomy advisory services as well as productivity and quality improvement services – agrochemical spraying; pruning; orchard cleaning; and manure/fertilizer application. Through these services, noticeable changes in quality and productivity have continued to take place. During year 3, it was reported that there was an increased production of fruits from an estimated 500 pieces per tree in year 2 to 750 fruits in year 3. During year 4, weather condition (the severe prolonged draught of 2005/early 2006) led to heavy flower abortion that resulted to reduced production of fruits estimated at 450 per tree. The quality of fruits in year 3 increased from an estimated 5 – 15% grade 1 during year 2 to an estimated 25 – 30% grade 1 during year 3. In year 4, it is estimated that 50% of fruits were grade 1 for all the export programs. The price of grade 1 fruits in years 2 and 3 remained at an average of Kshs 2.50 per piece. During year 4, prices for grade 1 increased to Kshs 3.50 for Fuerte variety that comprise 90% of production and Kshs 4.50 for the Hass variety accounting for 10% of production. Grade 2 prices significantly went up during year 3 following the establishment of three oil processing plants (no processing plant was in operation during year 2). During year 2 grade 2 fruits were bought in gunny bags of up to 600 fruits each at an average price of Ksh 150. Under the market linkages program for processors initiated by Kenya BDS during year 3, farm gate prices went up to an average of Kshs 4.00 per kg. On average 4 avocados are the equivalent of 1 kg. Value estimates are based on production and not on the actual marketed fruits. Gross margins (value per unit) are computed farm-gate per tree/vine. One acre can take up to 132 trees of either mangos or avocados or 1,000 passion fruit vines. This conversion does however not change the productivity estimates made in Table 1.

Table 1.2: Outreach of Kenya BDS Avocado Programs in Year 4

Program	Farmers	Trees
EAGA	1,430	16,174
KHE	559	5,553
InduFarm	1,043	7,500
Kakuzi	571	6,011
Processing	1,575*	15,750
Grafting	1,660	16,605
Total	6,838	67,593

2. **Mangos.** Production estimates for mangos are based on an average of 100 fruits per tree during year two, 150 fruits per tree during year 3 and 185 fruits per tree during year 4. Through adoption of good agricultural practices as well as further maturity of the trees farmers have (most are young and every year they double production from the previous year), production has been going up even during the severe draught of 2005/early 2006. Through direct market linkages, farm-gate prices for mangos have gone up from an average of Ksh 3.50 in year 2 to average of Ksh 6 in year 3 and Kshs 7 in year 4. In estimation of results during year 3, an enumeration error was made in the number of mango trees. For year 2, the number of trees were reported as 86,400 while year 3 number of trees were reported to be 182,209. This was an error and the correct number of mango trees is now confirmed as 2,040 in year 2, 49,770 in year 3, and 82,400 trees in year 4. This revision has been made in computations in Table 1.
3. **Passion fruit:** During year 2 when Kenya BDS was just initiating the passion fruit program and no direct market linkages had been created, farmers were selling their fruit through brokers (middlemen) in one grade (un-graded) at an average price of Ksh 25 per kg. In year 3 direct market linkages were created with a leading exporter, EAGA for a minimum guaranteed price of Kshs 50 per kg of grade 1 fruit. Grade 2 fruits continued being sold in the local market through brokers at an average price of Ksh 25 per kg. In year 4, Kenya BDS has continued working with EAGA (buying farmers' produce at Kshs 50 per kg) and added another exporter (KHE) buying grade 1 fruits at a minimum guaranteed price of Kshs 65. The supply base for KHE is however still small (less than 10% of produce) and therefore we have used a conservative average price of Kshs 50 in our computations. Our information is that the proportion of grade 1 and 2s varies from time to time (e.g. during dry months, the proportion increases due to small-size fruits) but, on average it is estimated at 50:50. This is the assumption we have used in our computations as we do not currently track the volumes of grade 2 sold.
4. **Fish:** In year 3 Kenya BDS had two savings mobilization programs and one fishing gear program in the Lake Victoria Fish sub-sector. The savings mobilization programs are largely geared at increasing household incomes through encouraging fisher-folk to save and direct their daily earnings to areas of consumption or investment that have a direct bearing on their household wellbeing instead of spending on "good reception", alcohol and other consumptive areas that do not increase their household welfare. Kenya BDS has information that from the increased savings estimated at over Kshs 47 million and loans standing at Kshs 55 million by year 4, fisher-folk have invested in improved fishing gear that enables them to improve productivity. Kenya BDS has however not been tracking these areas of investment and therefore has not attempted to capture increased production and productivity related to the savings mobilization programs.

What we have used is the computations therefore relate to the fishing gear program started in year 2 and continued through to year 4; Omena (dagaa fish) market linkages program started in the late part of year 3; and a catfish fingerlings program geared at accessing the availability of life bait (catfish) among fisherfolk. For the fishing gear program, estimates are built around an assumption of the fishing nets (and other accessories) purchased by fisher-folk under the program for Nile Perch fishing. An assumption is also made on an average catch of one fish (weighing up to 4 kgs) per net sold at the beach level at an average price of Kshs 60. For the Omena market linkages, production figures are actual tonnage sold to the processing firm to date. The catfish fingerlings program is in its very early stages and only one batch of fingerlings (life bait) estimated at 4,800 have been sold. Production figures are built around an assumption of one fish (avg 4 kgs) caught from each bait.

Table 1.3 Outreach of fish programs

Program	Outreach			Fishing gear/drying racks			Volumes (M.Tonnes)		
	Year 2	Year 3	Year 4	Yr 2	Yr3	Yr4	Year 2	Year 3	Year 4
Fishing Gear	52	720	2,144	260	3,600	13,580	338	3,380	12,750
Omena market linkages	-	-	519	-	-	196	-	1.3	92.1
Catfish fingerlings	-	-	750	-	-	4,800	-	-	19
Total	52	720	3,413	260	3,600	18,576	338	3,381.3	12,860

The catfish fingerlings program is in 5 beaches each with an estimated 150 boats for Nile Perch.

2. Expanded development, Dissemination and Use of New Technology

Technology type	Technology	Number of MSEs (farmers/ fisher-folk using technology)	Number of trees/volume of produce
1. Mechanical/ physical	1. Mist blowers (motorized spray pumps) for avocado and mango farmers	3,500	28,663 trees
	2. Top-working and pruning equipment/ tools – power saws; pruning saws; etc	4,670	37,181 trees
	3. Omena rack drying technology for improved quality	519	92 tonnes grade 1 Omena
	4. Appropriate (legal) fishing gear	2,144	13,580
	5. Avocado oil processing (3 processors)	10,285	61,710 trees
	6. Catfish fingerling storage and distribution tanks	750	4,800 fingerlings
	7. Small-scale fish farm production of aquaculture fingerling for long-line fishing technology	30	-
2. Biological	8. Grafted passion fruit seedlings	2,046	250,111 vines
	9. Top-working of old/indigenous/ low-yielding mango and avocado trees to improved varieties	3,112	5,716
3. Chemical	10. Agrochemical spraying of avocado and mango trees in Maragua and Lamu Districts	3,475	54,313
	11. Use of EurepGap approved chemical by farmers in passion and mango farming in Eastern and Central Provinces	5,870	176,000 – mango 250,111 – passion vines
	12. Agrochemical loan product introduced to smallholder farmers via Equity Bank	3,500	-
4. Agronomic (management & cultural practices)	13. Savings products for fisher-folk	2,750	-
	14. Market day loans for fish traders	1,500	-
	15. Agrochemical loans for avocado farmers	3,500	-
	16. Micro-leasing arrangements for appropriate fishing gear	2,210	-
	17. Money transfer services for payment of farm produce for smallholder farmers – avocado/ mango/ passion	7,913	-
	18. Access to market price information for smallholder farmers via KACE SMS information technology	825	-

Notes: Kenya BDS promotes the use of integrated pest management, including use of cultural methods, proper orchard management (e.g. pruning, nutritional application, orchard cleanliness) and scouting before use of recommended pesticides. In this way, farmers adopting these methods can in a broad sense be regarded as adopting Natural Resource Management (NRM) techniques.

3. Increased Agricultural Trade: Export

Commodity	Number of farmers			Volume of exports (M.Tonnes)			Value of exports (Kshs)				
	Yr 2	Yr 3	Yr 4	Yr 2	Yr 3	Yr 4	Year 2	Year 3	Year 4	Increase (in %)	
										Yr 3	Yr 4
1. Avocados	405	2,116	3,603	205	1,532	1,982	2,055,750	15,323,625	22,199,940	645%	44.9%
2. Mangos	1,920	3,318	4,335	921	2,986	4,944	8,064,000	44,793,000	74,160,000	455.5%	93.2%
3. Passion Fruit	457	2,046	2,520	0	438	780	0	21,920,704	39,000,000	-	77.9%
Total	2,792	7,480	10,458	-	-	-	10,119,750	82,037,329	135,359,940	710.7%	65.0%

Notes:

- Avocados:** Exports captured under this Table are for fruit and not processed oil from the three processing plants. The export market linkages program began in year 2 with a pilot project with one exporter (EAGA). In year 3, export market linkages had been created with 2 additional exporters, besides increased coverage also by EAGA. In year 4, Kenya BDS was working with 4 exporters (see Table 1.2). Increased volume and value of export trade has therefore resulted from both an increase in outreach (coverage of more farmers/trees/hectare) as well as increased productivity arising from adoption of good agricultural practices promoted under the program. Prices remained fixed during year 2 and 3 and increased during year 4 per notes provided under 1 above.
- Mangos:** Increase in exports has arisen from increased outreach, higher production of trees (from further maturity of trees and better agronomy practices) and continued improvement in prices during year 3 and 4 from direct market linkages between farmers and exporters.
- Passion fruit:** During year 2, no passion fruit was going to the export market. This was largely because of low volume of production, lack of direct linkages with exporters and poor quality particularly from application of chemicals not acceptable in the export (European) market. Years 3 and 4 have seen increased outreach and production of fruit from expansion of orchards and adoption of good agricultural practices. Direct market linkages created with exporters providing a minimum guaranteed price of Ksh 50 per kg have led to increase in the value.

4. Enhanced Competitiveness of Smallholder Based Agriculture: Domestic agricultural trade

Commodity	Number of farmers			Volume of domestic trade (M.Tonnes)			Value of domestic trade (Kshs)				
	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4	Year 2	Year 3	Year 4	Increase (in %)	
										Yr 3	Yr 4
Avocados	405	4,925	6,838	1,165	6,575	5,622	1,164,924	26,302,050	22,488,000	2,157%	-14.5%
Mangos	1,920	3,318	4,335	384	581	1,373	3,456,000	5,229,000	14,416,500	51.3%	175.7%
Passion Fruit	457	2,046	2,520	129	438	780	3,243,006	10,960,352	19,537,500	238%	78.2%
Total	2,792	10,289	13,693	-	-	-	7,863,930	42,491,402	56,442,000	440.3%	32.8%

Notes:

- Avocados:** The increase in domestic trade in year 3 largely arose from establishment of 3 avocado oil processing plants that started operations in May/June 2005. The increase arose from increased number of farmers (and trees) and a significant increase in prices. During year 2, grade 2 fruits were either sold in the domestic market as fresh fruit in gunny bags of up to 600 pieces for Kshs 150 or would go to waste. Following the establishment of the 3 processing plants, prices offered farm-gate averaged Kshs 4 per kg (4 fruits on average). In year 4, reduced domestic trade resulted from reduced production following the prolonged drought of 2005/early 2006 that reduced production per tree to around 450 compared to 750 the previous year. Improvements in quality under the export programs also

resulted in reduced proportion of grade 2 fruits. All 3 processors export the avocado oil to South Africa where it is further refined and re-exported to the international cosmetic industry.

2. **Mangos:** The fairly small increase in domestic trade during year 3 was generally due to increased proportion of fruits going for the higher value export market than domestic market due to improvements in quality and the direct market linkages established during the year. During year 4, drought conditions of year 2005/06 resulted in increased proportion of small-size fruits (grade 2) which are consumed in the domestic market. This combined with the continued expansion of the program to increased the volume of domestic trade reported.
3. **Passion Fruit:** In year 2, all passion fruit produced was marketed domestically through brokers at an average price of Kshs 25 per kg (un-graded). Following establishment of direct market linkages with an exporter during year 3, all grade 1 fruit estimated at 50% of production started going to the export market with the balance (50%) marketed domestically at the same price prevailing the previous year of Ksh 25 per kg. This scenario continued in year 4 and the increase in volume in trade generally reflects the continued expansion of the program in terms of farmers as well as orchard size.

Annex C

Return on Investment Analysis

Annex C: Kenya BDS Return on Investment Analysis

Return on investment estimates

Commodity	USAID Investments (direct program costs) (in Kshs)				Annual Returns Annual Sales Value (in Kshs)				Return on investment (Increased sales per Kshs spent)			
	Yr 1&2	Year 3	Year 4	Total	Year 2	Year 3	Year 4	Total	Year 2	Year 3	Year 4	total
Avocados	2,890,600	14,181,931	24,188,909	41,261,440	3,220,674	40,093,311	44,688,240	88,002,225	1.11	2.83	1.85	2.13
Mangos	8,951,093	12,576,216	9,895,259	31,422,568	8,064,000	44,793,000	86,520,000	139,377,000	0.90	3.56	8.74	4.44
Passion fruit	8,707,786	5,131,620	5,533,600	19,373,006	2,270,104	32,881,056	58,537,500	93,688,660	0.26	6.41	10.58	4.84
Fish	2,912,665	12,525,752	12,322,845	27,761,262	20,000,000	202,800,000	770,284,500	993,084,500	6.87	16.19	62.51	35.77
Total	23,462,144	44,415,519	51,940,613	119,818,276	33,554,778	320,567,367	960,030,240	1,314,152,385	1.43	7.22	18.48	10.97

Notes:

1. Column on investment is derived from summation of the total disbursements made by Kenya BDS under various contracts for specific commodity areas each year. Table 5.1 provides details for all programs implemented by Kenya under the various commodities. Kenya BDS started direct program implementation during the last quarter of year 1. It would therefore be unrealistic to expect meaningful impact on program beneficiary incomes during such a short time. For this reason, Kenya BDS has not attempted to measure “Return” (impact during the first year). For purposes of computation of Return on Investment for year 2, we have therefore lumped up together program costs for years 1 & 2 and compared these to sales for year 2.

2. Column on “Annual Returns” is extracted from Table 1 (Enhanced productivity of smallholder-based agriculture) already provided by Kenya BDS, per notes indicated thereon. Gross sales here are used as the proxy for “return”.

Kenya BDS expenditure on different programs, Year 1 – 4 (in Kshs)

1. Column showing Project	Year 1	Year 2	Year 3	Year 4	Total
Avocados:					
EAGA					
1. Phase 1	316,008	711,800			1,027,808
2. Phase 2		1,862,792			1,862,792
3. Phase 3			3,331,737	2,680,503 -29,980	5,982,260
4. Phase 4				1,257,500	1,257,500
KHE					
1. Phase 1					
2. Phase 2			1,794,013		1,794,013
3. Phase 3				2,258,100 774,000	2,258,100 774,000
Indufarm					
1. Phase 1			2,241,445	1,465,575	3,707,020
2. Phase 2				1,645,737	1,645,737
Processing					
1. Phase 1			4,658,603	2,157,534	6,816,137
2. Phase 2				2,266,820	2,266,820
Kakuzi					
1. Phase 1				1,149,966	1,149,966
Grafting/Pruning : Avocados					
1. Phase 1			2,156,133	737,492	2,893,632
2. Phase 2				1,299,429	1,299,429
Spraying					
1. Phase 1				4,878,400	4,878,400
2. Phase 2				1,647,833	1,647,833
Sub-total: avocados	316,008	2,574,592	14,181,931	24,188,909	41,261,440
Passion					
1. Phase 1 (just juice) KARI Teresa Maru	2,811,506	1,256,856 752,600 2,295,904			4,068,363 752,600 2,295,904
2. Phase 2: Finline KARI Motor bikes		1,590,920	4,296,720 834,900	1,260,285	5,887,640 834,900 1,260,285
3. Phase 3				4,236,880	4,236,880
Sub-total: Passion	2,811,506	5,896,280	5,131,620	5,533,600	19,373,006
Mangos					
SITE					
1. Phase 1	1,039,061	2,459,241	-238,695		3,259,607
2. Phase 2		1,158,727	2,942,899		4,101,626
3. Phase 3 (Finline)			2,743,275	3,016,205	5,759,480
4. Phase IV (Finline)				806,250	806,250
Finline/Mpeketoni					
1. Phase 1			3,966,035	3,135,275	7,101,310
2. Phase 2				900,608	900,608
KGT/Malindi	989,587	1,007,766	532,177		2,529,530
CDA (Tana River/Lamu)	786,023	1,510,688	474,392		2,771,103
Grafting/pruning: mangos					
1. Phase 1			2,156,133	737,492	2,893,632
2. Phase 2				1,299,429	1,299,429

Sub- total: mango & other related	2,814,671	6,136,422	12,576,216	9,895,259	31,422,568
FISH					
Africa Now (fishing gear)			2,862,400		2,862,400
Africa Now (savings)			3,808,200		3,808,200
RMC Savings					
1. Phase 1		2,912,665	672,877		3,585,542
2. Phase 2			3,759,975	1,618,154	5,378,129
RMC Fishing gear				4,939,983	4,939,983
RMC Catfish fingerlings				1,128,301	1,128,301
Omena					
1. Phase 1			1,422,300	3,832,107	5,254,407
2. Phase 2				804,300	804,300
Sub-total fish		2,912,665	12,525,752	12,322,845	27,761,262
Total	7,289,210	25,413,380	44,548,323	51,904,179	129,612,212