

AGENCY FOR INTERNATIONAL DEVELOPMENT  
PPC/CDIE/DI REPORT PROCESSING FORM

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number

2. Contract/Grant Number

3. Publication Date

4. Document Title/Translated Title

5. Author (s)

6. Contributing Organisation (s)

7. Pagination

8. Report Number

9. Sponsoring A.I.D. Office

10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)

12. Supplementary Notes

13. Submitting Official

14. Telephone Number

15. Today's Date

..... DO NOT write below this line.....

16. DOCID

17. Document Disposition

## FOREWORD

This is a comprehensive final report of the Agribusiness Development Support Project (ADSP) that covers the entire period of the Project from March 5<sup>th</sup> 1999 to January 31st 2004. It is divided into four main sections.

The first Section provides an overview of the overall project: executive summary, problem statement that led to the design of the Project, the implementation strategy and the organizational structure.

The second section provides a synthesis of activities, impact and lessons learned during the first four years. Details of activities during each of those first four years have been provided through four annual reports.

The third section constitutes the annual report for the last project year, from April 2003 to January 2004 included.

The fourth section summarizes the main conclusions and recommendations.

Annexes include executive summaries of the internal impact study done at the end of 2003 and of the external evaluation of the project conducted in January 2004.

## ACKNOWLEDGMENT

I wish to thank the United States Agency for International Development (USAID) for the continued financial support to Agribusiness Development Support Project (ADSP) during the five years, March 5 1999 to January 31 2004. I also wish to acknowledge with thanks the visit to Winrock offices on 12<sup>th</sup> September 2001 of USAID/Kenya officials that included Dr. Kiert Toh Mission Director-Kenya; Dr. Mike Serhan, Deputy Mission Director; Dr. Meg Brown, Chief, Agriculture, Business and Environment Office (ABEO); and Dr. Maria Mullei, Program Officer ADSP. I also thank the USAID/Kenya officials that included Dr. Kiert Toh Mission Director-Kenya; Dr. Meg Brown, Chief, Agriculture, Business and Environment Office (ABEO); and Dr. Maria Mullei, Program Officer ADSP for their visit to our field activities in May 2003. In addition, I thank the staff of USAID Mission to Kenya for their regular consultative and advisory assistance and for their willingness and availability in meeting with visitors of Winrock International-ADSP.

I wish to thank the target beneficiaries that include farmers, community-based organizations, institutions and stockists that willingly participated in the project activities. I thank them for contributing matching funds in form of land, labor and finance for the success of the project. We are grateful to the many beneficiaries that have adopted the various technical, business, gender and environmental practices which were promoted by the Project.

I would like to thank and commend the staff of Winrock International-ADSP and our partners Lagrotech Consultants and TechnoServe Inc. that dutifully undertook the various activities and provided the information in this Report. I particularly wish to thank the ADSP District Field Agents and Business Advisors that were dedicated to the Project. I thank SCODP, Tegemeo Institute, CRS, CARE-Kenya, GAA, ADRA and church organizations for the close collaboration.

I also wish to thank our collaborators, KARI, KEPHIS, Ministry of Agriculture, NGOs and CBO's that have facilitated the implementation of ADSP. I sincerely thank Dr. Joseph Wanjama, Director of Agriculture, who visited our project in Meru South. I thank our fertilizer and gender specialists E. Muriuki and C. Kabutha respectively, for their dedication. I acknowledge the financial and technical support of Monsanto to our conservation tillage (CT) demonstrations.

I wish to thank the staff of Winrock International HQs in USA that visited ADSP during the years. First, I thank the President and CEO of Winrock International worldwide Dr. Frank Tugwell who visited and reviewed ADSP activities. During the visit, Dr. Tugwell held discussions with USAID, the Minister for Agriculture in Kenya, Dr. Bonaya Odana, Ford Foundation and IDRC. Second, I thank Dr. Richard Brown, the Senior Vice President Programs, Winrock International for his visit and advice. Third, I thank Drs. John Flynn Managing Director, Agriculture; Dan Gudahl, Human Resources Officer; Chris Kopp, Program Director Natural Resource Management; and Katharine Warner Managing Director, Natural Resources Management for their consultation and advice during their visits. I wish to acknowledge the tremendous advisory support and consultation that we have received from Dr. Pierre Antoine of Winrock International in USA/West Africa. I thank Pierre for his frequent technical advice.

Lastly, our gratitude goes to Winrock International- African Women Leaders in Agriculture and Environment (AWLAE) in Nairobi for their close working relations and sharing facilities.

I sincerely thank all of you.

Caleb Wangia (Ph.D.)  
Team Leader

## ACRONYMS

ABEO	-	Agriculture, Business and Environment Office
ADSP	-	Agribusiness Development Support Project
ADSF	-	Agribusiness Development Support Forum
CBO's	-	Community-Based Organizations
CT	-	Conservation Tillage
DAP	-	Diammonium Phosphate
DLC 1	-	Dry Land Composite 1
GoK	-	Government of Kenya
IPM	-	Integrated Pest management
KARI	-	Kenya Agricultural Research Institute
Katx 56	-	Katumani x 56 Bean
KB1	-	Katumani Bean 1
KB9	-	Katumani Bean 9
KCB	-	Katumani Composite B
KEPHIS	-	Kenya Plant Health Inspectorate Services
K-REP	-	K -Rep Bank Ltd
LBDA	-	Lake Basin Development Authority
MALDM	-	Ministry of Agriculture, Livestock Development and marketing
MoARD	-	Ministry of Agriculture and Rural Development
NYACODA	-	Nyakach Community Development Association
NGO	-	Non-Governmental Organization
OPVs	-	Open Pollinated Varieties
PRA	-	Participatory Rural Appraisal
SCODP	-	Sustainable Community Oriented Development Project
UCCS	-	Ukambani Christian Community Service
USAID	-	United States Agency for International Development

## Contents

<b>Table of Contents</b> .....	i
<b>Foreword</b> .....	ii
<b>Acknowledgments</b> .....	iii
<b>Acronyms</b> .....	iv
<b>Section I: Overview of the Overall Five-Year project</b>	
1.1 Summary and Achievements .....	1
1.2 Conceptualization and Design of the Project.....	4
1.3 Strategy and Objective of the Project.....	5
1.3.1 Strategy of the Project .....	5
1.3.2 Objective and Activities of the Project .....	6
1.4 Staffing and Organization of the project .....	6
<b>Section II: Synthesis of Activities, Impact and Lessons Learned, March 1999 – March 2003</b>	
2.0 Activities: Introduction .....	8
2.1 Seed Multiplication and Income Earned from Seed Sales by Small-Scale Farmers.....	9
2.2 Field Crop Demonstrations.....	11
2.3 Establishment of Seed Enterprises .....	13
2.4 Marketing of Seed and Fertilizers .....	15
2.5 Training of Stockists, Farmers and Extension Workers in Business Skills .....	17
2.6 Gender Training of Trainers (TOTs) and Rural Communities .....	18
2.7 Promotion of Horticultural Crops .....	19
2.8 Visits to the Project Areas .....	20
2.9 Mid-Term Evaluation.....	23
<b>Section III: Fifth Year Annual Report, April 2003 – January 2004</b>	
3.1 Acknowledgements.....	24
3.2 Introduction .....	24
3.3 Project Activities.....	25

3.31 Impact Study of ADSP .....	25
3.3.2 Group Training on Governance.....	27
3.3.3 Gender Mainstreaming in Groups .....	28
3.3.4 Documentation of Project Activities .....	31
3.3.5 Fertilizer Business Evaluation.....	32
3.3.6 Collaboration with International Organizations .....	33
Winrock International/ICIPE Collaboration	
Winrock International/ICRISAT Collaboration	
3.3.7 ADSP Support in Horticultural Development.....	37
Support in Horticulture – Area East .....	37
Support in Traditional Vegetables - Area West.....	39
3.4 Visitors.....	39
3.5 ADSP End-of-Project Workshops .....	40
3.5.1 ADSP Kisumu Workshop .....	40
3.5.2 National End-of-Project Stakeholders’ Workshop .....	41

#### **Section IV: Conclusions, Impact, Lessons Learned, Challenges and Future Plans**

4.1 Achievements and Impact.....	43
4.2 Lessons Learned .....	44
4.3 Remaining Challenges .....	45
4.4 Future Plans.....	45

### **LIST OF TABLES**

Table 1: Summary of Activities and Achievements of ADSP, 200/2003.....	8
Table 2: Seed Multiplied, Packaged and Marketed by Various Seed Enterprises March 2002/2003.....	10
Table 3: Types of Demonstrations and Number of Farmers Participating in Demonstrations, by Sub-Grantee, 2002/03 .....	12
Table 4: Names of Seed Enterprises Supported by ADSP, 2003 .....	13
Table 5: Financial Status of the Seed Enterprises Supported by ADSP, 2003 .....	14
Table 5a: Structure of Price for Maize Seed 2001/02 and 2002/03 .....	16
Table 5b: Structure of Price for Bean Seed 2001/02 and 2002/03 .....	16
Table 6: Number of Farmers that Attended TOT and Community-Based Gender Training by Project Area, 2002/03.....	19
Table 7: Number of Farmers Trained in Horticultural Crops Production and Management, 2002/03 .....	20
Table 8: Attendance at the Governance Training of Groups in Area West .....	28
Table 9: Attendance during Gender Training by Gender Specialist .....	30
Table 10: Final Production weights of Groundnuts in Area West .....	34
Table 11: Attendance at Groundnut Farmers’ Training Nov. 10-18 .....	35
Table 12: Pigeon Pea Farmer in Machakos/Makueni.....	36
Table 13: Pigeon Pea Farmers in Kitui/Mwingi .....	36
Table 14: Farmers growing Horticulture in Area East.....	37

Table 15:	Horticultural Seedlings distributed in Area East .....	37
Table 16:	Farmers trained in vegetables production .....	38
Table 17:	Participants in the Traditional Vegetables Training .....	39

### **List of Annexes**

Annex I:	Internal Project Assessment Study of the ADSP project. Executive Summary...	47
Annex II:	End of the Term Evaluation of the Agricultural Development Support (ADSP) project: Executive Summary and Findings and Recommendations .....	52
Annex III:	Seed Marketing Model: Strategy and Approach .....	62
Annex IV:	Sales Volume of Certified and Packaged Seed by Stockists .....	68

## **Section I. OVERVIEW OF THE OVERALL FIVE-YEAR PROJECT**

### **1. 1 Summary and Achievements**

This final report of the Winrock International Agribusiness Development Support Project (ADSP) covers the period between March 5 1999 and March 4 2003. ADSP is funded by USAID and started operating in March 1999. The strategy of the project was to increase participation of private and non-governmental organizations (NGOs) in the agricultural markets so as to improve efficiency in the supply of yield enhancing inputs to small-scale farmers in medium and low potential areas in Kenya.

The Project activities focus on multiplication of improved quality seed and delivery of the same and fertilizers, to small-scale farmers through stockists, Community-Based-Organizations (CBOs) and farmer groups. The main objectives of the project included increasing household income and alleviation of poverty. In order to achieve the above objectives, farmers, CBOs and stockists were trained in agricultural and business skills that empowered them to utilize the technologies for the enhancement of their incomes and welfare.

A consortium of Winrock International, Lagrotech Consultants and TechnoServe Inc, implement ADSP (see Chart 1). Winrock International-ADSP is the lead partner responsible for the overall direction and coordination of the project. Lagrotech Consultants and TechnoServe are responsible for the provision of agricultural component and business development services, respectively.

ADSP model of close collaboration with a number of public and private organizations, such as Kenya Agricultural Research Institute (KARI), Kenya Plant Health Inspectorate Service (KEPHIS), Ministry of Agriculture and Rural Development (MoARD) and other NGOs in the implementation of the project is unique and successful (see Chart 1). KARI was the main source of the technologies that were transferred to farmers, especially the provision of quality foundation seed that the project multiplied and marketed to farmers. KEPHIS inspected and certified seed and agro-inputs for quality. MoARD and some NGOs collaborated in mobilization of farmers, delivery of extension services and seed multiplication. Private sector (mainly stockists and credit providers) supplied agro-inputs and credit to farmers. The increased participation of public, private and non-governmental sectors in agricultural markets improved efficiency in the supply of yield enhancing inputs in rural areas. ADSP was instrumental in improving the supply of agro-inputs to rural farmers, increasing technical and business skills of farmers and stockists and increasing household incomes, as illustrated through the various annual reports.

The quantity of improved and certified seed produced during the first two years far exceeded the planned targets by the end of the project. Approximately 250 Mt of improved and certified seed of 2 varieties of maize, 3 of beans, 2 of sorghum, 1 of millet, 1 of cowpeas, 1 of green grams and 2 of cassava was produced by 439. The farmers earned an estimated Ksh 7,164,520 (US\$95,527) from the sale of seed. The earning accounted for about 40% of the total household income of seed farmers. Seed farmers used the earned income to purchase food, improve housing, purchase livestock and pay school fees for their children.

The improved and certified seed produced by farmers was subsequently processed in 2Kg packs and marketed to farmers through 51 rural agro-input stockists (details in section II). The stockists supplied seed and fertilizers and provided over-the-counter advisory services to farmers in rural areas. This distribution strategy increased farmers' use of improved seed and fertilizer by about 40%. The use of certified seed by farmers translated into increased grain production, improved food security and increased farmers' incomes from the sale of grain.

Overall the number of farmers and stockists trained during the four years far exceeded the planned target for the project life. Approximately 377 stockists and extension workers were trained in technical and business skills in the four years, as compared to 200 planned for the project life. During the four years, training on fertilizer blending for farmers, extension officers and stockists was undertaken. As a result, use of fertilizers by small-scale farmers increased by 20% while stockists reported 20-25% increased revenue from the sale of fertilizers. Two stockists started repackaging and marketing 2Kg packs of fertilizers to small-scale farmers and formulate appropriate fertilizer blends. Overall, retail sales of fertilizer increased rapidly.

Since the inception of ADSP, sixty-five farmer groups participated in the project activities. A total of 566 demonstrations on crop varieties, soil fertility and crop production practices were established since the inception of the project, compared to 192 demonstrations that were planned by the end of the project. Table 3 shows typical demonstrations of improved technologies during the fourth year. The demonstrations included improved varieties of different crops- maize, beans, sorghum, millet, cowpeas, mangoes and cassava, agronomic practices, integrated pest management (IPM) and conservation tillage (CT). A total of 11,810 farmers managed and participated in the demonstrations farmers. The fields were used for experiential learning and training around the demonstrations. Another 34,561 farmers were exposed to results of the demonstrations during field days.

Results show that farmers have had good progress in the adoption of improved agricultural technologies (better seed varieties, fertilizer and safe pesticide use, spacing, intercropping). Approximately 30-40% of ADSP participating farmers adopted improved seed varieties. About 75% of the farmers adopted proper spacing and intercropping of maize and beans. About 40% of participating farmers adopted the use of organic and inorganic fertilizers. More extension and promotional efforts are being made to increase adoption rate of the various improved technologies.

The training of collaborators, farmers and stockists on gender mainstreaming was conducted in throughout the project period. In addition, gender advocacy and sensitization was done during ADSP activities. Currently gender awareness has improved from last year at 40% to 80% in the third year. The corresponding adoption of gender balance has improved from a mere 15% in second year to 40% in the third year. Gender training and advocacy continue in the fourth year.

A number of lessons were learned during the four years. First, small-scale farmers were able to produce and use improved certified (inspected by KEPHIS) seed after formal training. Secondly, small-scale seed and grain farmers can increase their incomes if they purchase and use improved technologies rather than farm for subsistence. Thirdly, stockists were motivated to disseminate information on improved technologies and supplied the technologies to rural farmers as long as it was profitable.

A number of challenges were encountered. First, the "large grain borer" that is prevalent in area East seems to be resistant to chemicals and is causing substantial damage to maize seed and grain. Second, the market for improved seed in the project area is limited by low purchasing power, limited markets for farm produce and poor rains. Third, reliable and profitable markets for surplus produce arising from the use of improved agro-inputs need to be identified for the sale of surplus farm produce. The constraint being addressed in the coming *USAID Kenya Maize Development Programme* that started in 2003.

During the 4th year, eleven (11) CBOs/stockists that were identified were supported with sub-grantee funds to become sustainable seed enterprises. The role of the seed enterprises was to contract seed growers, purchase the seeds from growers, process and market the seed within and without the respective communities. These seed enterprises will sustain the activities of ADSP in future. There is need for two of the sub-grantees (KK Mkulima and NYACODA) to be registered seed companies while the other seed enterprises are linked to existing seed companies that have the capability to market seed in a competitive

market environment. In addition, the seed enterprises are registering the *Agribusiness Development Support Forum (ADSF)* that will advocate for the small-scale seed farmers in Kenya. ADSF will fill the gap left by the completion of ADSP on January 31 2004.

The conclusion of the internal project impact assessment study, done at the end of 2003 by, makes a positive summary statement on the project: *"it must be pointed out that on overall, the project has performed well and achieved most of its objectives. In terms of output the project has managed to increase smallholder seed multiplication through contracts with sub-grantee stockists and CBOs, who in turn have successfully produced, processed, packaged and marketed the seed through other stockists. However the sustainability of the ADSP activities in the project areas will depend on the stockists and CBO seed multipliers, particularly the ADSP sub-grantees obtaining the KEPHIS Seed Merchant License. Operating under the KARI Seed Unit license is not sustainable but ought to be regarded only as a stopgap measure. In our assessment there are about three to five CBOs and stockists sub-grantees that could be licensed by KEPHIS with minimum risk to compromising the seed certification standards. However, again for sustainability of the project activities those CBOs, farmers' groups and other grantees who do not meet the KEPHIS licensing requirements need to be advised to continue operating under the KARI Seed Unit license; or alternatively could be linked to established licensed seed companies under whose license they could operate and also sell their seeds. In Area West, Lagrotech Seed Unit subsidiary could be one of such seed companies to link with."* The Executive Summary of the Internal Impact Assessment Study is presented in **Annex 1**.

In January 2004, an external end-of-term evaluation of the project was also conducted by an external team of consultants. That evaluation not only focused on the ADSP/Winrock consortium activities, but also on the KARI and KEPHIS contributions to USAID's program. Regarding the sustainability of the ADSP model implemented by the Winrock consortium, that evaluation states:

*"The ADSP emphasis on the commercialization of improved technologies, especially those that are essentially public goods, represents an innovative approach that improves upon more conventional technology transfer methods in terms of potential impacts and sustainability.*

*ADSP represents a somewhat unique partnership among rather diverse set of organization partners that was sustained by a strong convergence of interests. Replication of such a partnership seems difficult, but by no means impossible.*

*The successful participation of CBO's in the production of certified planting materials is likely to remain limited and require extensive facilitation by projects such as ADSP or links with established commercial concerns. Spontaneous replication even in nearby communities is unlikely. The timeframe and level of effort required might be substantially reduced through the careful selection of CBO's with established track records. Attention needs to be given from the onset to connecting selected CBO's to stockists and established seed enterprises with a view to the initiation of formal contractual arrangements among these parties well prior to the conclusion of a project.*

*The assistance to stockists is most likely to result in sustainable progress and spread to non project areas. In retrospect, the focus of the project might have been shifted more this group and somewhat away from CBO production of inputs."*

The Executive Summary, main findings and recommendations of the End-of-Term Evaluation are presented under **Annex II**.

## **1.2 Conceptualization and Design of the Project**

The 1995 Agricultural Sector Review of the Kenya Ministry of Agriculture, Livestock Development and Marketing (MALDM), and the March 1998 Agricultural Sector Investment Program (ASIP) of the MALDM identified a number of major constraints to agricultural sector growth. The constraints included:

- Inadequate and poor infrastructure
- Lack of farm credit especially for smallholders and especially women farmers
- Inefficient input distribution system especially for seed, fertilizers and agrochemicals
- Poor extension service
- Lack of adequate transport
- Unavailability of good seed and planting materials especially for small-holders
- Lack of marketing outlets and poor prices for farmers produce
- High dependency on rain-fed agriculture, which is erratic and risky.

As a consequence, the performance of the agricultural sector declined from a high of 4.6 in the eighties to a low 1.5% in 1990s.

The USAID/Kenya Strategic Plan for 1996 to 2000 listed the most important constraints to Kenya's agricultural sector as:

- Inadequate planting materials and breeding stocks
- Inadequate access to yield-enhancing commercial inputs.
- Inadequate credit to finance commercial farm inputs;
- Inadequate rural infrastructure
- Incomplete implementation of market reforms.

From the perspective of USAID and GOK the Agricultural Development Support Project (ADSP) in its wider context was bilaterally negotiated as a core project to address some of the constraints identified as affecting the performance of smallholders in the agricultural sector. More specifically USAID drew up a strategic plan emphasizing strengthening the competitiveness of agricultural marketing and increasing private sector participation. In this context the ADSP was structured to have two major components consisting of:

- **The Policy component** implemented by the Tegemeo Institute of Agriculture of Egerton University.
- **The Technology Component**, which was made up of two sub-components:

- **The Technological Development and Transfer Sub-component**- Sponsored under the KARI Business Development and Socio-economics Units. This unit has the mandate to transfer Kari's technologies to the farming community with particular emphasis on smallholder agriculture. The objective of this particular sub-component include: developing commercially-oriented technological packages with smallholders; establishing commercially viable seed production and identifying appropriate technology promotion and uptake pathways for reaching the farmers.

- **The Private Sector Technology Transfer (PSTT) Sub-component** - This is the ADSP Technical Application RFA No. Kenya 623-98-A-026 that was implemented by the Winrock International Consortium composed of Winrock International, Technoserve Inc. and Lagrotech Consultants. The consortium collaborated with KARI, KEPHIS and the MALDM. The objectives of this sub-component were:

- To increase participation of smallholder farmers in seed production;
- To increase availability of agricultural market information to smallholder; and
- To promote and increase demand and usage of yield enhancing inputs for targeted crops.

The expected results of ADSP included a 20% increase in the use of improved seeds by small farmers, a 30% increase in fertilizer use by smallholder farmers, and a 40% increase in commercial seed maize produced by the private sector. The expected activities included establishment of private seed multiplication farmers, seed multiplication of major crops, conduct technical and business training, conduct field demonstrations, production of educational materials and mainstream gender among project beneficiaries.

### **1.3 Strategy and Objective of the Project**

Agribusiness Development Support Project (ADSP) was implemented from March 5<sup>th</sup> 1999 to January 31<sup>st</sup> 2004. It was funded by USAID to the tune of US\$3 million. A consortium of Winrock International, the lead organization, Lagrotech Consultants and TechnoServe Inc implemented the Project. The organizational structure of ADSP and names of the staff that implemented the project in 2002/2003 are shown in Chart 1. Winrock International was the contractor that was responsible for the overall management and coordination of the project. Lagrotech was responsible for the delivery of the agricultural production and productivity components of the Project, while Technoserve provided business development services and linkages. The Consortium collaborated with other organizations, such as Kenya Agricultural Research Institute (KARI), Kenya Plant Health Inspectorate Service (KEPHIS), Ministry of Agriculture and Rural Development (MoARD) and other NGOs in the implementation of ADSP. KARI and International Crops Research In Semi Arid Tropics (ICRISAT) are the main source of the technologies (breeder seed, fertilizer use) that the project transferred to farmers for commercialization. The beneficiaries of the Project were groups of small-scale farmers, community based organizations and agri-inputs supply stockists.

#### **1.3.1 Strategy of the Project**

The strategy of the project was to utilize private-public-NGOs sector model to transfer and commercial technology from research institutions to small-scale farmers in medium and low potential areas in Eastern and Western Kenya.

Agribusiness Development Support Project was implemented in twelve (12) low and medium potential, semi-arid districts in West and East Kenya. The districts covered in West Kenya were Kisumu, Nyando, Siaya, Bondo, Homa Bay and Suba; while in East Kenya were Machakos, Makueni, Kitui, Mwingi, Tharaka and Nithi. These districts have low rainfall, income and food security. Although agriculture accounts for 80% of the economic activities in the areas, the performance of the sector is poor resulting in increased poverty levels in rural areas. The use of yield-enhancing agri-inputs such as seed, fertilizers and extension services is low and not readily available. Consequently, the Kenya Government, USAID-Kenya and Winrock International were committed to support private sector (mainly stockists) to participate in the delivery of agri-inputs to smallholders in target districts.

During the five years of the Project, ADSP introduced seed multiplication of a variety of improved crops such as maize (30%), beans (35%), sorghum 10% cassava (5%) groundnuts (5%), pigeon peas (5%), horticultural crops (5%) and others legume crops (5%). Improved crop varieties were developed by KARI except for groundnuts and pigeon peas that were developed and supplied by ICRISAT. KEPHIS inspected and certified seed and agri-inputs for quality. MoARD and some NGOs facilitated the mobilization of farmers, delivery of agri-inputs/extension services and marketing the seed.

#### **1.3.2 Objective and Activities of the Project**

The **main objective** of the project was to commercialize agriculture and consequently increase household income and alleviate poverty among the small-scale farmers in semi arid areas of Kenya. In order to

achieve the objective, farmers, CBOs and stockists were trained in agricultural and business skills that empowered them to participate in seed production; increased availability of technical and market information; and increased demand and use of yield-enhancing inputs for target crops. The Project was to ensure that:

- The formal and informal input distributors act as effective extension agents dispensing not only inputs, but also the necessary concomitant messages of appropriate technical and agronomic practices to the farmers.
- Local seed farmers, Community Based Organizations (CBOs), and Farmers' Associations and NGOs increase their ability to produce certified high quality commercial seed.
- The extension materials on the use of agricultural inputs are adequately made readily available to the target farming community around the country.
- There is overall adoption and continued use of improved seed and fertilizer as yield enhancing technologies, which would ensure increased agricultural production and income.

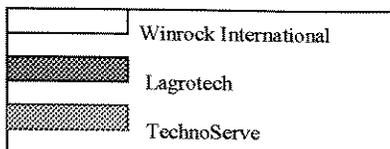
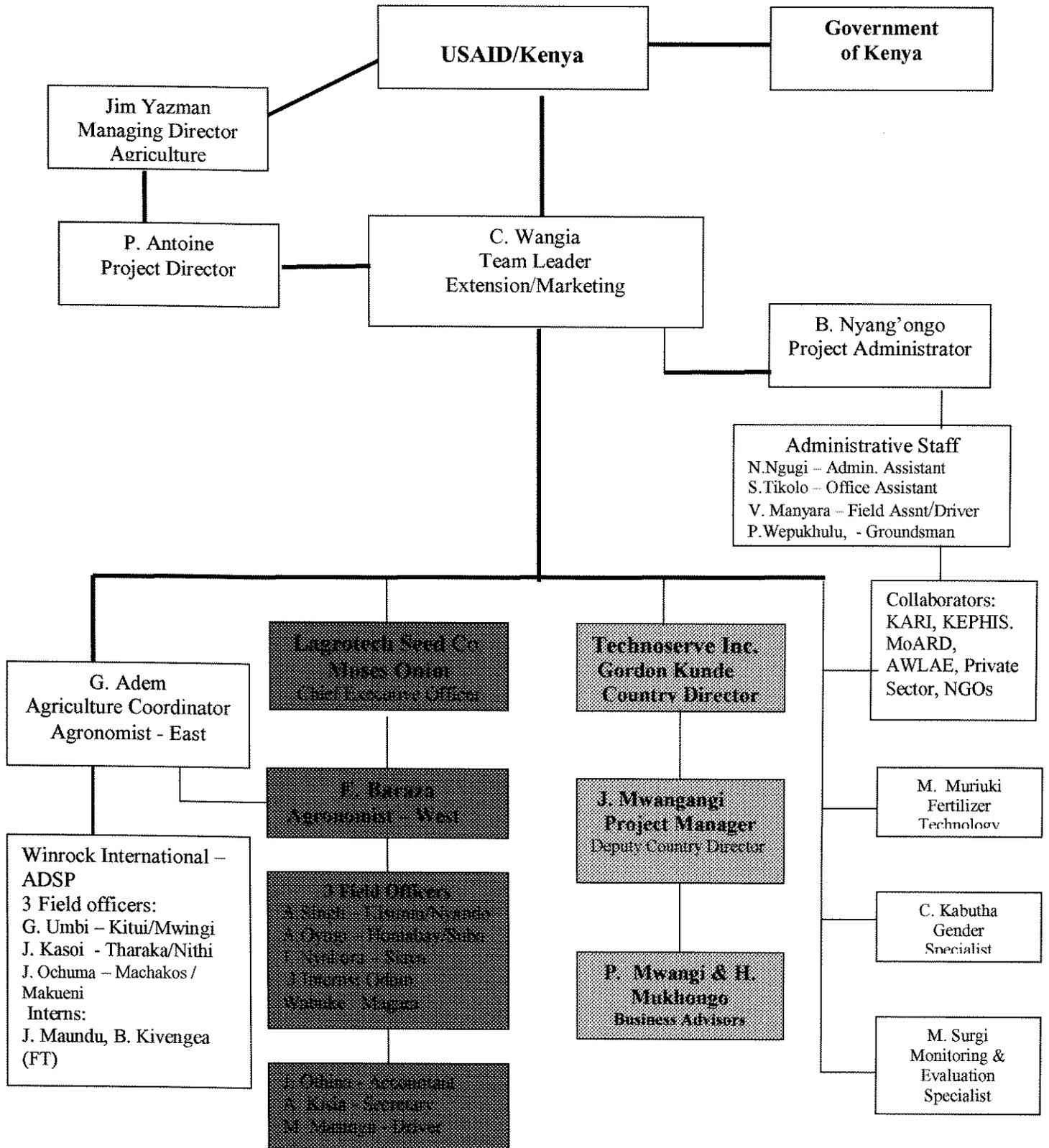
ADSP facilitated and supported activities related to improving the delivery of yield-enhancing agri-inputs through the private sector, MoARD, KARI, KEPHIS and other NGOs. A detailed description of the activities is presented in section II. These activities included:

- PRAs surveys to identify the demand for fruit tree planting by farmer groups.
- Seed multiplication.
- Establishment of fruit tree orchards by farmers.
- On-farm demonstrations and field days
- Training of staff and stockists in agribusiness, especially seed/fertilizer marketing skills.
- Seed transportation, cleaning, sorting, packaging and marketing.
- Conduct gender analysis training for staff of ADSP and collaborators
- Conduct gender analysis training of farmers groups in rural communities.
- Conduct radio publicity of various seed varieties
- Establishment of seed enterprises for the multiplication and marketing of seed.

#### **1.4 Staffing and Organization of the project**

The staffing and organizational structure of the project, implemented by a consortium composed of Winrock International, TechnoServe and Lagrotech Consultants, and the linkages with partner institutions are presented in Chart 1 below.

**Chart 1: Organizational Structure of ADSP and its Consortium**



## Section II. Synthesis of Activities, Impact and Lessons learned March 1999 - March 2003

### 2.0 Activities: Introduction

As outlined in section I, the key activities undertaken during the Project period included seed multiplication, processing and marketing; establishment of fruit tree orchards; field demonstrations and field days; training and supporting stockists in the delivery of agri-inputs and gender mainstreaming. In the initial years, the focus was on conducting baseline surveys and Participatory Rapid Appraisal (PRA) to determine the needs of the communities. Also during the early years of the Project the emphasis was on seed multiplication, training and field demonstrations as a way of promoting improved varieties. As from second year the emphasis increased to cover business training, linkages, development of educational material, processing and marketing seed and agri-inputs. Table 1 shows the various activities undertaken and the results achieved during the first four years.

**Table 1: Summary of Activities and Achievements of ADSP, 2000/2003**

	Planned At EOP	Actual 2002/03	Actual 2001/02	Actual 2000/01	Actual 1999/2000
No. of farmers in PRA	None	234 (57%F)	535 (59%F*)	338 (69%F)	932 (61%F)
No of field crop demonstrations	48	77	109	358	22
No. of farmers in demos	1200	7,344(53%F)	2,500(53%F)	1187 (54%F)	779
No of farmers exposed to demos	None	25,538 (52%F)	7,057(54%F)	4720 (50%F)	519 (46%F)
Seed growers trained in business	None	12 (36%F)	15 (20%F)	94(6%F)	None
No. of collaborators trained in prod	66	52 (34%F)	133(30%F)	88(22%F)	None
No. of stockists trained in prod	60	150(38%F)	166(43%F)	137(27%F)	None
No. of stockists trained in business	80	66 (44%F)	51(22%F)	97(28F)	46
No. collaborators trained in business	0	none	27(22%F)	40(65%F)	20
No. of ADSP staff trained	0	4	1	28	20
No. of seed multiplication growers	50	439	420 (27% F)	69 (24%F)	15
Acres under seed multiplication		145	722	127	NA
Quantities of seed produced (Mt)		87	83.2	26.3	NA
▪ Baseline Update	None	3	1	-	1
▪ No. of persons trained in gender	None	295	220	22	20
▪ % Women	None	46%	45%F	30%F	44%
▪ Gender awareness	None	90%	80-90%	50-60%	15%
▪ Gender balance adoption	None	50%	30-40%	15-20%	10%
Extension tools developed	16	none	13	3	4
Information to farmers by stockist	70%	75%	50%	15%	10%
Income earned by seed farmers Ksh.	None	2,969,400	3,150,000	1,045,120	NA
Increase in household incomes	40%	60%	40%	25%	NA
Quantities of seed sales					
• Maize MT	None	23	19	13.5	None
• Beans MT	None	73	6	4.6	None
<b>Adoption Rate %</b>	20%	55%	30-35%	15-20%	None
Soil sampling & Soil analysis			0	222	None
Fertilizer blending	None	None	Developed 4 blends East	Developed 4 blends West	None

\*F = Females      NA-Not available

## 2.1. Seed Multiplication and Income Earned from Seed Sales by Small-Scale Farmers

Seed multiplication was undertaken under the umbrella of the KARI Seed Unit (KSU), a registered seed merchant within KARI. This collaborative arrangement ensured that seed multiplication, certification processing and marketing conformed to the “Seed and Plant Varieties Act” of the Government of Kenya. KARI Seed Unit at KARI Katumani Centre was the main source of materials that were multiplied by the Project. KSU supplied basic and pre-basic seed and planting materials. ICRISAT also provided some improved planting material of pigeon peas and groundnuts.

Kenya Plant Health Inspectorate Services (KEPHIS) is the statutory regulatory agency that inspects and certifies the quality of seed and planting materials and agri-inputs. HEPHIS played the role of inspecting seed crops in the field, during packaging, distribution and merchandising. In addition, KEPHIS participated in the training of small-scale farmers and stockists in the proper methods of seed multiplication, processing, storage and marketing.

During the first three years over 60 farmer groups involving 450 farmers were trained and participated in seed multiplication. However, in the fourth year 7 farmers groups and 2 stockists were identified and selected on strict criteria for their ability to sustain seed multiplication, processing and marketing. These 9 seed enterprises (Table 2) were financially supported to multiply, process and market seed as sub-grantees of ADSP. These are expected to sustain the seed activities of ADSP in their respective areas. The 9 seed enterprises now procure basic seed from KSU, contract farmers to grow the seed, purchase the seed from contracted farmers, process and market the seed through stockists and other farmer groups.

As shown in Table 1, according to the log frame 50 farmers were expected to have been trained in seed multiplication at the end of the Project (EOP), a total of 439 seed growers had been trained and involved in seed multiplication. 440 small-scale seed farmers planted a total of 1000 acres. A total of about 250 metric tons of a variety of seed were produced over the four years. In addition, farmers planted over 7,000 seedlings of fruit trees.

Table 2 shows the number of small-scale farmers involved in seed multiplication, the quantity of certified seed produced and value of seed produced and marketed during the fourth year. A total of 439 farmers directly participated in the contractual multiplication of certified seed and fertilizer use under the supervision of the 9 sub-grantees. A total of 145 acres were planted with different varieties of maize, beans, green grams, sorghum, pigeon peas and cowpeas. Maize, beans and sorghum contributed 85% of the total value of seed multiplied. The seed crops of maize, beans, sorghum and green grams were inspected and certified by KEPHIS. Bean seed contributed about 40% of the total value of all seed multiplied. Beans are preferred by farmers (market demand driven) because the isolation distance for fields of seed beans is 50 meters compared to 200 meters for maize. Cassava varieties resistant to mosaic virus and drought tolerant were multiplied and sold to farmers in area west.

Table 1 shows that from March 1999 to March 2003, approximately 200Mt of certified seed of different varieties were produced during the year. In addition about 25Mt of cassava cuttings were produced. The sale value (earning by farmers) of the seed was Ksh 7,164,520 (US\$95,527). Table 2 shows that 86,998 kgs of seed of different varieties were produced during the 4th year. The sale value (earning by farmers) of the seed was Ksh 2,969,400 (US\$39,592) compared to Ksh3.15 million (US\$ 39,744) in the previous year, a decline in the earnings by farmers of about 5%.

Farmers reported that the increase in their incomes due to the sale of seed had improved their lives. The farmers reported using the earning from seed to buy extra family food, paying school fees for their children, purchasing livestock (see Photos 1 below) and constructing/improving houses. During the gender analysis, most households stated that both husband and wife had decided on the way the income

was to be used. This was as a result of the gender training by the Project. However, there were still some few cases where husbands monopolized the money to the detriment of the family who work the farms. ADSP continued to educate farmers on gender equity and fairness.

**Table 2: Seed Multiplied, Packaged and Marketed by Various Seed Enterprises  
March 2002/2003**

Name of Enterprise	Number of farmers multiplying seed	Area planted with seed Acres	Quantity of seed or fertilizer produced Kg	Value of seed produced Ksh	Value of seed marketed Ksh.
Nyacoda	12	4.8	6,561	235,220	221,400
Maguje Women group	8	6.4	1,113	66,780	58,540
Bung Kwach	24	10.0	10,228	248,900	220,065
Siaya Farmers Centre	15	4.0	8,001	328,020	285,460
RADS/Cobas (fertilizer)		N/A	-	-	0
KK Mkulima	15	6.5	5600	168,000	143,650
Ngelani (fertilizer)	204	N/A	1,800	-	600,000
Kyeko farmers	97	16.8	4,860	291,600	1,200,000
Ciambaraga	17	16.0	4,720	283,200	680,000
Mitunguu Seed Growers	6	4.0	3,200	128,000	90,000
UCCS	14	8.60	1,730	56,580	240,000
Individual farmers Machakos	12	3.0	485	29,100	None
Ruguti women group	14	5.0	2,700	162,000	None
Lake Basin Development Authority	1	60.0	36,000	972,000	972,000
<b>Total</b>	<b>439</b>	<b>145.1</b>	<b>86,998</b>	<b>2,969,400</b> <b>US\$39,592</b>	<b>4,711,115</b> <b>(US\$62,815)</b>

It is worth noting that ADSP collaborated with ICRISAT to multiply seed of 4 varieties of pigeon peas and 4 of groundnuts that were developed by ICRISAT. ICRISAT supplied a total of 130 Kg of breeder seed of the 4 varieties of pigeon peas and 75Kg of 4 varieties of groundnuts (Table 4). Both varieties of pigeon and groundnuts have improved attributes of early maturing and quality seed over existing varieties. Thirty-eight (38) farmers in Kyeko and 2 farmers in UCCS planted the pigeon peas in area East in November 2002. Three 3 farmers planted the groundnuts seed in March 2003 in area West. The first harvest of pigeon peas is expected between April and May 2003, while that of groundnuts is expected in between July and August 2003. The multiplied seed will be multiplied further to increase the quantity of seed before it is sold to seed enterprises to sell to farmers.



Photos 1: Farmers admiring cows bought from the proceeds of sale of ADSP seed

## 2.2. Field Crop Demonstrations

During the 4.5 years, ADSP supported small-scale farmers and sub-grantees to establish and manage crop demonstrations. The objective of the demonstrations was to promote improved agricultural technologies of crop varieties (maize, beans, cowpea; groundnuts; pigeon peas, cassava and sorghum) fertilizer and soil fertility to farmers. Other technologies demonstrated included intercropping practices; conservation tillage with Round Up; different fertilizers and blends (organic and inorganic) and integrated pest management practices (IPM).

As shown in Table 1 earlier, a total of 566 crop demonstrations were established between 1999 and 2003 compared to the initial total projected of 192 projected for the end of project (EOP). Table 3 shows typical demonstrations of improved technologies during the fourth year. A total of 11,810 farmers managed and participated in the demonstrations. Another 34,561 farmers were exposed to the demos of improved technologies during visits and field days. The content of the training included:

- Good seed bed preparation
- Early planting and seed selection
- Fertilizer use and placement
- Integrated crop management
- Harvesting and post- harvest measures
- Gender balance
- Seed multiplication, processing and marketing.

In Kitui, ADSP collaborated with FAO to conduct demonstrations utilizing the Farmers Field School (FFS) approach. This was found to be appropriate as farmers frequently interact and made decisions as they went through the training around the demonstration sites. At the end of the season, the farmers were able to make informed decisions according to their financial and economic situation.

As a result of demonstrations, there was increase demand and use of yield-enhancing inputs (seed and fertilizer) for target crops. Also farmers acquired relevant skills in seed and crop production. During field days, other farmers that visited the demonstrations learned about the technologies and selected technologies that suited their conditions. The demonstrations increased availability of agricultural

information to smallholder farmers. It is estimated that the demand and use of yield-enhancing inputs of improved crop varieties and fertilizers by participating farmers increased by 50%.

**Table 3: Types of Demonstrations and Number of Farmers Participating in Demonstrations, by Sub-Grantee, 2002/03**

Name of Enterprise	Type of Demonstrations	Number of farmers participating	Number of farmers attending field days
Nyacoda	sorghum, beans, fertilizer	110	1800
Maguje Women group	sorghum, beans fertilizers	25	520
Bung Kwach	sorghum, beans, fertilizers, maize	66	780
Siaya Farmers Centre	sorghum, beans, fertilizers, maize, groundnuts sorghum, beans, maize; DAP, urea, CAN, manure; agrochemicals	54	830
RADS fertilizer extension messages over-the-counter	DAP, Urea, CAN, manure; agrochemicals; sorghum, beans, maize.	2389	4500
KK Mkulima	sorghum, beans, fertilizers, maize, groundnuts sorghum, beans, fertilizers, maize; agrochemicals; Round-up,	2345	5400
Ngelani fertilizer extension messages over-the-counter	DAP, Urea, CAN, manure and sorghum, beans, fertilizers, maize Round-up,	1945	4300
Kyeko farmers	DAP, Urea, CAN, manure and sorghum, beans, fertilizers, maize	132	2534
Ciambaraga	DAP, Urea, CAN, manure and sorghum, beans, fertilizers, maize	54	854
Mitunguu Seed Growers	beans, maize, fertilizers, IPM and French beans.	23	430
UCCS	sorghum, beans, fertilizers, maize, cowpeas, green grams, Round-up, pigeon peas	78	2030
Masongaleni Farmers groups	fruit trees;	78	680
Kiunduani –Makindu GK Cycle Mart stockist	sorghum, beans, fertilizers, maize, cowpeas, green grams, pigeon peas, agrochemicals	45	880
Total		7,344	25,538



Photo. No. 2 Group of farmers attending a field day at Kyelemi Farmer's Group listening to collaborators (KARI) staff

### 2.3. Establishment of Seed Enterprises

As a strategy for establishing a sustainable commercial and community-based agri-inputs distribution system, in January 2002 twelve (12) CBOs/stockists (Table 4) were identified for sub-grantee status in the transfer of technology. Nine sub-grantees focused on seed production, processing, packaging and marketing while two focussed on fertilizer repackaging and marketing. It is noted that the Diocese of Embu (Thiba Farm) did not accept the sub-grantee conditions and hence was dropped from the list of sub-grantees.

Table 4: Names of Seed Enterprises Supported by ADSP, 2003

Name of the District cluster	Name of the subgrantee	Activity involvement
Kisumu/Nyando	Nyakach Community Development Association (Nyacoda)	Seed production, processing, and marketing
Homa Bay/Suba	<ul style="list-style-type: none"> <li>▪ Maguje Community Resource Center</li> <li>▪ Bung-Kwach Seed Growers Association</li> </ul>	Seed production, processing and marketing
Siaya/Bondo	<ul style="list-style-type: none"> <li>▪ Siaya Farmers Center (Trading as Wilson ltd)</li> <li>• RADS Agrovet- fertilizer</li> </ul>	Seed production, processing and marketing Fertilizer packaging and distribution
Kitui/Mwingi	Ukamba Christian Community Service (UCCS)	Seed production, processing and marketing
Tharaka/Nithi	<ul style="list-style-type: none"> <li>▪ Ciambaraga Farmers Self Help Group</li> <li>▪ Mitungu Seed Growers</li> </ul>	Seed production, processing and marketing
Machakos/Makueni	<ul style="list-style-type: none"> <li>▪ Kyeko Self-Help Farmer Group</li> <li>▪ K.K Mkulima Stores (Stockist)</li> <li>▪ Ngelani Enterprises</li> </ul>	Seed production, processing and marketing Fertilizer packaging and distribution
Mbeere district	<ul style="list-style-type: none"> <li>▪ Catholic Diocese of Embu (Thiba Farm)</li> </ul>	Seed production, processing and marketing

The purpose of selecting and supporting the 11 sub-grantee enterprises was to:

- Establish and strengthen agri-input organizations that would replace Winrock-ADSP and continue the sustainability of project activities at the end of the Project. These organizations would be trained fully and would provide extension services, multiply, process and market seed and fertilizers.
- Link these sub-grantees enterprises to service providers such as KEPHIS, KARI, private sector and MOARD for the purpose of improving the production of improved certified seed and fertilizers.

During the fourth year, the 11 sub-grantees were trained in technical and business hands-on aspects of agri-input supply. The sub-grantee enterprises have since taken over most of the activities concerning seed multiplication processing and marketing, and fertilizer repackaging and distribution

**Table 5: Financial Status of the Seed Enterprises Supported by ADSP, 2003**

Name of sub-grantee	Grant allocated Ksh	Grant Used by 31/3/03 Ksh	Balance Grant by 31/3/03 Ksh
Siaya Farmers Centre (Wilson O Wilson Limited)	500,000	429,583	70,417
Nyakach Community Development Association (NYACODA)	1,100,000	404,250	695,570
Maguje Women	300,000	211,596	88,404
Bung Kwach	400,000	276,122	123,878
RADS Agrovet	250,000	35,420	214,580
Kyeko	500,000	486,563	13,437
KK Mkulima	500,000	236,544	263,456
UCCS	500,000	120,657	379,343
Ciambaraga	400,000	231,616	168,384
Mitunguu Seed	300,000	242,011	57,989
Ngelani Enterprises	250,000	45,430	204,570
Thiba Farm	800,000	-	800,000
<b>TOTAL</b>	<b>5,800,000</b> (US\$77,330)	<b>2,719,792</b> (US\$36,260)	<b>3,080,208</b> (US\$41,070)

Table 5 above shows the amount of funds allocated and used by each sub-grantee seed enterprises during the fourth year. A total grant of Ksh 5,800,000 was allocated to the 11 seed enterprises as sub-grantees. By March 31, 2003, a total of Ksh 2,719,792 had been disbursed to the enterprises. Approximately 10% of the disbursement was for the purchase of mixing drums, sealing machines for polythene bags, printed polythene bags for packaging seed and fertilizers weighing scales and bicycles. These facilities greatly enabled the enterprises to chemically treat, package and market certified seed. The other disbursed funds were used to purchase certified seed from farmers and market the seed.

The nine seed enterprises conducted the activities of seed multiplication, processing and marketing under the facilitation of ADSP. As shown in Table 5, all the nine seed enterprises performed very well in the multiplication and processing of seed. However, most of them were unable to market their seed on their own. Only three seed enterprises (KK Mkulima, Siaya Farmers Centre and NYACODA) had the capacity and facilities to market the seed. The three seed enterprises have applied to KEPHIS for a license to

become private seed merchants and ADSP has supported their applications. The other six seed enterprises have not developed sufficient capability to market seed on their own without the Project. It was recommended these enterprises be linked to established seed merchants who will contract them for seed production. Evidently, these enterprises have good skills in seed production.

#### **2.4. Marketing of Seed and Fertilizers**

The success and sustainability of ADSP depends specially on the adoption of improved seed and fertilizers by small-scale farmers. Thus, an effective and efficient marketing system for these agri-inputs to farmers is important. Also the marketing of farm produce (maize, beans, sorghum) enhances seed sales through stockists and other outlets.

Clean and certified seed produced by farmers was collected from farmers by the various seed enterprises (sub-grantees) that had contracted the farmers. The seed was stored and processed by the respective seed enterprises shown in Table 2. Storage and processing facilities of KARI, Katumani and Lagrotech Seed Company were also used by the seed enterprises to supplement their own facilities. This sharing of premises is part of the collaboration between Winrock International and partners.

A total of over 200 Mt of assorted seed was processed over the four years by ADSP. In the fourth year, the 9 seed enterprises took over that responsibility. The processing involved thorough seed cleaning, treatment with approved chemicals and packaged in 2 kg labeled bags. During the processing, the staff adhered to chemical “safe use regulations and guidelines”.

As a way of enhancing the sustainability of the seed marketing system the following activities were undertaken by ADSP:

- A survey to identify enterprises interested in seed processing and packaging
- Identification and sourcing of appropriate seed processing equipment
- Development of promotional materials for maize, sorghum and improved bean varieties
- Development and display of billboards on ADSP activities on demonstration sites and with stockists.

A marketing model for integrated seed production, processing and marketing that was developed in 2001 was tested during 2002 (see **Annex III**). The model aimed at chain-linking stakeholders in the production, processing, marketing and use of the seed and fertilizers. Thus, the chain-linkage was between and among small-scale seed farmers, processors, stockists and grain producers. During years 3, 4 and 5 the marketing model was applied. Seed enterprises purchased improved basic seed from KSU, supplied it to its contracted farmers that multiplied the seed. The enterprises then purchased back the certified seed from contracted farmers, processed and packaged it in 2kg labeled bags. The enterprises then sold the seed directly to farmers and through agri-input stockists. Approximately 200 Mt of assorted seed was sold to farmers in and outside the project area during the five years (1999 to 2004).

Fifty-one (51) rural stockists trained by ADSP on agri-input supply, were the main outlets for the distribution of the well-packaged and labeled seed maize (DLC and KBC), bean (KB-1, KB-9 and Katx-56) and seredo sorghum (**Annex IV**). The stockists then retailed the same to farmers in the project area. This volume of seed sold to stockists and subsequently to farmers is encouraging. Stockist reported increased sale of ADSP seed by 50% over the four years.

Marketing efforts and strategies included crop field demonstrations and farmer field days, use of promotional materials, mainly billboards, posters, brochures and radio advertisements in local languages. Challenges to the marketing of seed included the supply of free relief seed to farmers by some organizations, low purchasing power of farmers and problems associated with introducing a new product

in the market. Besides the seed enterprises did not have resources and skilled marketing personnel to sell seed in the highly competitive and seasonal seed market place.

Tables 5a and 5b show the prices of seed in 2001/02 and the revised prices for 2002/03. In the year 2001/02 the price structure set by ADSP for the 2kg packs of seed was slightly below the market price for hybrid maize seeds. However, during this year the price for seed maize was revised to reflect the lower potential of ADSP seed and the lower cost of production.

The main retail outlets for seed and fertilizers are stockists that are widely distributed throughout the Project area. There are over 150 stockists most of them have been trained by Winrock-ADSP. In addition these stockists provide technical advisory services over the counter and through leaflets and posters developed by ADSP.

**Table 5a: Structure of Price for Maize Seed 2001/02 and 2002/03**

Stage in the market chain	Minimum quantity purchased in kgs	2001/2002 ADSP Price Ksh/2kg	2002/03 Revised ADSP price Ksh/Kg	2002/03 Hybrid seed price Ksh/Kg
ADSP to Agent	2000kgs.	220	160	255
Agent to Stockist	12x2kgs.	240	180	265
Stockist to Farmer	2kgs.	260	200	270

**Table 5b: Structure of Price for Bean Seed 2001/02 and 2002/03**

	Minimum quantity purchased in kgs	Recommended Price ADSP Ksh/2kg	2002/03 Market leader price Ksh/Kg
ADSP to Agent	2000kgs.	140.00	145
Agent to Stockist	12x2kgs.	160.00	160
Stockist to Farmer	2kgs.	180.00	180

In 2002/2003 the price for ADSP maize seed was Ksh 200 per 2 kg compared to the price of Ksh 280 per 2 kg for hybrid seed maize distributed by the market leader in the seed sector. The lower price for ADSP seed was as a result of lower production costs. This made seed more affordable compared to seed from other companies. Price for seed beans was the same for the ADSP seed and that of competition. The high prices for ADSP bean seed are due to the high price of Ksh 60 per kg that is paid to farmers to motivate them to multiply bean seed. Otherwise the market price paid to bean seed farmers is Ksh 40.00 per kg. The ADSP seed enterprises (sub-grants) have been advised to reduce the price to seed farmers. Already Siaya farmers Centre are paying Ksh 40 per kg of beans. This action reduced retail price of beans to Ksh 160 per 2kg while retaining the same margins. It must be noted that many low-income farmers still buy low quality seed from the market at much lower price because of their low purchasing power.

Fertilizer use is critical to the production of crops. In this regard, two sub-grantee stockists (Ngelani and RADS Agrovet) were supported, facilitated and sensitized to package fertilizers in 2kg properly labeled packs. The packing of fertilizers in 2kg packs enhances affordability and accessibility of fertilizers by small-scale farmers. During the year, Ngelani Stores in Machakos town was able to sell 18 tons of

fertilizer to over 1900 farmers in one season. The fertilizer price was Ksh 55 per 2 kg. This price of the 2 kg fertilizer pack is competitive in the market compared to price of poorly packaged fertilizers.

It must be appreciated that the proper packaging of the fertilizer in small 2kg packs has opened a wider window for small-scale farmers to use fertilizers. Ngelani Store is expecting to sale more fertilizer volumes in future. RADS Agrovet is in the process of packaging and marketing the 2kg fertilizer pack in the April-July long rains in area west.

During the 5<sup>th</sup> Year, emphasis was put on strengthening marketing of seeds and fertilizer at all levels through the 11 sub-grantee enterprises. The sale of seed and fertilizer will principally targets small-scale farmers that are within the respective communities where seed is produced. Also linkages will be established with seed companies, relief agencies and NGOs for distribution beyond the project area.

## **2.5. Training of Stockists, Farmers and Extension Workers in Business Skills**

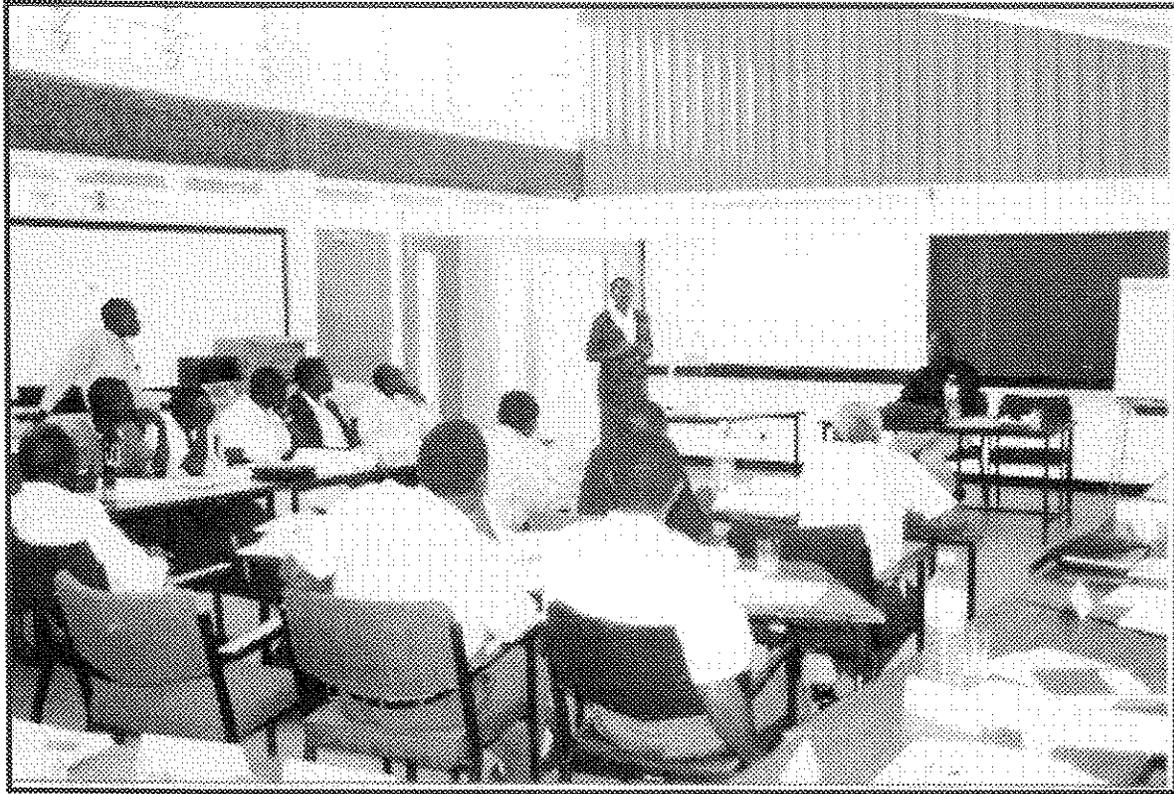
The Project conducted several two-day business courses for farmers, stockists and seed enterprises. The objective of the business training was to increase technical and business skills of the participants and enhance the demand and sale of improved seed and fertilizers. The trainings covered the following areas:

- Record-keeping
- Sourcing short-term finance and credit
- Seeds and fertilizer marketing
- Safe-use of agri-chemicals
- Gender awareness

It is worthy noting that 38% of the participants were women that are key in agricultural production. This satisfactory representation of women is due to the gender training and awareness by ADSP (refer to Section 2.6).

In addition to the training, individual stockists and seed enterprises were visited and advised on many aspects of their businesses. The main focus was on seed and fertilizer sales and promotion. During the frequent visits, the stockists were supplied with over 2000 technical leaflets and 500 posters displaying the improved maize, beans and sorghum varieties. It is estimated that over 150 stockists benefited from the training and visits.

Overall the participants, especially stockists, gained useful business skills that they are using in their businesses. Most of them indicate that their sales increased by 30 to 50 percent due to the training and advisory services provided by ADSP.



*Stockists attending a business training conducted by ADSP-TechnoServe staff*

## **2.6. Gender Training of Trainers (TOTs) and Rural Communities**

During entire period of the Project, mainstreaming gender in the Project took a center stage. Tables 1 and 6 shows the numbers of persons that attended the training of trainers (TOTs) and community gender courses conducted by ADSP. The objective of the gender training of TOTs and community members was to create awareness of the need to share fairly resources, workload and benefits among family members and communities. Thirty-five (35) representatives of farmer groups, CBOs, NGOs, Ministry of Agriculture and ADSP staff attended a gender analysis course of “Training of Trainers” (TOTs) in gender”. Beatrice Wamalwa of ABEO, USAID/Kenya also attended the training. The main output of the trainings was a report that was prepared and circulated to ADSP stakeholders and course participants. Other outputs were “Action Plans” for gender implementation and monitoring in the respective sub-grantee seed enterprises. During year 3, 4 and 5 the 11 sub-grantees implemented the Action Plans developed during the TOT course. Gender analysis training was also conducted for community farmer groups in order to create awareness and balanced sharing of workload, productive resources and benefits. The output of the training was a report that was circulated to all the 11 sub-grantee seed enterprises.

During the participatory gender training it was clear that due to inequitable sharing of workload, productive resources and benefits between men and women, women were not motivated to adopt new technologies that burdened them more but earned men more income. As a result of this realization of the inequitable sharing men felt guilt that they worked less on farms and yet used most of the income from the farms without fair sharing with women.

Overall, there is substantial change in households with respect to the sharing of incomes, resources and workload. Men are more aware and receptive to fair and balanced sharing of household incomes, resources and workload. It is estimated that 60% of the households that are trained in gender are practicing some form of gender balance and fairness in sharing incomes, resources and workload. Women

particularly have given verbal testimonies of improvement in family relations due to better understanding of gender balance in the households. In addition, women stated that they are motivated to work on farms because of the fairness in sharing farm work, income and resources.

Even then the assessment showed that many farmers were aware of gender balance, it was a new concept and the adoption process of integration and change is of necessity slow.

The results are summarized as follows:

- Although there is strong understanding and appreciation of gender by the field agents, the degree of gender integration was found to be generally low with wide variations between the district clusters. Their main constraints are the inadequate skills in practical application of gender analysis tools and the lack of time due to heavy schedules and vast areas of coverage.
- Gender analysis carried out on selected gender field level groups during the assessment showed that there are issues related to division of labor, access to and control over productive resources and benefits and the decision-making that may derail the performance of the project. In all the areas, women work longer hours than men; and some men associated the poverty in their areas to men's unwillingness to work and that is why *"men die earlier than their spouses to let the household to function"*
- The activity-specific gender concerns, which require to be addressed, are the adoption of technology from the demonstrations. Women are already overworked, spending a lot of time looking for means to feed their families and cannot manage to adequately practice the new technology in their own farms and also due to the minimum control they have over the control of resources and benefits. This definitely kills their motivation and morale to continue producing.
- Although the ADSP has made efforts to integrate gender in the project operations, the impact is rather modest. The ADSP collaborators have no gender policies and it will be upon ADSP to systematically assist them to mainstream gender into their activities.
- As a result, women are now being included in all management committees of CBOs that participate in ADSP.

**Table 6: Number of Farmers that Attended TOT and Community-Based Gender Training by Project Area, 2002/03**

Project Area	Total no of people attending TOT gender-based course	No of Farmers attending Community-based gender course
Area East	35 (15 females =42%)	157 (63 females = 40%)
Area West	33 (10 females =30%)	70 (42 females =60%)
Total	68 (25 females= 37%)	227 (103 females = 46%)

## 2.7 Promotion of Horticultural Crops

During the Mid-Term Evaluation during the fourth year (August September 2002) it was recommended that Winrock International facilitate the transfer of technology of the KARI improved horticultural crops (see section 2.10). During the year, emphasis was placed on promoting the establishing of fruit tree gardens (mango, bananas and pawpaws) among the small-scale farmers in area East. Another focus was

on seed multiplication of improved traditional vegetables and groundnuts in area West. In collaboration with ICIPE, Winrock participated in training 2 technical staff in Integrated Pest management (IPM) practices in the production of okra and French beans in line with the EUROGAP regulations. ICRISAT also conducted farmer training on pigeon peas and groundnuts.

Table 8 shows the number of farmers that were initially trained on the management of mango tree, establishment of pawpaw nursery, vegetable and groundnut seed production and IPM. The trainings were conducted within rural by staff of the Ministry of Agriculture, KARI, a local stockist “service provider” Gideon Kituku of GK Cycle Mart, ICIPE, ICRISAT and Winrock International. The focus of the course was on fruit tree grafting, planting and management, bottle drip irrigation and marketing.

**Table 7: Number of Farmers Trained in Horticultural Crops Production and Management, 2002/03**

Item	Crop, nature of training & collaborating institution	Name of Farmer Groups in training	No of persons in training
1.	Mango, banana and pawpaw production and management MOA & KARI & Gideon Kituku	1. Ingola- Kibwezi 2. Mwandandu- Kibwezi 3. Kyeko- Machakos 4. Kalawa -Kitui 5. Yatta, Kitui	35 22 54 23 16
2.	Seed multiplication of traditional vegetables MOA & KARI	NYACODA- Nyando	43
3.	IPM in French beans and Okra ICIPE	Thika, Kyeko	25
4.	Pigeon peas & groundnut seed bulking ICRISAT & KARI	1. NYACODA -Nyando 2. K’opiyo- Siaya 3. Kyeko- Machakos 4. Kalawa- Kitui	8 4 52 18
Total			300

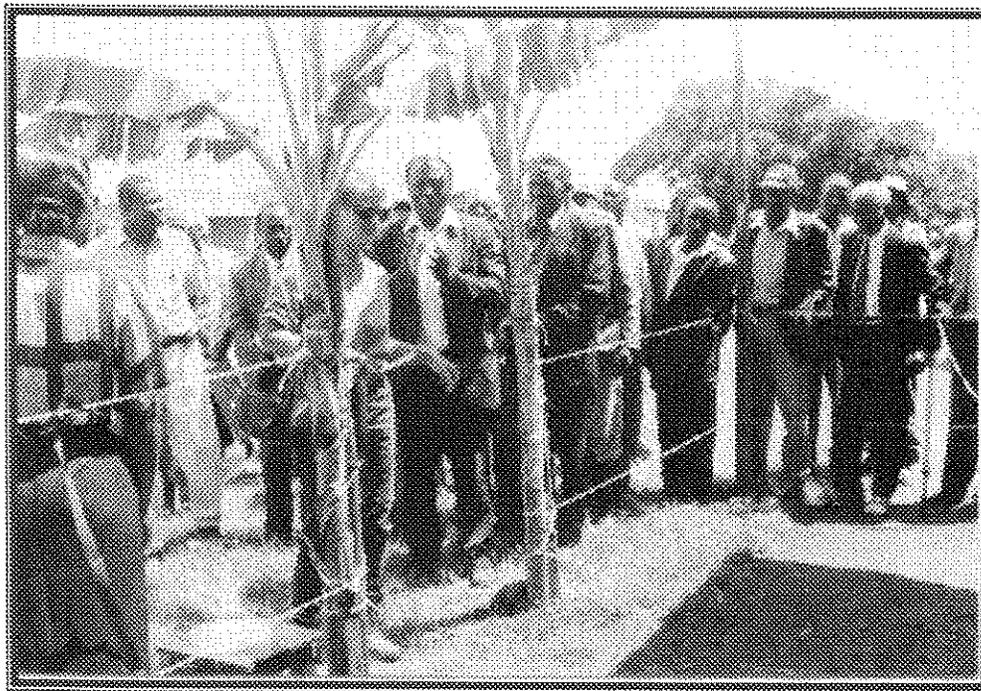
A total of three hundred farmers and technical staff were trained in the production of various horticultural crops and multiply seed as shown in Table 8. These persons will be the key facilitators in the implementation of technologies related to the various crops. The farmer groups trained in horticultural crop production have already prepared to participate in their respective activities during the long rains of April July 2003. It is expected that over 3000 fruit trees of mangoes, bananas and pawpaws will be planted during that season.

## 2.8 Visits to the Project Areas

During the Project period, many varied people from diverse organizations visited the activities of the Project. They included farmers, officials from Government of Kenya, researchers, consultants, donors and implementers. Below is a description of a sample of visitors to the Project during the fourth year of 2002/03. The aim of the visits was to familiarize with and learn some lessons from the project.

Rashid Ahmed the District Commissioner visited and officially launched Siaya Farmers Centre seed enterprises in Siaya on 24<sup>th</sup> April 2002. Phoebe Muchele, the Nyanza Provincial Horticultural Officer visited NYACODA and launched the seed enterprise on 25<sup>th</sup> April 2002.

Dr. Meg Brown of ABEO, USAID/Kenya visited Kyeko Farmers FSHG, Machakos District to officially launch the seed enterprise on the 3<sup>rd</sup> May 2002. Dr. Pierre Antoine, the ADSP Program Director from Winrock International, USA, accompanied Meg Brown. Government officers, Private firms, CIMMYT and PLAN International attended the launch of Kyeko enterprise.

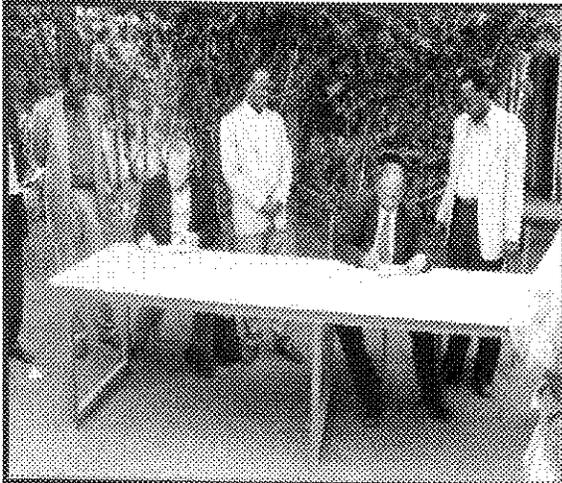


**Photo 1: Dr. Margaret Brown of USAID cutting the tape to launch the Kyeko Seed Enterprise**

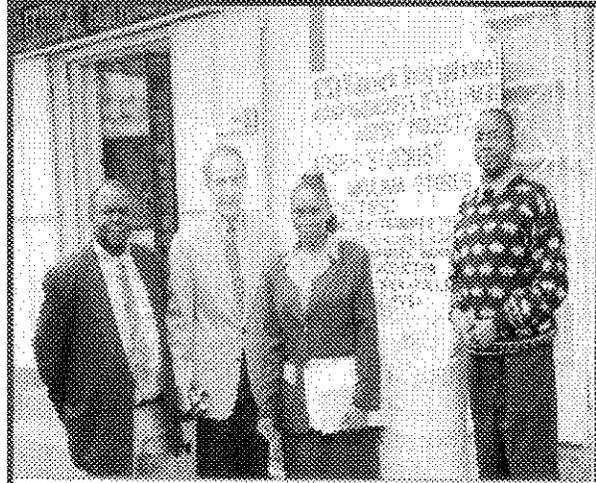
Dr. Maria Mullei, Dr Julius Kilungo and Beatrice Wamalwa of USAID/Kenya visited seed farmers in Machakos District and officially launched KK Mkulima seed enterprise on 23<sup>rd</sup> May 2002.

Pharesh Ratego of USAID/Kenya visited and officially launched Maguje and Bung Kwach seed enterprises in Homa Bay and Suba districts on 30<sup>th</sup> and 31<sup>st</sup> May 2002, respectively.

Dr Lawrence Ragwa of KARI Seed Unit, KARI and DG Kibata the District Agricultural Officer Nithi District visited and officially launched Ciambaraga Seed enterprise and Mitungu seed enterprise on 5<sup>th</sup> and 6<sup>th</sup> June 2002, respectively. Mr. D. Mutai, the District Officer Yathui and Dr. L. M'Ragwa visited and launched Ukamba Christian Community Services (UCCS) seed enterprise at Wamunyu, Machakos District on 7<sup>th</sup> June 2002.



*Photo 2: Dr. Frank Tugwell and Dr. Bonaya Godana, Kenya's Minister for Agriculture sign visitor's book after attending a field day in Machakos District*



*Photo 3: Dr. Richard Brown with a stockist in Machokos accompanied by Winrock-ADSP staff*

Dr. Jeff Mutimba of the Department of Agricultural Extension, Makerere University visited our offices to learn about our model of technology transfer. He expressed his desire to initiate a similar Project in Uganda using the public sector, private sector and NGO partnership model.

Mr. Bikash Pandey from Winrock International in Nepal visited ADSP offices to learn more about the seed multiplication activities. He also shared his experiences in clean energy activities in Nepal.

Mr. Robert Musyoka of KARI Katumani and patron of Kyeko Seed Enterprise visited and discussed ways for expanding multiplication of seed and distribution of fruit tree seedlings at Kyeko. As a result, ADSP has plans to introduce multiplication of seed for pigeon pea and improved fruit tree seedlings.

Dr Paul Seaward of SCODP visited our offices to discuss ways for collaboration in the promotion of improved seed and fertilizer use among small-scale farmers. As a result, improved seed was purchased by SCODP for demonstration to farmers outside the ADSP areas.

Drs. Scott Thomas, Elon Gilbert, Alfred Muthee and Lehman Fletcher of USAID/Kenya Mid-Term Evaluation team visited ADSP activities between 11<sup>th</sup> September and 10<sup>th</sup> October 2002 to assess the performance of the ADSP since its inception. The performance of the Project was reported to be good. A summary of the findings and recommendations are included in Section 3.0 of this Annual Report.

Prof. Daniel Mukunya, Dean Faculty of Agriculture visited ADSP on 31 Oct 2003 to familiarize himself with our activities.

Prof. Olufunga Enguchobi, FAO consultant visited ADSP seed activities on 9<sup>th</sup> December 2002 with a view to modeling seed production for FAO.

Miki Morimitsu from World Bank Washington visited on 25<sup>th</sup> February 2003 to discuss feasibility of smallholder irrigation projects in Kenya.

Nicol Spence from UK visited on 11<sup>th</sup> March 2003 to develop a proposal on crop protection in collaboration with ICIPE.

## 2.9 Mid-Term Evaluation

During August and September 2002, Louis Berger (commissioned by USAID/Kenya) conducted a Mid-Term Evaluation (MTE) of ADSP that was implemented by KARI, KEPHIS and Winrock International. The MTE Report was circulated to key stakeholders and partners and it is available for reference. Based on the extensive evaluation, the MTE team was satisfied with the achievements of Winrock in the transfer of improved technologies (maize, bean sorghum, green grams) developed by KARI. Good quality certified seed of open-pollinated varieties suitable to semi-arid areas had been multiplied, packaged and marketed. In addition the partnership model of the private sector of stockists-public sector of KARI and MOA, and NGO represented by Winrock was lauded. Furthermore the role of Winrock in the training and strengthening seed enterprises and agri-input stockists was exemplary. The team made a number of recommendations as follows:

- The support of agricultural activities should be based on clear marketing studies and support and should involve the participation of all/most stakeholder.
- Encourage CBOs and Stockists to become licensed seed companies.
- Devolve some KEPHIS activities to private seed inspectors.
- KARI to re-direct efforts to technology development rather than multiplication of seeds.
- KARI to focus more on strategic partnership to reach larger numbers of CBOs and other stakeholders
- Consider project extension to replicate successes by region and commodity.
- Expand ADSP activities to other crops, especially horticultural crops and collaborate more with the KARI Maize Division
- Winrock and KARI social-Economic Division to work closely in monitoring and evaluation of ADSP and assess its impact to the beneficiaries.

The MTE report suggested strengthening of seed marketing institutions and expands activities that were recommended as follows:

- Further multiplication of KSTP 94, a maize variety that is tolerant to striga weed as well as multiplication of seed of horticultural crops, pigeon peas, groundnuts and rice.
- Introducing horticultural crops and traditional vegetables into ADSP.
- Mainstreaming gender into project activities with the participating communities.
- Impact studies on the beneficiaries as well as diffusion of impact on the non-participating communities.
- Marketing promotion of ADSP technologies through demonstration, exhibitions, publicity and shows.

ADSP implemented the recommendations from October 2002 to January 2004. As described in section 2.7 above, farmers were trained in horticultural production and marketing. In addition, over 7,000 fruit seedlings were planted by farmers in Area East. Gender training was strengthened and seed marketing strengthened with radio publicity.

## **Section III. Fifth Year Annual Report: April 2003 - January 2004**

### **3.1 Acknowledgments**

I would wish to commend the staff of the Winrock International ADSP, Lagrotech Consultants and the TechnoServe that have dutifully undertaken the various activities during the fifth year, and provided the information in this Report; particularly the ADSP Field Agents and Business Advisors who were dedicated while implementing the project.

I also would like to thank our collaborators, KARI, KEPHIS, Ministry of Agriculture and other NGOs and CBOs that have facilitated the implementation of the project's activities.

I wish to acknowledge the tremendous advisory support received from Dr. Pierre Antoine of Winrock International in the USA who made several tips in the year to ensure that project implementation is diligently done and closure is smooth.

Last but not least, I wish to appreciate the consultative and informative assistance and field evaluation efforts from staff of USAID Mission to Kenya.

**E. O. Baraza**, ADSP Coordinator, extension activities

### **3.2 Introduction**

As Indicated in the previous sections, the Winrock International -Agribusiness Development Support Project (ADSP) was started in April 1999. The strategy of the project is to utilize private sector, NGOs and farmer groups to transfer technology from research institutions to small-scale farmers in medium and low potential areas in Kenya. The Project activities are multiplication and delivery of improved seeds and other agri-inputs, especially fertilizers, to small-scale farmers through stockists, community-based organizations (CBOs) and farmer groups.

In order to achieve the objectives of the project, farmers, CBOs and stockists are trained in agricultural and business skills that empower them to utilize the technologies for the enhancement of their incomes and welfare.

The delivers through close collaboration with a number of public and private sector organizations, such as Kenya Agricultural Research Institute (KARI), Kenya Plant Health Inspectorate Service (KEPHIS), Ministry of Agriculture and Rural development (MoARD) and other NGOs.

The first three years were spent in identifying farmers' constraints through PRAs, whereby their crops were prioritized and area of need specified. This culminated in crop variety demonstrations, soil fertility verification and demonstration, and capacity building of farmer groups, stockists, collaborators and ADSP agents. The period also saw the capacity building of smallholder farmer groups in production, processing and distribution of certified seeds of preference to the groups.

Mid-term evaluation was conducted in the third year and areas that needed further strengthening identified for the remaining period of the project. The final year was thus used to bridge the gaps identified by the MTE. Some of the identified gaps included institutionalizing and strengthening of the seed enterprises in marketing in order to be responsive to the seed and fertilizer industries, introduction of high value horticultural crop multiplication to supplement seeds of food crops, and further mainstreaming

of gender with farming communities. The seed enterprises were also encouraged to strengthen linkages with service providers within their territories and to aggressively market their businesses and services to their clients

The project also carried documentation of its activities and impact on the beneficiaries through video filming during the final year as an exit strategy. The sustainability of farmer groups through which the project reached the farmers and through which seed multiplication and processing is carried out was strengthened through capacity building of the groups in the area of governance. Finally in preparation for the final evaluation, the project carried an internal impact evaluation during the year.

### **3.3 Project activities**

- Involved in the strengthening of the seed enterprises and stockists through visits and linking them to service providers like KARI seed unit that supplies basic seed, KEPHIS that does seed inspection, Ministry of Agriculture extension division and private agro-input distributors
- Working on horticultural development with the targeted farmer groups on those enterprises that have greater market orientation and profitability
- Training farmers and stockists in technical and business skills;
- Seed and fertilizer packaging; and marketing of seeds to the CBOs and stockists.

The key activities undertaken during the final year of the Project were fulfillment of recommendations of the MTE team in addition to continuing activities with seed and fertilizer enterprises. The other key activities during the final year included documentation of project activities through a video as well as an internal impact study. Both were carried through private service providers.

#### **3.3.1 The ADSP Impact Assessment Study**

From October to December 2003, an internal impact assessment study was conducted by a consultant hired by the project.

The objective of the study was to assess and document the effects/impacts of ADSP on the socio-economic status of participating and non-participating households, communities, firms and other institutions. The assessment will quantify the benefits/ losses that accrued from the Project.

The specific variables quantified included:

- Wealth creation (Effect of increased income on the living standards of households, enterprises and communities)
- Educating children
- Improved housing
- Purchased livestock
- New investment- new enterprises
- Assets accumulation
- Food Security
  - More available diversified food (cereals, legumes, fruits, vegetables)
  - Less expenditure on purchased food

- Better nutrition
- Better status in community
- Social capital
  - Education levels and future benefits
  - Increased exposures to other issues
  - Knowledge of the role and contribution of KARI, KEPHIS and MoARD
- Stockists
  - Improved transparency and accountability
  - Increased sales volume
  - Contribution of stockists to better extension services
- Informed/knowledgeable/skilled community
  - Better informed decision making
  - Better investors
  - Better participation in community and household activities.
  - Better leadership in community
- Diffusion of technology to non-participants
  - Effect on non-participants (adopters)
- Institutional Strengthening/partnership
  - Strengthening linkages between KARI/KEPHIS/Seed Farmers
  - Increased competition in seed sector/ stockists
  - Increased use of improved agri-inputs
  - Small-scale seed producers, processors and distributors.
  - Improved farmer group governance
- Small scale seed multiplication
  - Skills acquired by the farmers
  - Access of improved seed to farmers in rural markets/communities.
  - Reduced prices for seed and agri-inputs
  - Better quality seed available to farmers.
- Gender mainstreaming
  - Equitable access to productive resources use
  - Equitable income sharing
  - Equitable sharing of workload.

- Environmental conservation
  - Improved health status for chemical sprayers
  - Safe crops and health of consumers
  - Soil and water conservation
  - Improved soil fertility due to intercrop
  - Diversified cropping system (cereals, legumes, fruits, vegetables)

This survey was carried in the entire project areas targeting sampled farmers in the groups, stockists that have been beneficiaries and all the seed enterprises that got the support of ADSP to start the enterprises.

### **Summary of Findings**

- The Public/Private/NGO/CBO partnership followed by the project has worked very well and achieved project goals in a relatively short time.
- The period of hunger in the project districts in a year has been reduced from 8-10 months to 4-6 months through the project intervention.
- Gender mainstreaming has generally been done and this is likely to sustain the adoption of the technologies at the household level.
- There is huge leap in the use of fertilizers arising from packaging in small packs affordable to the resource poor farmers.
- Agricultural information availability has been enhanced through the private sector extension providers.
- Sustainability of the seed production and distribution system will depend on their registration as seed merchants' by KEPHIS.

The Executive Summary of the Study is presented in **Annex 1**.

### **3.3.2 Group Training on Governance**

The objective was to ensure that the groups and CBOs that have been working with ADSP are strengthened and that they are properly set-up and focused on enterprise business and operating in a democratic, transparent and accountable environment as this is critical in sustaining the activities after the project closes.

The workshop was facilitated in a participatory manner with the discussions leading to development of the groups' code of ethics or guidelines for groups' good governance and focused on the following:

- Present position of the group as far as their aims, activities, and achievements are concerned; the challenges and coping mechanisms and lessons learnt. This was to help identify to solutions for the best practices/preferred and way forward.
- Working through with groups to develop a participatory code of ethics for each CBO/farmers group focusing on areas as legal status of the groups, role of members and of officials and the process and procedure for election.

- Definition of the supreme decision-making body in the group i.e. annual general meeting, its role and importance and highlighting elements of good governance.
- Develop process and procedure to conflict resolution within the group, trusteeship of the group assets and the financial management and control.
- Development of partnerships for sustainability of the project and enterprise.

**Table 8. Attendance at the Governance training of groups in Area West**

Date	Group/s	Venue	Attendants
July 21, 2003	Dula WG	Dula, Ndori	19
July 22, 2003	Uzima Women group, Siaya FC	Uzima	27
July 24, 2003	RALIDE, NYACODA	Ragen	14
July 29, 2003	Maguje women group	Maguje RC	23
July 30, 2003	Bung Kwach Seed Growers Association (BUSGA)	God jope.	22
			<b>105</b>

### Observations

- All the groups felt the training was very useful and ought to have been provided earlier to allow for monitoring of impact. The groups nevertheless used the training to strengthen their rules and regulations likely sustain them with the exit of the project.
- Way forward was recommended for some of the groups to come up with constitutions and a follow up by the project to find any impact on the group constitutions after training, before closure of the project.

### 3.3.3 Gender Mainstreaming in Groups:

During the implementation of ADSP, gender has been systematically addressed through capacity strengthening of partners, staff and participating farmers groups. Many communities are aware of the gender roles and have practiced the same as reflected in more equitable division of labor, resources and benefits accruing from livelihood enterprises.

It was therefore necessary: -

- To establish the status and impact of gender on agricultural production and productivity of ADSP farmer group

In July-August 2002, the Agribusiness Development Support Project (ADSP) of Winrock International trained a total 63 people drawn from 25 groups and stockists spread over 12 districts of Western and Eastern Kenya. At the end of the workshop, the participants committed themselves to train other members

within their respective groups, including community members. In order to track the degree to which these commitments were carried out, a quick assessment was conducted in January-February 2003. A participatory process was used and heavily depended on Focus Group Discussions (FGDs), Key Informants (KI) and tools of gender analysis to generate lot of qualitative data.

Results of this assessment revealed that the program had made a good start. Of the 12 groups reviewed, half had conducted some amount of gender sensitization and reached 884 people. Of more significance was the transformation that has occurred as a result of this raining. This transformation is reflected in change in social attitudes, better communication between spouses, more equity in division of labor, resources and benefits and increased production. These changes are captured in the following statements, recorded as close to verbatim as possible:

- **Improved communication between spouses**

*“Women used to smuggle grain from home in water containers under the guise that they were going to fetch water. Men also used to take some to sell to buy local brew”- (all areas)*

- **Improvements in Food Security and Family Welfare**

*“We have chased famine from our households and is now at the gate. We are going to push it even further” (Kyethani)*

- **Reduced Workload for Women**

*“At 7.00 Am, I found a member of my Executive Committee busy threshing maize in the company of his wife and mother (maize threshing is traditionally a role for women). As he prepared himself to accompany me, he entered the house to pick water for bathing—another of women’s role. His response to his mother who could not understand this change was-“I have been empowered—”.*

- **Change in Attitude: Men taking on traditionally women’s roles**

*“After the training, I shared the learning with my husband and he now assists me in collecting firewood” (Kyethani)-an old woman of about 80 years*

*After training about 100 boys and girls on gender in my school, the boys are now making tea for teachers and at home, they are helping with domestic chores such as fetching water and firewood (Wanje Primary school teacher-Nyando)*

*Men no longer harass boys when they find them in the kitchen-*

- **Confidence and Self-Esteem Build:**

*I used to consider myself useless but I now know that I am capable and can do a lot of things” (BUSGA)*

- **Reduction of Domestic Violence**

*There has been a drastic reduction in the incidence of domestic violence and conflict now reflected in almost no cases being taken to the elders (male elders)-BUSGA*

## Lessons Learned

By the end of assessment, some patterns began to emerge pointing to factors that lead to good or poor performance. Some of these include:

- Training both husband and wife has demonstrated the greatest potential for change since getting spouses together provides a conducive environment for discussion and dialogue
- Targeting school children has great potential for change because young people have both the advantage of a long life span while they are less stuck to cultural attitudes
- Use of “*family life education*” concept is a lot less threatening than *gender* and still focuses on similar issues of labor, resources and power relations.
- Stockists are a main actor in the food security chain. One important role they could play is to ensure that the real “farmers” who happen to be women are adequately trained in the use of the inputs purchased by men. Persuading men to bring wives along when purchasing inputs (but men would have to taken on some of the roles currently being undertaken by women) or the stockists running farm-level training activities could be explored.
- In order to share its successes more widely, Winrock International might consider professionally documenting these successes. This will clearly be a major output of this project.

As a follow on the successes, more groups were trained in gender as follows during the reporting period:

**Table 9. Attendance during gender trainings by ADSP Gender specialist**

Group	Male	Females	Total
Mwendandu and Ingola mbaa	13	11	24
Ulilinsi	21	29	50
Dula	5	8	13
Wambwaya	1	7	8
Nyamaroka	39	37	76
Gambi	15	16	31
<b>Totals</b>	<b>94</b>	<b>108</b>	<b>202</b>

### Comments:

The report still sites major gender disparities and concerns that will continue to undermine production and productivity to achieve the required rural development. These are in the areas of division of labor, to and control of over production resources and benefits.

The recommendations are

- To strengthen and sustain the enthusiasm that has been generated by the sessions.
- That all meetings with the farmers groups (technical or otherwise) touch on gender particularly on what was learned t, issues that require change and gains made so far.

### **3.3.4 Documentation of the project activities and impacts through a video production:**

#### **Scope of Work**

The purpose for requesting for shooting of the video is to come up with a documentary of 20-30 minutes in an informative and educative methodology capturing the activities of the project as implemented by the assisted group members and capture the impact as said by the beneficiaries and partners to improve the well being of the resource poor farmers.

The video documentary focused on shooting and capturing in visual images the following:

- The physical environment as it reflects to the livelihood activities
- The community profiles and their socio-economic activities
- ADSP interventions with the communities
- The collaborative and partnerships developed for the benefit of delivering the project
- The quality of field crops as result of transfer of technology by ADSP
- Income benefits obtained by the family household through seed multiplication (Commercializing agriculture)
- Seed production, processing and marketing – way forward to become seed merchant.
- Stockists as extension providers, input marketing as enhanced through ADSP project and way forward for the input business
- Gender training and its effect on harmonizing gender relations with group members and the community in general.

#### **Observations**

- The team who carried documentation was most professional and has excellent knowledge of the local extension and food security program, which blended well in the document.
- All the participants, including members of the consortium project beneficiaries, collaborators, and partners in the program were covered.
- The donor for the project was also well covered

#### **Beneficiaries**

- The first primary beneficiaries of the project are farmers accessing improved technologies whereby nearly 3,000 farm households have been directly trained by the project in the on-farm demo plots. Many more farmers have benefited from on-the-counter availability of agricultural information through the project trained stockists. There is also diffusion of technologies to farmers who are non beneficiaries to the project.
- The second primary beneficiary of the project are the nearly 500 smallholder farmers involved in seed production whose incomes have immensely been improved through production of certified open pollinated seed varieties.

- The 1<sup>st</sup> secondary beneficiaries are the 160 farm input stockists whose income and cash flow have been increased through increased business associated with increased demand for improved seeds, fertilizers and extension information.
- The 2<sup>nd</sup> secondary beneficiaries include the 12 seed enterprises whose businesses in the processing, packaging, and marketing of certified seeds and fertilizers who the project provided with grants to start the business.
- The tertiary beneficiaries include the collaborators whose staff skills have been raised in areas such as soil sampling and analysis, gender analysis, governance, seed production and processing etc.

### **Sustainability**

- Sustainability of improved farm productivity and incomes at the household level is assured through gender awareness created through training by the project.
- Sustainability of project technologies at the group level is assured through training on group governance.
- Sustainability at the institution level is assured through the strong Public/Private/CBO/NGO partnership model developed by the project.

### **3.3.5 Fertilizer Business Evaluation**

Visits to individual agro-input stockists and seed enterprises were organized at their premises in the Project area and they were provided with hands-on advice on technical, legal and business of fertilizers by the fertilizer specialist.

### **Summary of findings**

- Winrock International (ADSP) has been involved in several districts in the western and Eastern areas of Kenya viz Kisumu, Nyando, Siaya, Bondo, Homa Bay, Suba, Machakos, Makueni, Kitui, Mwingi and Meru Districts in an effort to empower the communities with the relevant training in agricultural technologies as well as in agro-business skills.
- Seed production, processing and packaging has been very successful in the project areas but fertilizer business has not increased significantly.
- Visits to stockists and CBOs in the project areas showed that due to low purchasing power of the farmers, small fertilizer packages are very popular.
- However, packaging was not done as per the requirements of Kenya Bureau of Standards (KEBS) and hence the decision to make individual visits to those concerned in order to advise on the fertilizer packaging requirements.
- Fertilizer prices were found to vary from town to town but differences were largely due to transport charges.
- Lack of input credit still remains a constraint as far as agro-business is concerned.

- There is very low fertilizer usage in Mwingi District and fertilizer demonstration trials are needed in order to sensitize farmers on the benefits of fertilizer use.
- Through constant training, fertilizer demonstration trials and across to cheap credit scheme, it is likely to increase fertilizer consumption in Kenya to 350,000 MT in 2004 and probably to 400,000 MT by 2005.
- Admittedly, fertilizer blending technology has not yet been adopted despite the training. This technology can however be easily transferred to CBOs who would then market their blends to stockists and farmers. The main constraint in this activity is the high cost of soil sampling and analysis to determine the nutrient status of the soils.

### **3.3.6 Collaboration with International Organizations.**

#### **(1) Winrock International/ICIFE collaboration**

During the year, the Winrock International/ ICIFE collaborative project took off with the planning sessions done to develop the course contents for the service private providers and schedule the actual dates for the trainings, which were planned for October/November.

The course aims to improve the capacity of service providers on the following

- Communication skills
- Working with farmer groups

#### **Participatory methods of technology transfer:**

The candidates were trained on how to work with farmer groups and enabled the participants have the necessary basic participatory skills for extension. The course duration was two weeks (theory and practical sessions) and covered the following issues:

#### **Plant protection**

The trainees learned the following:

- IPM concept and principles (theory)
- Growing a healthy crop (theory and practical)
- Proper pesticide handling and application (NRI) [theory and practical]
- Quality control and management (theory and practical)
  - Harvesting and grading
  - Packaging
  - Disposal of culls and crop residues

#### **Business management course**

The objective of this course was to impart skills to private “business development service” (BDS) providers in the areas of:

- Mobilizing and capacity building for small-scale farmer groups,

- Developing management and entrepreneurship skills of small-scale farmers, agri-input suppliers and horticultural traders and exporters;
- Developing information database and systems, marketing linkages, promotion, and product diversification, pricing and distribution mechanisms.

It is expected that the business service provider are able to serve stakeholders in the horticultural sector thereby enhance incomes of small-scale horticultural farmers.

### Business management

- Business Management Practices
- Market information
- Computer Use
- Hands-on exposure to business practices.
- Writing of Business Reports

### Marketing & linking with exporters

- Certification
- Auditing
- Quality control

### (2) Winrock international/ICRISAT Collaboration

The collaboration between WI and ICRISAT on groundnut and pigeon peas was initiated as one of the broad exit strategies of diversifying enterprises for ADSP farmers and the seed enterprises. During the long rains 2003, ICRISAT provided ADSP with 75 kg of 4 varieties of groundnuts and 5 variety of pigeon pea obtained from ICRISAT's research programs in Malawi and India respectively.

#### ICRISAT Collaboration on Groundnut Production.

These groundnut seeds were multiplied using ADSP trained farmers in area west and a total of 1800 kg of groundnut seeds produced as follows:

**Table 10. Final production weights of groundnuts seeds in area west.**

Variety	Unshelled weights (Kgs)	Shelling %					
		Unshelled weight (Kg)	Weight of seed (Kg)	Weight of husks (Kg)	Weight of seeds and husks (kg)	Weight of chaff (Kg)	%
ICGV 12991	24bags@5kg = 1,080	10	6.0	3.5	9.5	0.5	60
	1 bag@09 kg = 09	44	25	—	—	—	57
	Sub =1089						
ICGV-SM 99568	9bags@45kg = 405	10	6.0	3.5	9.5	0.5	60
	1bag@30kg = 30	45	25	—	—	—	56
	Sub = 435						
JL-24	5bags@45kg =225 1bag@30kg =30 sub=255	10	5.5	4.0	9.5	0.5	55
<b>G. Total</b>	<b>1779kg</b>						

- The shelling percentage of the various varieties were used to distribute the quantity of unshelled groundnuts to the farmers at Got Nanga and Inungo during the current (2003) short rain season
- Out of the produce, some 500 kg was given to farmers for further multiplication and it is expected that more than 10 tonnes of improved seeds will be harvested by the close of harvest in January 2004. ICRISAT will hopefully continue with the program after the exit of ADSP and is keeping the remaining seed for use in future.
- Peanut butter enterprise is coming up in the project area and will add value to this innovation to the benefit of farmers and up scaling of groundnut production.
- ADSP conducted training of farmers on groundnut seed production and the table below summarizes attendance segregated in gender.

**Table 11. Attendance at Groundnut Farmer training – Nov 10-18.**

Category of attendants	Males	Females	Total	Remarks
<b>Inungo</b>				
Groundnut farmers	5	13	18	Bulking
Non-groundnut farmers	18	32	50	12 females from Nyando District
WI ADSP staff	3	-	3	training
Nutrition extended project staff	2	1	3	Being trained
Provincial administration	1	-	1	Chiefs rep.
Ministry of Agriculture	1	-	1	Divisional Agric.Ext. officer representative
<b>Got Nanga</b>				
Groundnut farmers	5	2	7	bulking
Non-groundnut farmers	20	35	55	4 men and 10 women from neighboring division.
WI ADSP staff	3	1	4	training
Nutrition extended project staff	-	3	3	TOT
Provincial administration	1	-	1	Chief rep.
Ministry of Agriculture	1	-	1	DEC
<b>Ndori</b>				
Groundnut farmers	4	11	15	bulking
Non-groundnut farmers	20	11	31	
WI ADSP staff	3	-	3	training
Nutrition extended project staff	-	-	-	
Provincial administration	1	-	1	
Ministry of Agriculture	1	-	1	DEC rep.
<b>Total</b>	<b>89</b>	<b>109</b>	<b>198</b>	

#### Topics covered

1. Farming systems in operation
2. Commercializing farming as agribusiness.
3. Good seedbed preparation.
4. Use of good seed
5. Planting on time

6. Use recommended spacing
7. Weeding – 1<sup>st</sup> and 2<sup>nd</sup> ( earthing-up )
8. Varietal Purity
9. Identification & Rousing rosette plants
10. Timely harvesting.
11. Drying & storage
12. Existing potential for commercializing groundnut farming.

### ICRISAT Collaboration on Pigeon Pea Production

The group was given a total of 95 kg of three varieties of pigeon peas and was planted by 38 farmers. The varieties were as below: -

- ICPL 87091 planted by 28 farmers
- Kat 60/8 planted by 8 farmers
- ICEAP 00068 planted by 2 farmers

**Table 12. Pigeon Pea farmers in Machakos/Makueni**

Name of farmer	Crop variety
Veronica Kaleche	ICPL 87091
Simon Waita	ICPL 87091
Earnest Maitha	ICEAP 00068
Raphael Kamieri	ICPL 87091
Joseph Mbonge Mwaki	ICPL 87091
Philemon Wandia	ICPL 87091
Kasengi Kioko	Kat 60/8
Kanyotu Wanaina	Kat 60/8

### KITUI/MWINGI:

Thirty-five kilograms (35kgs) of assorted seed was also distributed to the farmers in Kitui of the varieties ICEAP 00557, ICEAP 00554, ICEAP 0068, Kat 60/8 and ICPL 87091.

**Table 13. Pigeon pea farmers in Kitui/Mwingi**

Name of farmer	Crop variety
Ruth Kitheka	Kat 60/8
Kitungu Mbuvi	ICEAP 00557

### Comments

- The position is that the pigeon pea seed multiplication has started well and farmers are enthusiastic and hopeful as a diversification effort.
- There were questions on price per kilogram to be low.
- Another area that is of concern is the inspection. The seed were sourced from ICRISAT and not KSU and the question of the proof of origin arises. However pigeon pea is not a scheduled crop and will not attract scrutiny from KEPHIS.

### 3.3.7 ADSP Support in Horticultural Development.

The MTE team evaluated the project in August/September 2002 and recorded an impressive performance of the consortium in the transfer of technology of improved seed varieties of food crops, thereby creating greater demand for improved seeds.

- Consequently the team asked the consortium to employ the strategy in high value horticultural enterprises in order to supplement seeds of food crops sold only at the onset of rains as an exit strategy.
- The project subsequently targeted KARIs improved fruit trees in area east and improved indigenous/traditional vegetables in area west.

#### (I) Support in Horticulture in Area East

The horticultural project was started with ADSP taking advantage of long rains 2003, though unreliable, to start with fruit trees.

- 9 farmer groups with 155 members were established in 3 clusters in Makueni.
- 108 farmers in Machakos with Kyeko SHG were also trained on-farm on fruit tree planting.
- Farmers established several fruit seedlings across the two sub locations namely Masimbani and Ulilinzi, in Masongaleni location of Kibwezi division.

**Table 14. Farmers growing horticulture crops in Area East.**

Cluster group	No. of Groups	Total no. members.
Ulinlinzi	4	59
Ing'ola Mbaa	4	35
Mwenda Andu	1	31
<b>Total</b>	<b>9</b>	<b>125</b>

#### Seedling Distribution.

Seedlings were obtained from the Regional Research Centers at Katumani and Thika and more than 6000 distributed to the various farmer groups in just one season as indicated below:

**Table 15. Horticultural seedlings distributed by ADSP Area East**

Group	Mango vr Apple	Mango vr Tommy	Bananas	Pawpaws	Total
Ulinlinzi	230	70	-		300
Ing'ola Mbaa	170	30	65	4000	4265
Mwenda Andu	200	20	17		237
Kyeko FSHG	410	-	-		410
Kalawa	500	-	-		500
<b>Total</b>	<b>1510</b>	<b>120</b>	<b>82</b>		<b>5712</b>

- More than 90% survival rate was recorded with the farmers. The farmers in Kibwezi division were trained in the use Katoma drip technology
- The fruit trees already established are doing well though farmers were to supplement the water deficit watering the trees through Katoma Irrigation technology.
- The farmers were also paying for the seedlings provided and a total of Ksh. 22,390.00 has been remitted to the project.
- Payment was low due to delayed payment for farmer seeds by those who purchased their seeds.
- A total of 48 farmers attended the two days training conducted by KARI, HCDA, local stockists and ADSP staff in the following subjects:
  - Fruit trees and their management
  - Availability and use of dry land seeds
  - Role of HCDA and marketing strategies by
  - Pest and Diseases and their management
  - Simple Drip Irrigation by MR G K KITUKU (GK Cycle mart)
  - Agriculture as Business
  - Horticultural Vegetables and IPM
  - Gender awareness.
- The beneficiaries of the horticultural activities in Tharaka/Nithi district cluster were the two sub-grantees, Mitungu seed growers and Ciambaraga self help groups.
- In Mitungu, the group consisted of 15 members (6malesand 9 females) and apart from seed growing as an enterprise, they are involved in horticultural crops e.g. French beans, okra, brinjals and other fruit trees.
- The training needs assessment was done and integrated pest management (IPM) was identified.
- Training was done around demonstration plots once every week for 8 weeks (mid April to mid June) i.e. from planting to grading.

Training was done in the areas below: -

- Agronomic practices
- Pests and disease identification and control
- IPM
- Safe use of chemicals
- Hygiene standards
- Fertilizer use

**Table 16. Farmers trained in vegetables production**

GROUP	No. Trained		Total
	Male	Female	
Mitungu seed growers	6	9	15
Nkui women group( Ciambaraga)	6	14	20
<b>Total</b>	<b>12</b>	<b>23</b>	<b>35</b>

## (2) Support for Traditional Vegetables in Area West.

Training of NYACODA farmers on traditional vegetables was held on 5<sup>th</sup> August 2003 by KARI scientist from Kisii Regional Research Center. A total of 35 people participated in the training as below.

**Table 17. Participants to the traditional vegetables training**

Category of attendance	No. of attendance
Farmers	25
Collaborators	5
ADSP staff members	3
Trainer from KARI	1
<b>Total</b>	<b>34</b>

- Farmers identified the traditional vegetables and ranked them with cowpeas ranked 1<sup>st</sup> overall followed by spider plant and *Crotalaria ( mito )* in that order.
- They also identified constraints and ranked the same, where lack of production technologies topped the constraints followed by negative attitude towards traditional vegetables.
- They were then trained on production starting with seedbed preparation and planting using organic and inorganic manures.
- Participants then agreed on the way forward as follows:
  - Farmers to teach others on traditional vegetable production
  - The trained farmers to adopt planting according to training methods.
  - Look for vegetable markets through local traders.
  - ADSP and NYACODA to make follow-up in 3 to 4 weeks.
  - Promotional group is formed among farmers to allow for planting of seed crop together.
  - Monitoring group be formed among the farmers to provide peer pressure on participants.
  - Participants to meet on 16<sup>th</sup> September to review progress and impact of the course.

### 3.4 Visitors

During the reporting year, the USAID Country director Dr. Toh with a team of officers, accompanied with the Director of Agriculture Dr. Wanjama and representatives of American Breeders Society, Land of the Lakes, and Dr Richard Jones of ICRISAT visited the project demonstration and collaborative groundnut seed multiplication activities in area west.

The team visited crop variety marketing demo plots at NYACODA, and groundnut seed bulking at Mrs. Ongudi's farm with Ragen Catchments conservation group. Dr Jones of ICRISAT further visited groundnut seed bulking at Got Nanga where 3 improved varieties from Malawi are being multiplied.

ADSP to host the Minister of Agriculture at the national celebrations held in NYACODA area of Nyando district. Finally the Director visited during the Final ADSP external evaluation which coincided with the end-of-project one day workshop conducted with KARI. Mr. Niels Hanssens of Winrock International, Bamako, also visited the project during the year to assist in the preparation of the internal impact assessment study.

A team of ADSP Winrock Agriculture Coordinator with Mr. Harrigan Mukhongo and Mr. Kabuga both of ICRISAT and Mr. Anthony Hovey, Country Director Concern Worldwide in Kenya also visited the groups growing groundnuts in area west during the reporting year. The team visited one farmer Mr. Kopyo and a nutritional group at Inungo in Siaya district, one group comprising of orphans in Maseno Kisumu district, one group in Kericho district, and, one CBO and a farmer in Nyando district.

ADSP was also honored by a visit by the Ethiopian team of research and extension workers from Bahir Dar region to familiarize with and learn more on the community-based seed systems as done by Winrock ADSP. The team visited seeds and fertilizer enterprises in area west.

### **3.5 ADSP End-of-Project Workshops**

Two end-of-project workshops were conducted whereby the status of project activities was reviewed and the way forward discussed and formulated. The first workshop was conducted in Kisumu and attended by all ADSP seeds and fertilizer enterprises, ADSP field agents, and collaborators. The second workshop was jointly organized with KARI and attended by WI consortium, USAID, KARI, KEPHIS, Ministry of Agriculture, and Seed Companies.

#### **3.5.1 ADSP Kisumu Workshop; creation of a Seed Enterprise Forum (ADSF)**

ADSP organized an exit workshop with seed and fertilizer enterprises on the 14<sup>th</sup> and 15<sup>th</sup> December 2003. The workshop was held in Kisumu and all the seed enterprises except Mitunguu, attended. Issues in respect to sustainability of the enterprises arose from the workshop and after discussion, the seed enterprises settled on formation of a forum, the **Agribusiness Development Support Forum (ADSF)**, to articulate their needs and aspirations, and advocate for the small-scale seed farmers, as detailed below:

- **Vision**

Sustainable availability of yield enhancing inputs through partnerships involving the public sector, private sector, Community based organizations, and smallholder farmers.

- **Mission**

Enjoin the community based seeds and farm input stakeholders in a forum to articulate the needs and aspirations of the CBOs in certified seeds production, processing and marketing and to lobby for an improved operational environment for seed and fertilizer enterprise business.

- **Aim/Goal**

The goal is to establish a forum whose responsibility is to network for the 12 ADSP seed and fertilizer enterprises to enable them access to improved high status seeds from researchers, inspection and certification services from KEPHIS, extension services from various extension providers, and market information when the ADSP closes.

- **Strategy**

Out of the 12 CBOs and Lagrotech Seed Company, three individuals were selected to form a secretariat for the forum to articulate objectives, strategies, operations and activities of the forum as follows:

Convener: Mr. Japheth Kokal, NYACODA

Secretariat desk: Mr. James Agira, Lagrotech Seed Company

Member: Mr. Ngila Kimotho, KK Mkulima Agrovet

- **Issues for forum**

Exit of ADSP Winrock has left behind disjointed seed enterprises with numerous shortcomings in the statutory requirements in seed production and processing business. The forum will enjoin these bodies with both public and private service providers to address these constraints.

- Networking of CBOs for marketing of their various products.
- Articulating the CBOs needs and constraints to the rest of seeds and fertilizers stakeholders with a view to creating an enabling environment for certified seed production, processing and marketing.
- Identifying partners to provide essential support services to the CBOs and lobby for such services at affordable rates.
- Forum to network the CBOs with both local and international research centers for the provision of appropriate germplasm for multiplication.
- Lobby for pro-poor seed policies from the government.

- **Tasks of Secretariat**

- Establishment and registration of the forum.
- Articulate clear objectives, strategies, operations and activities of the forum.
- Identify potential partners.
- Propose membership of:

General committee,

7 from area east representing 7 CBOs in area east

5 from area west representing 5 CBOs in area west.

1 from Lagrotech.

Technical committee

To be determined by the secretariat but will include:

KSU,

KEPHIS,

Ministry of Agriculture

Lagrotech Seed Company

So far a draft constitution has been developed by the secretariat and is awaiting official registration as a society.

### **3.5.2 National End-of-Project Stakeholder Workshop.**

The National Stakeholder Workshop was held at the KARI headquarters on January 15, 2003. More than 100 people participated including the ADSP financier USAID, the Winrock consortium (Winrock International, Lagrotech Consultants, Technoserve Inc.) KARI, KEPHIS, private seed companies, ADSP supported seed and fertilizer enterprises, and the Ministry of Agriculture. The workshop was graced by

the presence of Director KARI, Director KEPHIS, and Director of Agriculture among other dignitaries participating.

Papers were presented from the various stakeholders and out of these presentations:

- It was obvious that the project had attained its objectives albeit at in short period of time.
- Sustainability of the activities through the seed enterprises however depended on these CBOs graduating into full fledge seed merchants, or,
- The CBOs franchise existing commercial seed companies for provision of breeders' material, inspection and certification services, and marketing beyond the communities.
- The formation of a forum (ADSF, 3.5.1 above) to articulate the desires of CBOs in the seed industry was lauded as a move in the right direction in building the capacity of these enterprises, and negotiating for a conducive working environment in the seed sector.
- Participants were agreeable on a system that is self replicating and that would link the CBOs to private enterprises. The workshop thus endorsed the networking of the CBOs with Lagrotech Seed Company as proposed through the forum.

## Section IV. Conclusions: Achievements, Impact, Lessons Learned, Challenges and Future Plans

### 4.1. Achievements and Impact

Documented data and general observation show that ADSP has had substantial achievements and impact on the beneficiaries (seed farmers, maize grain farmers and stockists), exceeding planned targets at the end of the project (EOP). Prof. Mark Odhiambo, 2004, documents this in the Report of the ADSP Impact Assessment (Executive Summary in **Annex I**).

- A total of 439 small-scale farmer seed multiplication units (745 acres) were established during the four years compared to 48 units that were planned at the end of the Project. A total of 250 Mt of seed was produced during the four years. The seed included varieties of maize, beans and sorghum. Two hundred MT was the increased seed production indicated that small-scale seed growers have acquired adequate skills for this activity, dismissing the *“myth that small-scale farmers cannot grow improved and certified seed”*. The enthusiasm of farmers to grow seed is due to the skills acquired, ready market for the certified seed and income generated.
- The sale value (earning by farmers) of the seed was Ksh 7,164,520 (US\$95,527). 85% of households used the increased income to either improve their housing or pay school fees for their children or buy livestock or a combination of the three.
- A total of over 150 rural agro-input stockists were trained in agronomy and agribusiness. As a result 51 of these well-informed stockists in rural areas conducted field demonstrations, provide extension services and purchased ADSP seed and sold the seed and other agro-inputs to farmers in rural areas. Consequently there was an increase of 35% in their seed stocks and 20% in sales and number of customers.
- As a result of ADSP demonstrations, extension services and supply of seed in rural areas, about 200 Mt of improved seed was sold to farmers through 51 stockists and CBOs. This amount of seed translates to about 4,600 acres of land planted under improved seed. Approximately 40% of farmers participating or exposed to ADSP activities were now using certified seed and fertilizers compared to 10% at the beginning of the Project
- As a result of using improved seed by target farmer groups there is about 30 to 40% improvement in crop yield and household food security and corresponding reduced expenditure on purchased food by households compared to the situation at the beginning of ADSP.
- Overall farmers, stockists and CBOs that participated in and exposed to ADSP are empowered and more skillful in handling more complex socio-economic, legal and farming activities such as fertilizer blending, market negotiations and business registration than at the start of the project.
- Farmers and stockists trained on fertilizer use recognized the impact of fertilizers on increasing crop production. Similarly, the importance of soil analysis in the judicious use of fertilizers in crop production was well received. Packaging fertilizers in labeled bags of 2kg enhanced demand for fertilizer by small-scale and resource poor farmers. Overall, because of ADSP activities, the use of fertilizers by participating farmers increased by 40% compared to the start of the project.

- Due to the gender training and sensitization in the farmer groups, about 55% of the participating farmers are men. About 85 to 90% of the participating farmers (about 9,000 farmers) trained or exposed to gender balance accepted the need for fair gender sharing of work, resources and incomes within households. In practice 30 to 40% of the participating farmers practice gender balance in sharing work, benefits and resources compared to 5 to 10% at the start of the project.
- Approximately 70 to 80 percent of participating farmers accepted the use of integrated pest management (IPM) and safe use of pesticides due to the ADSP training of farmer groups. In practice 30 to 40% of the participating farmers practice integrated pest management compared to 10% at the beginning of the project.

## 4.2. Lessons Learned

There are a number of lessons that have been learned that are useful for the replication of the project in other areas.

- The model of ADSP consortium of Winrock International, TechnoServe Inc. and Lagrotech Consultants provided synergism and complementarity that strengthened the operation of the project. The sharing of local and global experiences of the partners enhanced the performance of the project. As a result the project objectives were satisfactorily achieved.
- The collaboration with KEPHIS, KARI, Ministry of Agriculture extension service, CBOs, NGOs and other institutions facilitated the effective use of human, physical and financial resources in the delivery of services to smallholder farmers. The collaboration with KARI seed Unit (KSU) and KEPHIS in seed multiplication made it possible for ADSP to multiply, process and market seed on a pilot basis under the KARI Seed Unit license. This facilitated the establishment of rural-based seed enterprises that supply high quality seed to rural farmers.
- KARI Seed Unit umbrella license covering the small, rural-based seed enterprises provide a legal framework for small-scale seed production. However the withdrawn of the KSU license at the end of the Project will necessitate seed enterprises to be registered as seed merchants in order to continue seed production. The strict conditions required by the “Seeds and Plant Varieties Act” might make it difficult for the seed enterprises to be licensed. In this regard ADSP is consulting with KEPHIS and KSU in exploring an alternative way of legalizing the seed enterprises at the end of the project. Some of the enterprises that will not be registered could be linked to existing seed enterprises. In anticipation of the legal hitch, the seed enterprises plan to register an **Agribusiness Development Support Forum (ADSF)** that will advocate for small-scale seed enterprises.
- The legal requirement of seed inspection (certification) contained in the “Seed and Plant Varieties Act” is costly and unaffordable for small-scale seed enterprises. There is discussion within the Government to review the “Seed Act” with the objective of licensing local private and community-based seed inspectors under the supervision of KEPHIS. This would substantially reduce cost of seed inspection.
- The ability of well-trained small-scale farmers to produce certified improved seed could be duplicated elsewhere in Kenya and Africa. This is a great opportunity given that there are many community-based farmers’ groups that are bulking and marketing low quality seed. Such groups would need some technical support to produce certified seed, provided the cost of seed inspection is affordable.

### 4.3 Remaining Challenges

- Substantial free seed and grain is supplied to farmers in the ADSP area by relief agencies (FAO, CRS, GAA, ADRA and World Vision). This dampens the effective demand for improved and certified seed that is sold through the stockists in the project area. ADSP has discussed this issue with the Ministry of Agriculture and it seems there is no short-term solution.
- The restriction of KARI Seed Unit license to market project certified seed within the Project area and to approved seed dealers has limited the market for ADSP seed. KARI Seed Unit is reviewing the list of dealers that could buy project seed. Also KARI Seed Unit restricts ADSP from multiplication and marketing of seed of certain KARI maize varieties.
- There is satisfactory uptake of improved technology by farmers provided that they have adequate production skills, good purchasing power and adequate markets for grain maize, beans and sorghum. Increased capacity building and support in the marketing of grain maize would increase the rate of adoption of improved technologies, increase household production, food security and incomes of farmers.
- There is a serious challenge that has arisen due to the Large Grain Borer (LGB) that is destroying maize in stores and is seemingly resistant to the recommended chemical Actellic Super. As a result farmers and stockists have lost a lot of seed and produce to the attack of the LGB
- TechnoServe, the partner responsible for the agri-business development and seed marketing has developed many rural stockists and CBOs that are supporting the marketing of agri-inputs and providing advisory services to farmers. Although funding constraints prevented Technoserve to fully address in depth the seed marketing in year 5, the consortium supplemented the marketing efforts of Technoserve by strengthening linkages between seed producers, processors, stockists and farmers. The concerted efforts aimed at ensuring the establishment of sustainable seed enterprises.
- Regarding the sustainability of the ADSP model and the involvement of CBOs or stockists in seed production and distribution, the End-of-Term Evaluation (summary and recommendations in **Annex II**) points out: *“The successful participation of CBO’s in the production of certified planting materials is likely to remain limited and require extensive facilitation by projects such as ADSP or links with established commercial concerns. The assistance to stockists is most likely to result in sustainable progress and spread to non project areas. In retrospect, the focus of the project might have been shifted more this group and somewhat away from CBO production of inputs.”*

### 4.4. Future Plans

Given the challenges and lessons learned, and recommendations of the Mid-Term Evaluation by USAID, ADSP strategies for the future include three possible paths of action:

- Continuation and expansion of multiplication of certified seed and planting materials is technically possible and desirable, but is conditioned on registering the enterprises as seed companies.

- Alternatively, the seed enterprises should be linked to existing seed Companies that will contract the seed enterprises to produce certified seed for them.
- Once registered, the *Agribusiness Development Support Forum, ADSF*, (introduced in 3.5.1 above) is likely to form the pillar for sustaining seed activities:
  - ADSF should continue to provide technical and business assistance to farmers, farmer-based organizations and agro-input stockists involved in seed activities (production, processing and marketing). The seed enterprises and ADSF should link to stockists, CBOs, NGOs, private sector, KARI and KEPHIS for sustainability.
  - ADSF should continue to promote the adoption of improved technologies to small-scale farmers through demonstrations, field days, publicity, dissemination of educational and promotional materials and capacity building in technical and business skills.
  - ADSF, in collaboration with Agro-input stockists, farmer-based organizations and Ministry of Agriculture, should initiate and support the development and dissemination of market information in the sectors of maize beans and sorghum
  - ADSF should encourage sub-grantee seed enterprises, CBOs and NGOs to participate and support the effective and efficient marketing of agro-inputs and surplus grain maize, beans and sorghum arising from increased use of yield-enhancing farm inputs. The effective and efficient marketing of the surplus produce will increase household incomes and demand for improved farm inputs.

# **Annex I: Internal Project Assessment Study of the ADSP project. Executive Summary**

**by Professor Mark Odhiambo, Consultant for ADSP**

This is a summary of the report of the Impact Assessment Study carried out on the Technology Development and Transfer Component of the USAID funded Agricultural Development Support Project (ADSP). The aim of the study was to evaluate and document the successes, limitations and impacts of the Private Sector Technology Transfer (PSTT) sub-component of the ADSP, which was implemented by a consortium led by Winrock International and included Lagrotech Consultants and TechnoServe as its subcontractors. The Project implementation team also included the Kenya Agricultural Research Institute (KARI) as the source of the farmers' technology and the Kenya Plant Health Inspection Services (KEPHIS) for seed inspection and seed quality assurance.

The project targeted the private sector, NGOs, farmers groups, CBOs, and the existing public and private existing extension services to ensure that:

- i) The formal and informal input distributors act as effective extension agents and input distributors to the farmers.
- ii) Local seed farmers, Community Based Organizations (CBOs), and Farmers' Associations and NGOs can produce certified high quality commercial seed.
- iii) The extension materials on the use of agricultural inputs are produced and made available to the target farming community around the country.
- iv) There is overall adoption and continued use of improved seed and fertilizer as yield enhancing technologies, which would ensure increased agricultural production and income.

The project geographic coverage includes Kisumu, Nyando, Siaya, Bondo, Homa Bay and Suba Districts in Nyanza Province; and Tharaka, Nithi, Kitui, Mwingi, Machakos and Makueni Districts in Eastern Province. The major project activities in these districts included:

- a) Seed multiplication of improved varieties;
- b) Training of stockists, extension workers, CBOs, and farmers' groups on technical information and proper use of inputs;
- c) Carrying out demonstration and field trials on improved seed varieties and fertilizers;
- d) Production and distribution of education materials; and
- e) Training and conducting demonstrations on soil testing and fertilizer blending.

The study was aimed at assessing, evaluating and documenting the activities, outputs and impacts of PSTT component of ADSP on the socio-economic status of participating and non-participating households, communities, stockists, CBOs and institutions in the project areas. The study approach involved: literature review and library work mainly using ADSP project documents and reports; interviews with ADSP management staff at Winrock International Nairobi office, their partners and collaborators in the project; interviews with farmers, stockists of agro-inputs, project sub-grantees, seed processing enterprises and key informants in the project areas.

The data and information gathered were analyzed to assess the output and impacts of the project. The parameters analyzed and assessed included: increases in crop yields; levels of gross margins and profitability; levels of income and the impacts of the wealth created on children education, assets accumulation, new investments; food security and general welfare.

The following eleven sub-grantees that were assisted by ADSP were included in the study: Maguje Women Group (Homa Bay District); Bung Kwach Seed Growers Association (Suba District); Rads Agrovet (Bondo District); Nyakach Community Development Association (NYACODA) (Nyando District); K.K. Mkulima Stockist (Machakos District); Ngelani Enterprises (Machakos District); Kyeko Farmers Self-Help Group (Machakos District); Ukamba Christian Community Services (KCCS) (Machakos District); Ciambaraga Self-Help Group (Tharaka Nithi District) and Mitunguu Seed Growers (Tharaka Nithi District).

The assistance these grantees received from ADSP included training in seed multiplication, processing and marketing; funding to acquire equipment, chemicals and materials for seed processing; and for some, there was funding for renting offices/stores and for paying salaries for managers and clerks.

The following is a summary of the impacts of the project based on the information and survey results from the sub- grantees:

- Improved accessibility to certified seed by farmers at reasonably affordable prices. The certified seed adoption has risen from about 0% before the project to the current level of 75%.
- Improved accessibility and increased adoption of fertilizer use by farmers through the project's promotion of small packages and recruitment and training of local stockists.
- Improved crop yields among the project beneficiaries and the neighbouring communities.
- Increased seed and fertilizer sales and profitability among local stockists arising from increased awareness and adoption of improved input use among farmers.
- Increased income to the CBOs, seed stockists, seed growers and adopting farmers arising from increased yield and improved business practice and market access.
- Increased awareness on role of gender in development and gender mainstreaming through workshops, training and community based discussions. Equitable access and control of resources has been achieved among participant farmers.
- Improved linkages with markets for the CBOs and participating farmers for seed, farm products and farm inputs.
- Increased collaborative network with public and private sector (Ministry of Agriculture, Ministry of Culture and Social Services, KARI, KEPHIS, Lagrotech, NGOs, stockists and other CBOs) and enhanced diffusion of the project extension messages through the project materials made available to the stakeholders.
- Increased food security as the period of household food shortages have been reduced from 6 months to 3 months thereby improving the nutritional status at the household level within the project areas.
- Reduced malnutrition in children arising from ability of the farmers to provide a balanced diet to their families from increased yields of beans and enhanced earnings from improved farm productivity.
- Employment creation both at the farm level and at the seed processing and stockists levels in the seed production and marketing systems, thus contributing positively to the national goal of poverty reduction.
- Improved linkages with markets for the CBOs and participating farmers for seed, farm products and farm inputs.
- Increased demand for and actual sales of fertilizer in the project districts.
- Improved accessibility of fertilizer to a large number of smallholder farmers through the repackaging in small quantities. Fertilizers are now readily available in affordable packs of 2 kg, 5kg, 10kg and 50kg. The fertilizer adoption though still low has risen from about 10% usage to about 30%.
- Increased fertilizer use in the district among smallholder farmers thereby demystifying the widely held view that fertilizers destroy the soils.
- The training received from the project has enabled stockists to re-organize their business and realize a higher turnover than they did before joining the project.

- The total stockists sales have increased with profits accruing from the business reportedly being about three times their pre-project levels for some of the stockists.
- Most of the stockists have been linked to other stockists, NGOs and institutions.
- All seed-growing farmers have received adequate training on seed production techniques from the Winrock Consortium, KARI and KEPHIS and are therefore realizing good seed yields and high gross margins.
- The seed growers have benefited from the project in terms of increased income, food security, ability to pay school fees for their children and general improved welfare.
- In terms of material well being and welfare, some seed growers and other farmers in the project areas have managed to use the additional income for: improving food security, improving health status (nutrition and ability to pay for medication and hospitalization), improving housing e.g. building iron (*mabati*) roofed houses, paying school fees, buying crossbreed dairy cows and buying bicycles, furniture, utensils, and other consumer durables.

The impact assessment based on farmer survey results can be summarized as follows:

- Most of the farmers are literate with 84% having attained primary or post primary level of education.
- The main economic activity in the project areas is farming (94%) with only 5% reporting being engaged in trade or business, and only 1% in salary employment among group members.
- Land ownership is primarily either family or individually owned freehold tenure system.
- Although the proportion of households sharing decision making between husband and wife is significant, in the majority of cases husbands tend to make major farm decisions like enterprise choice, ploughing, crop sales, livestock sales and use of revenue earned from the farm activities.
- The majority of the farmers in the project areas as already pointed out from the grantees survey results, have benefited from training, adoption of certified seed and the use of yield enhancing inputs. Farm yields have gone up and with it have come improvements in incomes, food security and general welfare. Thus with increased yields, farmers have also realized improvement in farm income earnings, which in turn have positively impacted on their general welfare:
  - Improved housing
  - Affording to spend on consumer durables (bicycles, radios, furniture, utensils)
  - Affording to pay fees for children
  - Increased investments such as buying dairy cattle, increased contributions in merry-go-round loaning schemes especially among women
  - Increased food security and indeed food secure months have gone up from 4 months before the project to 6-8 months in project areas
  - Increased gender awareness and gender mainstreaming.

Despite the benefits and positive impacts of the project experienced by the farmers, several constraints were still facing the farming communities, chief among which included erratic and inadequate rainfall in some years or seasons, lack of credit or capital, poor access to markets and loss of farm produce through ravages by pests and diseases.

The impact assessment analysis results based on the stockists' survey can be summarized as follows:

- Most of the stockists in Area East started their business enterprises in 1995 while most of those in Area West started in 1999, thus in both cases coinciding with the launching of the ADSP project in those areas. Results further show that 40% to 77% of the stockists are owner operated.
- Analysis of ownership on the basis of gender revealed that the majority (over 80%) of the businesses were owned by men and on average they engaged between one to two permanent employees.
- The majority of the stockists have good education background with over 90% having secondary and post-secondary level of education.

- Over 54% of the stockists reported having been trained by the Winrock ADSP project on various aspects of business skills. The main thrust of the trainings included agrochemical use and protection; business management; agricultural extension; marketing; soil fertility testing and maintenance; seed testing and fertilizer blending, mixing and repacking. All the trained stockists ranked the training in business management (54%) as the most important to them, followed by marketing, extension (30%) and seed testing in that order in both project areas.
- The products sold by the stockists included seeds, fertilizers, agro-chemicals, farm implements, animal feeds and animal health products. As a means of hedging against risks of cash flow problems during off-peak seasons for any one particular product line, most of the stockists sold a range of products without specializing in any one product. This strategy helps to keep the stockists in business throughout the year.
- In assessing business performance, the analysis shows that since the launch of ADSP the stockists have registered increases in sales revenue and have recorded improvement in levels of gross margins and profits. The highest share of the sales revenue comes from animal feed, followed by animal health products, agro-chemicals, seeds and fertilizer in that order. Although the sale of certified seeds have increased over time since the launch of the ADSP, most stockists operating in the project areas regard the business as seasonal peaking during the onset of seasonal rains and tailing off towards the end of the rainy season.
- The main expenditure items to the stockists included rent for business premises, salaries paid to employees, transportation charges, electricity, telephone, license fees, business insurance, water, taxes, repairs and maintenance.
- Results indicate that only about 30% of the stockists in the project areas received seeds from farmers' groups. The rest either received from major seed merchants or from seed companies. Despite the ADSP initiative, there are still very few reliable farmers producing adequate certified seed for the stockists. The main varieties of bean seeds sourced from farmers' groups included *Katumani Bean1 (KAT B1)*, *KAT B2*, and *KAT B9* in Area East, whereas in Area West *KAT B1*, *KAT B9* and *KAT BX56* were preferred. For maize the main varieties supplied were *Dryland Composite 1*, *KCB* and *Katumani*, while that of sorghum was mainly the *seredo* variety.
- All (100%) stockists in both Area East and Area West had not obtained the crucial KEPHIS seed merchant license. This implies that majority of the stockists in Area West are operating under the Kenya Agricultural Research Institute (KARI) Seed Unit license. The high fees charged by KEPHIS and their stringent technical requirements for licensing are the main bottlenecks to acquiring of seed merchant license. As pointed out later this is an issue that must be addressed if project activities and benefits are to remain sustainable.
- The prices paid by the stockists to farmers' groups supplying certified seed was found to be relatively higher than the normal farm-gate prices for those cereals and beans sold as food grains to consumers. This explains why seed farmers realize higher gross margins than their counterparts who grow the crops for food grains. Indeed, during the farm survey, many ordinary farmers were actively seeking the opportunity to be recruited as seed growers.
- The revenue from the stockists business is put into a number of uses, which include investment of most of the profits back into the business, meeting household needs, investment in agriculture and paying school fees for their siblings.
- The main constraints to expansion of the agribusiness stockists are lack of credit for their operations and high operation costs. The stringent conditions set by banks and other formal credit institutions have left the stockists with friends and family members as their only main source of credit. These informal sources of credit have inadequate resources and capacity for mobilization for the growth of the sector.

The main impacts of Winrock ADSP project on the stockists can therefore be summarized as follows:

- (a) The project has improved their business skills through trainings in business management including record keeping, counseling and marketing,

- (b) The project has created demand for agro-inputs through increasing awareness among farmers thereby boosting the stockists' sales volume and profits,
- (c) It has also strengthened the linkage between the stockists and the farmers, the CBOs and farmers groups,
- (d) It has availed new seed varieties which are in high demand among farmers,
- (e) It has raised the incomes of farmers thereby increasing farmers' purchasing power, and hence enabling stockists to expand their businesses to earn more profits. Most of the stockists admit that they have also realized raised standard of living through increased earnings from the businesses.

Despite these impacts realized by stockists, there is still need for more support through provision of loans, further trainings on business management, improvement in extension services to farmers and strengthening of farmers' associations. Most urgent project sustainability however, is the need for the major large stockists and those who are ADSP grantees to be able to acquire KEPHIS Seed Merchant License. In our honest assessment the project life span was a bit too short and its extension a further two years may have left the stakeholders on a more sustainable and firmer footing than they currently appear to be.

In conclusion, it must be pointed out that on overall, the project has performed well and achieved most of its objectives. In terms of output the project has managed to increase smallholder seed multiplication through contracts with sub-grantee stockists and CBOs, who in turn have successfully produced, processed, packaged and marketed the seed through other stockists. However the sustainability of the ADSP activities in the project areas will depend on the stockists and CBO seed multipliers, particularly the ADSP sub-grantees obtaining the KEPHIS Seed Merchant License. Operating under the KARI Seed Unit license is not sustainable but ought to be regarded only as a stopgap measure. In our assessment there are about three to five CBOs and stockists subgrantees that could be licensed by KEPHIS with minimum risk to compromising the seed certification standards. However, again for sustainability of the project activities those CBOs, farmers' groups and other grantees who do not meet the KEPHIS licensing requirements need to be advised to continue operating under the KARI Seed Unit license; or alternatively could be linked to established licensed seed companies under whose license they could operate and also sell their seeds. In Area West, Lagrotech Seed Unit subsidiary could be one of such seed companies to link with.

# **ANNEX II: End of Term Evaluation of The Agricultural Development Support (ADSP) project: Executive Summary and Findings and Recommendations**

Prepared for USAID/Kenya by David Neubert, Team Leader, and Elon Gilbert Checchi and Company Consulting/Louis Berger  
February, 2004

## **I. Executive Summary**

### **Project Purpose**

The Project purpose, as stated in the September 1997 USAID, ADSP Project Authorization memo reads as follows: "The Project purpose is to increase the participation of the private sector in agricultural markets so as to efficiently and effectively supply yield-enhancing agricultural inputs to smallholder farmers and to increase demand for outputs from these farmers".

The main purpose of this evaluation report is to:

- Assess achievement of Project outputs and impacts outlined in the Project proposal and other documents
- Assess the sustainability of Project impacts and institutional capacity of Seed Trade Association of Kenya (STAK)
- Assess environmental and gender compliance

### **Methodology**

Fieldwork on the ADSP final evaluation took place between 5 January and 28 January 2004. The Evaluation Team was made up of Alfred Muthee (Agricultural Economist), Elon Gilbert (Agricultural Economist), and David Neubert (Agribusiness Specialist-Team Leader). Research on the final evaluation of the ADSP began with an extensive review of Project documents and included the original USAID Project document, the ASDP Mid-Term Evaluation, numerous Project reports, presentations and training materials. Interviews with senior management and staff from the implementing partners (KARI, STAK, KEPHIS, Winrock, Lagrotech, and Technoserve) were carried out early in the evaluation process and for key partners such as KARI, Lagrotech and Winrock, meetings and interviews occurred on an ongoing basis throughout the evaluation period.

ADSP Project staff selected and arranged client interviews in the field for the Evaluation Team. In total, the team met with 9 of the Project's CBO core-client groups, 6 located in western Kenya and 3 located in eastern Kenya. The Evaluation Team also interviewed 5 stockists associated with the Project and two licensed commercial seed companies, one of which worked with ADSP. One team member visited the KARI National Research Centers (NRCs) at Thika and Tigoni and toured the several farms using improved horticultural technologies in the Central Province. The Evaluation Team also met with senior managers at CRS and the Rockefeller Foundation, both of which are involved in Kenya seed sector. On 15 January 2004, an ADSP stakeholder workshop was held at KARI's main administration facility in Nairobi. The workshop examined lessons learned from ADSP and the way forward for its clients.

---

This report does not include an examination of the Tegemeo Institute of Agricultural Policy and Development Agricultural Policy Reform. A review of this component was omitted from the evaluation as this organization was undergoing a process of reorganization at the time during which the Evaluation Team was in the field. Following the submittal of the working-draft report, comments were received from ADSP partners and USAID. In preparing the final report, the team took into consideration all comments submitted. In some cases, changes were made to the report, and in other instances, after careful

consideration, the Evaluation Team refrained from making changes in the final report in response to comments.

The Evaluation Team expresses its thanks to all of the implementing partners for their cooperation, insight and assistance in the preparation of this report. Thanks are also expressed to USAID Kenya staff for sharing their knowledge and experience with the team throughout the evaluation process.

### **Project Impacts and Outputs**

The Project has had positive impacts in various areas. Yields have increased by between 200-300% above local genotypes, as reported by KARI. Interviews with farmers show that yield in maize has increased by 50-600%, while that of beans has increased by over 300-500% as shown in Annex F. Sales for OPV seeds have increased with KARI selling 149 MT during the Project period, while ADSP CBO's have produced 250 MT during the period, demand for other inputs has also increased. The private sector has participated in the market with over 300 stockists selling inputs. Over 400 farmers in CBO's have been trained in seed multiplication. A functional market has developed for CBO produced certified seeds with members purchasing 20% of sales, non-members 15%, stockists 36%, NGOs 25% and other purchasers/carryover for 4% of total sales.

The Project has made it possible for improved planting materials to reach an estimated 460,000 farmers. The Project, through Winrock, has also given grants to 11 CBO's, enabling them to participate fully in seed production, processing and marketing. The improved varieties of maize, beans, cowpeas, sorghum, millet, green grams and dolichos released were early maturing and higher yielding than local genotypes in these arid and semi-arid areas with erratic rains. The CBO's are establishing a forum for networking and this may replace the vacuum left by the closure of the Project. Some positive steps have been taken in the liberalization of the seed sector but the relevant acts have not been reviewed and the recent reinstating of KSC as a parastatal may send wrong signals to the seed industry.

At the household level, the Project had positive impacts in improving household welfare by improving food security for both group and non-group members by as much as 50%. The Project also increased household income (89% of group and 67% of non-group members in the east and 62% of group and 42% of non-group members in the west). The income from the Project has been used to meet basic household needs, hiring of labor, purchase of inputs and savings.

In the horticultural sector, the Project (mainly based in high potential areas) has also had significant increases in yields as shown in Annex Table II. There has also been some increase in demand for improved seedlings, although the supply can hardly meet the demand. Sales by KARI for bananas were (over 15,000 plantlets-33 acres) avocados (about 9,000 seedlings-90 acres), passion fruit (over 32,000 seedlings-73 acres), pawpaw and fruit seedlings from Matuga (over 12,000 seedlings-27 acres) and Katumani (over 64,000 seedlings of various varieties). Although the private sector companies have always dominated the horticultural sector, the ADSP Project facilitated the greater involvement of CBO's, farmers' self-help groups, NGOs and church organizations.

### **KARI**

Over the years, KARI researchers have identified and developed several technologies designed to improve productivity of agricultural production in the various agro ecological zones of Kenya. Prior to initiation of ADSP, many of these technologies were not being actively disseminated to the majority of the small-scale farmers. The Project sought to facilitate greater utilization of improved technologies in the Project areas through their commercialization in the private sector as a means to increase incomes and reduce poverty. In KARI, the Project supported three subcomponents, notably assistance to the KARI Seed Unit (KSU), the Horticultural Program and the Socio-Economics Program. As guided by the SOW for the evaluation, the Evaluation Team assessed progress during the Project in five areas as follows:

other donors will continue and KARI is endeavoring to increase income from its own activities through their selective commercialization. These efforts may place KARI in competition with the private sector in some instances, but are not expected to seriously affect the mandated focus of KARI programs on meeting the needs of the majority small and low resource farmers in the country.

A more serious concern is that capacity constraints and the current emphasis on technology transfer will adversely affect KARI's ability to provide the next generations of new technologies required to address farmer requirements in the future.

**Sustainability of Private Seed Producers and Stockists:** The project has been instrumental in expanding the numbers of private organizations producing and distributing seed, some of whom have been formally registered as seed companies and seed traders. Most of the certified seed production associated with the Project has been by CBO's operating under the umbrella of KARI/KSU license to produce seed. CBO's are capable of producing quality seed, but their ability to successfully market (other than locally) remains very much in question.

One stockist and one CBO have applied for licenses as certified seed producers and as many as three of the applications might be approved. The stringent entry requirements, together with the licensing fees, make it difficult for most CBO's and stockists to qualify. The successful establishment of CBO-based seed enterprises that can stand alone may be an unrealistic expectation in all but a relatively few instances. Efforts have been made to connect the most promising CBO's with licensed seed companies to enable them to continue to produce certified seed.

**Range of Commodities and Practices:** The range of commodities handled by input producers and stockists assisted through ADSP has definitely expanded and changed in the face of market conditions and a growth in capacity. The challenge for CBO's producing seed and improved planting materials is to stay ahead of the game by anticipating what the market is likely to require several months from now. This may be more a matter of changing varieties or commodities rather than trying to handle a broader range of commodities simultaneously. Facilitation by the Winrock Consortium has been critical in making these adjustments and it is not clear how well this service will be provided with the conclusion of the project.

Stockists were already handling fertilizer, but assistance from the Project enabled stockists to blend and package fertilizer to better meet local requirements. In general, stockists were already well ahead of the game in terms of the range of commodities they handled and required little encouragement from the Project to pursue additional opportunities. There is a danger that some stockists could overextend themselves by diversifying into areas where they have limited expertise.

**Sustaining the ADSP Model:** The ADSP emphasis on the commercialization of improved technologies, especially those that are essentially public goods, represents an innovative approach that improves upon more conventional technology transfer methods in terms of potential impacts and sustainability.

ADSP represents a somewhat unique partnership among rather diverse set of organization partners that was sustained by a strong convergence of interests. Replication of such a partnership seems difficult, but by no means impossible.

The successful participation of CBO's in the production of certified planting materials is likely to remain limited and require extensive facilitation by projects such as ADSP or links with established commercial concerns. Spontaneous replication even in nearby communities is unlikely. The timeframe and level of effort required might be substantially reduced through the careful selection of CBO's with established track records. Attention needs to be given from the onset to connecting selected CBO's to stockists and established seed enterprises with a view to the initiation of formal contractual arrangements among these parties well prior to the conclusion of a project.

The assistance to stockists is most likely to result in sustainable progress and spread to non project areas. In retrospect, the focus of the project might have been shifted more this group and somewhat away from CBO production of inputs.

**Transferring seed multiplication efforts to the private sector:** The private sector has been active in seed production and marketing for some time, but primarily for hybrid maize. Significant progress has been made in expanding private sector participation in recent years and conditions have become increasingly competitive. There is limited interest in OPVs, but the Project has demonstrated that there is a market for improved OPVs and interest is growing. CBO's and stockists in the Project area became involved in seed production and marketing, as a result of cooperation and agreements involving KARI, KEPHIS and the Winrock Consortium, but the extent to which these organizations will continue with the conclusion of the Project is in question. A retreat by the private sector from the production of OPVs in particular is a possibility, unless ways are found to sustain the activities initiated through the Project. The private sector is also playing an increasingly important role in the production of improved planting materials for selected horticultural commodities including tissue culture (TC) bananas and Irish potatoes. KARI is adjusting its role, guided by the ability and interest of the private sector to participate and increasingly by its own comparative advantage, as KARI is enjoined by GOK and donors to be financially self supporting as much as possible. These considerations could lead to conflicting objectives, but this does not appear to be a major problem as yet.

**Release of germplasm:** KARI has released a significant number of new technologies in recent years and entered into several agreements with private commercial firms to produce and distribute these technologies. Hybrid maize is the main commodity where there is significant interest by the private seed companies. Formerly, all KARI hybrid parent lines went to KSC. That is no longer the case. Materials developed prior to 1994 are available to anyone. Materials released since 1994 are available for sale to anyone and KARI can decide what is in its own and the public's best interests to do in each instance.

**Providing technology to farmers and market demands:** There are several related procedures/processes that KARI observes to ensure that research efforts focus on the needs of farmers in all parts of the country, including priority setting, farming system research, ATIRI, M&E, ex post and ex ante impact assessments, market surveys, and adoption surveys. Shortages of qualified personnel and financial constraints have tended to limit the coverage, but a significant number of studies have been completed nonetheless. The quality and effectiveness of these studies varies, but there has been a significant improvement in the extent to which KARI's research activities have become more "demand driven" as a result of these efforts in the past 10 years.

Contrary to KARI's statements that all materials developed by KARI before 1994 are available to the public, these materials are available only to Kenya Seed Company, to which the materials were passed. KARI and KSC have jointly applied for Plant Breeder's Rights for some of these varieties and several objections have been submitted to KEPHIS' Plant Variety Protection Office against these applications.

**Marketing Studies:** The marketing studies carried out by KARI Socio-Economics Department are of reasonable quality, but their nature makes them of limited utility to those involved in production and trade for these commodities.

Given the considerable demands on the limited socio-economics capacity within KARI, the Evaluation Team questions the degree to which KARI should try to carry out in-depth studies of marketing systems, at least in-house.

---

2 1 RADS Agrovet in Bondo has increased fertilizer sales from 0.2MT in 1997 to 8.2MT in 2003

**Adoption of improved technologies:** The adoption of improved varieties for the several commodities covered by ADSP has been significant. The major focus of Project activities was upon the grains and legumes, particular OPVs, but there has been progress with new varieties of cassava, sweet potatoes and a range of horticultural crops as well, featuring disease resistance, as well as greater productivity (compared to local varieties)

**STAK**

The Seed Trade Association of Kenya (STAK) was formed in 1982, supported by a grant from the Kenya Seed Company. Kenya's seed industry was liberalized in the early 1990's. USAID's relationship with STAK began in 1999. In May 2002, USAID provided STAK with approximately 594,000 USD over a three years period. Since then, STAK's membership has grown to 24 members and become an effective independent voice for the Kenya's private seed industry.

STAK's policy agenda is based on key issues that are relevant to Kenya private seed producers. The broad objectives of the agenda are to shift more regulatory responsibility to the private sector, improve the intellectual property rights and bring Kenya seed laws and regulations closer to international standard.

Working in concert with KEPHIS, STAK has developed a new draft regulatory language on plant breeders' rights that will simplify the process of obtaining plant variety protection. STAK has also worked with KEPHIS to develop a regulatory system that will shift the responsibility of the in-field and processing facility certification to private inspectors. STAK plans to work with Moi University and the private seed industry to identify an equitable solution to issues involving vegetable seed viability testing and regulation. STAK plans to complete its research this year, following which it will draft new regulatory language and begin the lobbying process.

STAK was elected to take the lead role by the Eastern and Central Africa Program on Agricultural Policy Analysis, Seed Regional Working Group (ECAPAPA, S-RWG) to develop a set of standardized seed sector policies and regulations for the region.

Historically, there has been a very close link between STAK and the Kenya Seed Company; however, this link has weakened over time. In order for STAK to be viewed as independent and free of special interest by its membership as well as the domestic and regional agribusiness community, it must have leadership that is unquestionably independent and free of any hint of bias or prejudice.

#### **KEPHIS**

KEPHIS has worked to build its own capacity; it has good top-leadership that has a clear understanding of the important role the organization plays in the industry.

KEPHIS may at times be overzealous in enforcement of regulations and can be slow to respond to the needs of the private sector, particularly in the areas of seed field inspection and lot certification. This problem can be remedied with the planned licensing of private field inspectors and building capacity in the organization. The private sector has suggested that KEPHIS build capacity by increasing the number of MS and PhD level plant breeders to management positions in key departments.

In 2001 and 2002, KEPHIS did not grant any plant variety protection rights to applicants; however by the end of 2003, they had granted protection to 90 applicants and approved (but not yet granted) an additional 80. By end 2003, KEPHIS finally had begun moving variety protection application through their pipeline. The majority of plant materials submitted for protection have been horticultural, mainly flowers of foreign origin. KEPHIS reports that, on average, it takes about 12 months for an application to be processed; this assumes all the paper work is complete when the application is submitted. The process can be faster for plant materials that are already registered in other countries.

---

<sup>3</sup>Source: KEPHIS – USAID ADSP Monitoring and Evaluation Performance document, undate

On the key issues involving the fine-tuning of the Seed Varieties Act, KEPHIS and STAK are in agreement on most of the regulatory changes and both organizations are optimistic that their joint efforts will result in the GOK adopting the suggested changes to the current Seed Varieties Act rather than adopting a more radical redrafted version prepared by KEPHIS and the GOK. If the fine-tuning language is adopted, then KEPHIS and STAK can take credit for facilitating the establishment of an appropriate seed sector regulation framework. KEPHIS expects the GOK to approve the new regulations in 2004.

#### **The Winrock Consortium**

Winrock International joined with Technoserve and Lagrotech to form a consortium of NGO's under ADSP. Winrock and Lagrotech took the leading role in training farmers in the areas of OPV maize, sorghum and bean seed production, soil fertility and crop nutrition, IPM, gender and environmental issues. Technoserve's focus was in training of stockists in business management, marketing and customer service.

Winrock International's component was the largest of the three groups, with approximately 2.18 million USD in funding; Lagrotech funded about 500,000 USD and Technoserve had approximately 318,000 USD in funding. Technoserve completed its work on the Project in December 2002, and Lagrotech continued to provide training and extension services to Project clients through May 2003.

Winrock International, operating under a cooperative agreement no-cost extension, is expected to complete its work on ADSP by mid-February 2004. Of the 60-farmer groups (439 individuals) trained in seed multiplication, about 11 groups developed skill levels that would allow them to produce and sell commercial quality seed. Since the farmer group had no seed marketing experience, Winrock linked the best 4 or 5 farmer groups (CBO's) with seed companies and stockists that could assist them in marketing their product.

Given the lack of marketing skills and resources available to the CBO's, as well as the unique nature of the OPV market, the best path forward for the CBO's that wish to stay in the seed production business is to link these groups with licensed seed companies. The CBO's can then produce seed under contract and the licensed seed company will be responsible for marketing the seed. There is strong interest in this type of relationship by both seed CBO's and commercial firms. Given the complexity of operating a viable commercial seed company, it is unlikely that any of the CBO's is ready at this time to become fully licensed producers and marketers of seed themselves.

Over the course of the Project, Winrock provided over 7300 on-farm person-training sessions<sup>4</sup> to client farmers and developed 544-field demonstration sites that assisted in technology transfer. The Project also provided 273 person-training sessions in seed, soil and fertilization and provided business skills training to 121 smallholder certified seed producers.

Between 2001 and 2003, ADSP's CBO seed farmers produced 196 MT of certified seed valued at 2.97 million KS (about 41,250 USD in aggregate sales, or about 94 USD in mean marginal income per farmer trained in seed production).

Income increased by 60% for households that became active in ADSP activities through a combination of increased crop yields and seed sales.

Stockists are an important link in the transfer of technology and know-how to farmers. To capitalize on this fact, the consortium provided 214 person-training sessions to stockists. They worked with stockists to develop new products, including a re-packaged 2 kg bag of fertilizer that increased sales by cooperating stockists significantly. Winrock also worked to link stockists with seed producing CBO's. The number of CBO's and stockists involved in this activity is

---

<sup>4</sup>Many of Winrock client farmers and stockists attended more than one training session. Each training session lasted from one to two days.

small (in the 5-10 range) but it provides an important link between the farmers and the market and helps to assure income sustainability for these groups.

ADSP's greatest contributions to the broader GOK and USAID policy goals were in: increasing food security, reducing poverty and creating an environment for broad-based economic growth. If ADSP is to be judged against these goals, it can be considered a success.

**Sustainability Technology Development:** The performance of the research system has been seriously hampered by discontinuities in funding for research agencies in the past decade. The situation has improved in recent years and there are reasonable prospects that support will be forthcoming to continue the KARI activities in KSU, horticulture and socio-economics to a fair degree. While the GOK contributions are expected to remain limited, support from USAID and

### **Environmental Compliance**

The Evaluation Team's observation during the mid-term evaluation, current observation and interviews show that the conclusion reached at mid-term evaluation in relation to I.E.E are still being followed. Further, training has been initiated in minimum residue levels and tractability issues as stipulated in international protocols. Several technologies have been identified and/or promoted with support from ADSP that are resistant to pests, notably for maize and a number of horticultural crops.

### **Gender Issues**

Women constitute the majority of active participants in the two primary project areas served by the Winrock Consortium. In contrast, nearly all of the stockists participating in the project are men. Men manage most of the horticultural enterprises receiving assistance from the Project, although women definitely participate and probably do much of the fieldwork. Women are prominent among contact farmers producing flowers.

In the primary Project areas, women have benefited directly from the training, grants and other assistance as well as receiving a significant portion of the proceeds from the sale of certified seed. Women farmers generally benefited from better access to improved inputs that were facilitated by the project. The Winrock Consortium also provided gender training/sensitization to all the participating groups, which was generally well received and internalized by them.

KARI has a policy of gender mainstreaming in all its activities, but in the case of the horticultural activities supported by ADSP, the attention given to gender considerations appears rather limited. Some of the studies have focused on gender issues, but there was no systematic effort to assess the status of gender relations of participants or to provide training in gender sensitization.

## **II. Findings and Recommendations**

### **KARI**

- KARI, KEPHIS and Lagrotech, as well as other private sector firms, should continue to explore ways by which performing CBO's can continue to produce certified OPV seed or otherwise utilize their skills in seed production.
- The private sector is increasingly participating in the multiplication of improved planting materials and if KARI opts to continue in this area, this will place it in direct competition with the private sector. KARI/ ARIS/ KSU needs to develop and implement a business model that complements the private sector rather than placing itself in direct competition with it. KARI (ARIS and KSU) should not compete in the provision of services and products that the private sector can provide.
- ARIS should review the set of activities of ADSP with a view to selectively continuing to promote of KARI technologies. ARIS should also assess the utility of the marketing studies carried out by KARI.
- Efforts by KARI, KEPHIS, STAK to streamline varietal release and certification procedures should continue, giving special attention to the training and licensing of private seed certification agents.
- Stockists should feature prominently in all future efforts to improve technology transfer in Kenya by providing them with additional skills, information services and links with extension service providers.
- Seed should not be distributed free under any circumstances, as this reduces farmer choices and undermines the private input supply system, particularly at the local retail level. Farmers should be provided with choices and vouchers or funds to purchase seed where it is deemed important to render such assistance.
- KARI Socio-Economics Department should consider suspending the current set of marketing studies, as they are of limited utility to producers, participants in the market, policy makers and decisions on resource allocations in KARI.

### **KEPHIS**

- KEPHIS has good top leadership, who understands the important role the organization plays in the agricultural sector and has the vision and leadership skills required to successfully reach the organization's objectives.
- KEPHIS should continue to work in concert with the MOA and private sector at lowering the barriers to entry for new genetic material by developing a more efficient certification system. By imposing a time consuming and costly certification system, it is slowing technology transfer to farmers and making its entire agricultural sector less competitive.
- Certified Seed Production: KEPHIS recently changed regulations so that NPT's for new material can be run for a minimum of one season. This is a step in the right policy direction.
- Plant Variety Protection: Plant breeders do not trust the DUS trial system because it requires that in some cases the breeder supply hybrid parent lines to KEPHIS as part of the testing process. The private sector must above all other issues, be satisfied that their parent lines are secure (cannot be stolen). KEPHIS should develop regulations that allow breeders to conduct DUS testing on their own farms and KEPHIS will only be responsible (so far as is possible under UPVO guidelines) for confirmation of testing protocols and validate the resulting data. It is important to note that to date no breeder has reported that they have had material stolen, so in part this is a problem of perception of KEPHIS by the breeders.
- One important (proposed) step that KEPHIS is taking to speed up seed certification is to allow seed companies to run NPT plots themselves and then have KEPHIS confirm and validate the data resulting from these trials. This would save industry and government time and money and is supported by the Evaluation Team.
- KEPHIS has worked to streamline the bureaucratic process involved in certification of seed. Under the old system, a new plant material would need to be approved by 3 committees before being granted certification.

The committees included the National Performance Trial Committee, the Specialist Variety Release Committee and National Variety Release Committee. Under the new (proposed) regulations, the Specialist Variety Release Committee input has been dropped and applications only need be approved by the National Performance Trial Committee and the National Variety Release Committee.

- Donors need to continue to monitor the KEPHIS – private sector relationship. Some officials in the GOK may view KEPHIS as the policeman overseeing the seed sector. The organization has a very important role to play in the industry, but it would help if more people in government viewed it as a referee – insuring that the game is played by the rules and doing everything in its power to help the sector operate more efficiently in collaborative effort with STAK, private firms and the GOK.
- The private seed sector has suggested that to strengthen its institutional capacity, KEPHIS should increase the number of MS and PhD level plant breeders in the organization. These new managers should be placed in the departments of: Plant Variety Protection, Seed Certification and Phytosanitation. The Evaluation Team agrees in principle that a more skilled workforce would benefit the industry but before new staff is added, a review of the roles and responsibilities of the current KEPHIS management team should be completed.

#### **STAK**

- The Evaluation Team supports the idea that the GOK should adopt the changes in seed industry regulations as proposed by STAK. These changes are a fine-tuning of current regulations and will not require action by Parliament; this is the fastest and most efficient way forward to streamlining the sector's policy environment.
- It is also recommended that KEPHIS, STAK and the MOA continue to cooperate through an ongoing working group that allows for regular dialog between the parties and addresses issues as they develop rather than waiting until a crisis develops before action is taken.
- STAK capacity is limited; with only one full-time professional staff it's not realistic to think about building breadth and depth of institutional capacity. It would be beneficial to STAK as an institution to build in additional capacity through the hiring of one or more professional staff

with a background in the private seed sector and intellectual property/law. This person could be junior to the Executive Officer, but should be given full responsibility to manage specific parts of STAK's domestic and/or regional policy agenda portfolio. The portfolio could include areas such as plant breeder's rights, certification protocol, variety lists, and release protocols. This would allow the Executive Officer to focus on other issues and would improve task continuity.

- On or about end 2003, STAK's Executive Officer was appointed to a Board of Director's position at Kenya Seed Company. This appointment was made by an official of the GOK. The GOK owns a controlling interest in the Kenya Seed Company. Historically, there has been a very close link between STAK and Kenya Seed Company, however this link has weakened over time. In order for STAK to be viewed as independent and free of special interest by its membership as well as the domestic and regional agribusiness community, it must have leadership that is unquestionably independent and free of any hint of bias or prejudice. This matter cuts to the core of STAK's effectiveness as an organization, as well as its sustainability.

- STAK's role in improving access to KARI seed materials: As Kenya's leading private sector seed organization, STAK can play a key role in working with KARI to overcome bottlenecks that have developed in the transfer of KARI seed material to private sector breeders. The current impasse between KARI and some of Kenya's private seed companies over the use or licensing of breeder lines needs immediate attention. The current deadlock is slowing the transfer of technology to farmers. STAK considers this an important issue on its agenda and the Evaluation Team supports the efforts for both STAK and KARI to resolve this matter as soon as possible.

#### **The Winrock Consortium**

- As a follow-up to Winrock's work with the CBO's, USAID should identify an association or NGO involved in the seed or broader agricultural sector that can serve as a link between the seed producing CBO and commercial seed companies. An NGO (involved in the seed sector) or STAK could take up this role, as these organizations already have contacts with most of the private seed companies that operate in Kenya. Once the CBO's are linked with seed companies, it will be up to them to negotiate and renew their seed production contracts on an annual basis.

#### **Sustainability**

- The Evaluation Team endorses KARI's efforts to generate income from the sale of intellectual property rights, breeder seed, pre-basic and basic seed. KARI and its subsidiaries should refrain from engaging in the wholesale or retail selling of certified seed. The activity of selling certified seed should be left to the private sector.

- KARI should focus its sales of horticultural products to commercial nurseries rather than competing in the retail horticultural sector. Closer linkage should be forged with commercial nurseries so that KARI can concentrate efforts on supplying them with mother trees, rootstock, grafting material and, in some cases, wholesale seedlings.

- KARI needs to develop a business model whereby it is not in head-to-head competition with private sector companies. Rather, it needs to make money by using its core strengths of research and development and leave certified seed production and marketing to the private sector.

- KARI should continue to assist other service providers with technology transfer, but take special care to conserve its capacity to continue to generate the technologies that will be needed to meet the future needs of farmers.

#### **Gender**

- Social equity, food security and poverty alleviation considerations should all feature in efforts to commercialize the dissemination of improved agricultural technologies, but the standards required for the success of these efforts should not be seriously compromised in the process.

## **Annex III: Seed Marketing Model: Strategy and Approach**

**Prepared by TechnoServe Inc. –ADSP Team**

**Pauline Mwangi, Harrigan Mukhongo, Joe Mwangangi and Gordon Kunde**

**In consultation with Winrock International-ADSP consortium, KARI and KEPHIS  
June 2001**

### **1.0 Introduction**

Agribusiness Development Support Project (ADSP) is a USAID funded project covering a major part of Nyanza and Eastern provinces. The ADSP goal is to increase private sector participation in agricultural markets in order to increase *effective* demand and *efficient* supply of yield enhancing agricultural inputs to smallholder farmers.

#### **1.1 The Industry**

The Kenyan seed industry is liberalized. Any firm can participate provided it conforms to the set rules and regulations, which are mainly outlined in the Seeds and Plant Varieties Act (Cap 326) of 1991. Currently, there are about 47 seed companies registered, although about fifteen (15) of them are actively operating in the industry.

A closer look indicates that a bigger percentage of these private firms are involved in seed business of non-staple crops such as horticulture (flowers and vegetables), barley, tobacco, coffee, tea, macadamia and pineapple. There are few firms such as Kenya Seed Co. and East Africa Seed Co. that dominate the supply of certified seed of major staple food crops such as maize, beans, sorghum, cassava and potatoes.

There is however a potential market for “Open-pollinated certified seed” (OPVs) in the marginal areas where seed quality and availability is poor. Considering the low market value of OPVs, a localized integrated seed marketing system would contribute substantially towards improving access to improved seeds by smallholder farmers in these marginal areas.

The model for marketing of OPV seed integrates seed multiplication, sorting, cleaning, storage, processing and distribution as a business opportunity for stockists and business oriented CBOs.

### **2.0 The Market**

Information from various sources indicates that there is a high demand for improved, good quality certified seed in the project area.

#### **2.1 Seed Industry Analysis 2000 Findings**

According to the Seed Industry Analysis (2001) undertaken by ADSP, in response to local farmer needs, it was recommended that seeds should be produced and marketed within local areas. Such community-based seed production and marketing would increase the use of improved seed and income to local farmers. This would also reduce the cost of seed distribution.

## **2.2 Seed Multiplication and Demonstration under ADSP**

Demonstration results and farmer ranking indicated ADSP (KARI) varieties preference. All seeds multiplied under ADSP have been sold with demand exceeding supply. Primary buyers include, farmers within the production area, NGOs who require improved seeds for distribution, seed merchants who require good certified seeds for marketing, ADSP for setting up of more demonstration plots and on-farm trials to transfer technology to farmers.

ADSP as has activated this demand through setting up demonstration plots strategically located in all the districts covered by the project. During the life of the project, ADSP will also be a source of demand for the OPVs for seed multiplication and demonstration farms.

## **2.3 Preliminary Market Survey Findings**

- ◆ All the organizations interviewed agreed that the strategy to produce and market seeds locally would be good for the farmer to access quality seeds at a cheaper price.
- ◆ That farmers have had problems in accessing seeds at the right time when the season begins
- ◆ That they would be interested in undertaking the seed marketing activity.
- ◆ Their only fear was that they should be assisted by the project initially through training and credit.

## **2.4 ADSP Baseline Survey**

The recently completed ADSP baseline survey indicated 82% of farmers interviewed using local maize seed as opposed to certified or other improved varieties. The reasons given for the low use being high price, poor availability and accessibility and lack of information.

## **3.0 Business Opportunity**

ADSP is currently supporting sixty-nine (69) seed multiplication farmers with a total area of forty-one (41) hectares. The expected production of seed by June 2001 is forty-three (43) tons of assorted beans, maize sorghum and cowpeas varieties. The acreage and seed volumes can increased fast as more farmers realize the benefits of seed multiplication. ADSP continues to recruit farmers and train them on the modalities of seed multiplication.<sup>1</sup>

Several localized OPV distribution channels have been identified. One of the channels considered in this case is the seed farmer selling to other farmers in the area of multiplication. The second is selling the seeds to NGOs who sell or distribute free-of- charge to the farmers they support.

The third channel that is proposed and considered more sustainable is setting up small-scale seed enterprises. This entails incorporating entrepreneurs who would bulk, process, package and market the seeds as a business opportunity.

The proposed marketing strategy borrows a lot from Dr. Adrian Mukhebi's ADSP consultancy recommendations and subsequent discussions with ADSP consortium.

---

<sup>1</sup> *\*Refer second year ADSP annual report pg. 12*

This opportunity will be promoted among stockists and CBOs already involved in distribution of yield-enhancing agri-inputs.

#### 4.0 Proposed Marketing Strategy and Approach

- ◆ The seeds are packaged in printed 2Kg bags with a KARI Seed Unit license and KEPHIS certification.
- ◆ We propose to position ADSP seed processing activities in the project area far from major seed companies. The seed will be treated using Vitavax (colored red).
- ◆ The packaged seeds will be marketed through well-trained stockists, CBOs and NGOs.
- ◆ Demonstration fields will be used to promote the use of quality seed.
- ◆ In addition, brochures and posters will be used to promoting the use of the quality seed.
- ◆ ADSP will work closely with MoARD, KARI, KEPHIS, NGO and farmers to implement promotion activities.

#### 4.1 Marketing Channels

<b>Role of Farmers, stokists and CBOs</b>	<b>Users and Dealers in Seed</b>
<b>Multiplication</b>	<b>Farmers</b>
<b>Processing</b>	<b>CBOs</b>
<b>Packaging</b>	<b>Stockists</b>
<b>Marketing</b>	<b>NGOs and seed companies*</b>

\*Seed will be sold to NGOs only when there is surplus after saturating the first three distribution channels. In this case, the seed merchant would have to pay royalties to KARI.

### 5.0 TECHNICAL ANALYSIS

#### 5.1. Seed Production and Cleaning

Currently seed production and selection in ADSP is at three levels: Individual progressive farmers (with and without irrigation), village seed farmer groups and by CBOs. The preference for the project is to deal with farmers groups and CBOs that serve many local farmers in the project area. ADSP will train seed farmers on cleaning and sorting skills.

#### 5.2. Seed Storage, Treatment Weighing & Packaging

Seed enterprises (stockists and CBOs) that qualify to process seed will be trained accordingly. The processing procedure will be supervised by KEPHIS and will include storage, chemical treatment, weighing and packaging in printed 2Kg bags. This process will take place at the stockists/CBOs site. The processing premises and printed bags will be approved by KEPHIS. All possible cost cutting avenues will be exploited to ensure that the farmer gets the seeds at as low a price as possible.

### **5.3. Equipment for Processing Seed**

Seed mixing drum:

This is a metallic drum with fins inside to ensure proper mixing. The drum will be supplied to the seed merchants on credit to be paid back in three installments. The cost of each seed-mixing drum is approximately Kshs.15, 000.

Sealing Machine:

This machine operates using electricity that is operated manually. It is estimated to cost Ksh 8,800. Each seed enterprise will purchase one sealing machines for its use.

Weighing scale:

Most of the stockists and CBOs already have a weighing scale. However, in most cases, the scales have not been calibrated in along time. The project will ensure that the scales used to weigh seeds are calibrated in order measure 2Kg of seed accurately. Information on availability and prices of weighing scales will be provided by ADSP.

## **6.0 Risks**

The major risk is that a number of the seed varieties we are promoting are fairly new and have not undergone enough field-testing to establish appropriate agronomic practices for various regions.

## **7.0 Institutional Roles**

### **7.1 TechnoServe**

TechnoServe will undertake the feasibility analysis and subsequently promote the business opportunity. TNS will take the lead in the marketing of seed.

The ADSP marketing team will carry out an initial rapid market survey to identify farmers, stockists and CBOs interested in the seed models described above and to collect information useful for developing seed marketing enterprises. Demonstrations results will be used to determine varieties preferred by farmers.

Seed enterprises (stockists and CBOs) will be assisted to come up with basic business plans. The business plan will detail the cost structure, financing and marketing for each enterprise.

ADSP marketing team will on an on-going basis maintain a database of seed requirements from NGOs, seed companies, etc. This information will be shared with the partners in seed production and marketing.

Progressive farmers who are more interested in producing seed for seed companies as opposed to the community models will be linked to such seed companies.

Promotion materials such as posters, leaflets and brochures will be developed by ADSP in collaboration with KARI to advertise the seed varieties that the project is promoting.

## **7.2 Lagrotech**

Lagrotech will continue working with farmers for increased production of high quality certified seeds to meet envisaged demand. ADSP field staff will work so closely with KEPHIS on the ground to train farmers in the seed multiplication and processing modalities.

Success of new KARI varieties will highly depend on successful dissemination of information received through demonstrations and field trials. The field team will set up demonstration plots as away of promoting the seed varieties being marketed.

Stockists will need to be encouraged to set demonstration plots in collaboration with ADSP extension team to popularize varieties.

The agronomy team will compile materials to be used for production of educational/extension and promotional leaflets and brochures, test the brochures and constantly give feedback on suggestions of improvement.

## **7.3 KARI**

KARI will supply good quality basic seeds to the project farmers. Since the project is using KARI license, the contact person at KARI will be responsible for ensuring that ADSP stays within the laws of the land on seed production and marketing. KARI will provide relevant extension materials for reproduction to promote KARI varieties through the project.

## **7.4 KEPHIS**

Will undertake a crucial duty of field/ after harvest inspection and certification to ensure that the produced seeds are of high quality. KEPHIS will highly be involved through the seed packaging process to ensure good quality seed at the time of packaging. KEPHIS will also assist ADSP in facilitating training for farmers and stockists/CBOs on quality control both on the farm and off-farm.

## **7.5 Winrock International**

Winrock will ensure good relations between ADSP partners (Lagrotech, TechnoServe, KARI, KEPHIS, GoK etc.) and be the coordinate all activities related to seed production, processing and marketing. Winrock will be instrumental in linking the production and marketing activities to increase the efficiency of information exchange among the partners. Winrock will facilitate the establishment of an efficient seed production and marketing system.

## **8.0. Market Survey**

A market survey was undertaken to identify potential stockists/CBOs that would be interested in contracting seed multiplication, processing and marketing the seed.

### **8.1. Survey Methodology**

The survey involved informal interviews with a number of stockists/CBOs. The interviewer explained the envisaged seed-marketing model where the stockist will have to buy seeds from

farmers, treat and package for marketing to farmers or other selling outlets. Discussions hence ensued to get a feel of what they stockists/CBOs thought of the strategy.

## 8.2. Survey Findings

Table 1 below shows the stockists/CBOs that were identified on the basis of their market coverage and financial capability to invest in the seed processing and marketing. Stockists already involved in seed wholesaling agri-inputs were preferred.

### Stockists/CBOs Identified for Seed Enterprises

Stockist/CBO	Activities
Siaya Farmers Center	A leading agri-inputs shop in Siaya town headed towards wholesaling. Has already been involved in selling ADSP seeds packaged by Lagrotech under KARI seed Unit license.
Madiany Community Development Project (MCDP)	A community based organization (CBO) collaborating with ADSP in Bondo. Operates in the whole of Madiany division with various projects but mainly in agriculture with shared objective of transferring yield-enhancing technologies.
Asors	A wholesaling agri-inputs shop in Homa Bay with supplies getting into the neighboring Suba district.
Sustainable Community Oriented Development Program (SCODP)	A Sega (Siaya) based CBO with a chain of 20 agri-input outlets. Highly involved in promoting agri-yield enhancing technologies in western Kenya and now spreading into eastern region covering the project.
Catholic Diocese Development Office-Homa Bay	Promoting sustainable agriculture in the whole Diocese.
Nyakach Community development Association (NYACODA)	A CBO in Nyando district co-coordinating development activities spreading through agriculture, fishing, bee keeping etc.
K.K. Mkulima	A major stockist in Machakos town operating as a retailer/wholesaler
Ukambani Christian Community Services (UCCS)	A community development organization covering a major part of the eastern project area. Also involved in seed multiplication. Have multiplied seeds and sold to the project.
Wamunyu Farmers Co-operative Society (WFCS)	

- ◆ All the organizations interviewed agreed that the strategy to produce and market seeds locally would be good for the farmer to access quality seeds at a cheaper price.
- ◆ That farmers have had problems in accessing seeds at the right time when the season begins
- ◆ That they would be interested in undertaking the seed marketing activity.
- ◆ Their only fear was that they should be assisted by the project initially through training and credit.

These stockists/CBOs were considered for other sub-grantee status in 2002.

**Annex IV: Sales Volume of Certified and Packaged Seed by  
Stockists: October-December 2001**

Name of Stockist	Location	DLC-1 Sup.	Bal.	KC B Sup	Bal	KB-1 Sup	Bal	KB-9 Sup.	Ba l.	Sup	Kat-X-56 Bal.
Ngelani Chemicals	Machakos	2056		792		168		240			
Kay Kay Mkulima	Machakos	200	96	192	86	129 6	356	1560	71 4	624	0
Kaiti Agrovet	Wote	48		48							
Mae-Makindu	Makindu	24		24		24					
Makueni Agrovet	Wote	24		24							
Kitundu Agrovet	Kitui	168									
Isaac Maingi	Athi			24		24					
Tana Farm Supplies	Matuu	312	308	24	24						
Rahisi Agrovet-Matuu	Matuu	24	24	24	22						
Mbolah – Matuu	Matuu			24							
Mbola Hardware-Kithima	Kithima	24		48							
Petna Chemicals	Sultan Hamud	144								24	
Alimo Agrovet	Sultan Hamud			24	20						
Njiru Stores	Sultan Hamud	48		48							
Sultan Agrovet	Sultan Hamud	24		24							
Thome Hardware		72		48		48		48			
Katua Agrovet	Kitui	264		48		240		216		120	
KARI-Masongaleni	Masongaleni	168		168		96		72			
Angirika Ltd. - Chuka	Chuka	408				192					
Ken Hardware		24		24		96		72			
Jambo Hardware				24				48			
Simom Munyilu		24				48					
Wikase Self Help		120		120				96			
Munyalo Munyao		24		24		24					
Kithimani Agrovet	Kitui	24	0								
Katulini Group	Katulini					48					
Peter Kingoo						24					
UCCS	Wamunyu	24		24		96					
John Mile				48				24			
Alency Ent. – Kitui	Kitui	288	132	148	104	384	46	72	8	72	40

Discount Stores - Chuka	Chuka	240		24		72		24		72	
SCODP – Nbi	Nairobi	24				48		72		72	
SCODP – Siaya	Siaya	96				144					
Wamunyu F.C.S	Wamunyu	4									
Lagrotech Shop	Kisumu	72				120		120			
C.Bo Agrib - Darajambili	Darajambili	24									
Abibi Agrovet - Usenge	Usenge					4					
Jacope Agrovet - Ndori	Ndori					20					
Ndere Stockist	Ndere	8									
Silver Stores	Nyadorera	24				24				24	
Rads Agrovet	Bondo	24		24		24					
Siaya Farmers Centre	Siaya	256	96	48	0	72	0				
Western Agrovet-Masii	Masii	104		72				72			
Wakulima Ent.-Kikima	Kikima										
Believers Farm Store	Siaya					24		24			
Times And Seasons	Kibwezi	192				24		24		24	
Kibwezi Enterprises	Kibwezi			72		24		24		24	
G.K. Cycle Spares		72		48		264				24	
Dik Dik Enterprises		24				24					
Asors	Homabay					700				100	
Kijana Hardware	Matuu			24	20						
<b>Total</b>		<b>5700</b>	<b>656</b>	<b>2308</b>	<b>276</b>	<b>4396</b>	<b>402</b>	<b>2808</b>	<b>722</b>	<b>1180</b>	<b>40</b>

Sup. = Supplied  
DLC Dryland composite-maize  
KCB Katumani Composite maize  
KB1 Katumani Bean 1  
KB1 Katumani Bean 9  
Katx 56 Katumani x 56 Bean