



UNIVERSITY OF NAIROBI
COLLEGE OF AGRICULTURE AND VETERINARY SCIENCES

Grant No.: 2013 PASS 017

**PROJECT TITLE: ESTABLISHMENT OF SEED ENTERPRISE MANAGEMENT
INSTITUTE AT UNIVERSITY OF NAIROBI, COLLEGE OF AGRICULTURE
AND VETERINARY SCIENCES**

SEMIs PHASE II



SEMIs
GROWING THE
SEED INDUSTRY
IN AFRICA

**4TH YEAR NARRATIVE AND
FINANCIAL REPORT**

JANUARY 2014-DECEMBER 2014

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ACRONYMS AND ABBREVIATIONS

ACTESA	-	Alliance for Commodity Trade in Eastern and Southern Africa
AGRA	-	Alliance for a Green Revolution in Africa
CAVS	-	College of Agriculture and Veterinary Sciences
COMESA	-	Common Market for Eastern and Southern Africa
ISU	-	Iowa States University
KEPHIS	-	Kenya Plant Health Inspectorate Service
PASS	-	Programme for Africa's Seed Systems
SEMIs	-	Seed Enterprise Management Institute
STAK	-	Seed Traders Association of Kenya
UoN	-	University of Nairobi

Executive Summary

Seed Enterprise Management Institute (SEMI) project is supported by the Alliance for a Green Revolution in Africa (AGRA) with a total funding of USD 4,495,432 during the three-year phase I (2010-2013) and received a further funding extension of USD 1,842,192 in Phase II (2014-2016). The project management team has Prof. A.W. Mwang'ombe (Principal Investigator), Prof. F. Olubayo and Dr. Kiarie Njoroge. The main partners in SEMI are the University of Nairobi as the implementing institution, Alliance for a Green Revolution in Africa (AGRA), International Maize and Wheat Improvement Center (CIMMYT), Iowa State University (ISU), Kenya Agricultural and Livestock Research Organization (KALRO), Kenya Plant Health Inspectorate Institute (KEPHIS), Private and Public Seed companies and international Consultants

This report presents activities conducted by Seed Enterprise Management Institute (SEMI) in the year 2014. SEMI held seven courses in 2014 attracting 143 participants from Eastern, Western and southern African countries. These participants represented 73 different seed companies in Sub-Saharan Africa. The courses included seed production (23 participants), seed drying processing and storage (23 participants), seed business management (19 participants), seed marketing (20 participants), seed quality assurance and enterprise quality management (19 participants), National Plant Protection Organizations and seed quality regulators (21 participants), and field production field diagnostics (18 participants).

The participants were also engaged in laboratory practicals and field excursions. They visited KEPHIS seed quality assurance centre in Nakuru County and a seed grower in the same region. Besides that, they travelled to Machakos to learn processing activities from Dryland Seed Company and Kenya Seed Company in Nairobi. All practical sessions were held within CAVS.

SEMI seed processing facility is complete and seed processing units comprising air-screen cleaner, gravity separator, seed coating machine and packaging machine are housed in the facility. Discussion on installation of the equipments is ongoing and SEMI has identified a local consultant company with expertise cum experience on installation. The established Seed Processing and Seed Quality Testing facility and the University Seed Unit (UNISEED) will work closely with commercial seed companies in an effort to inculcate good practical and hands-on real life experiences to trainees. UNISEED is registered under KEPHIS and its role is to maintain the seed varieties produced by breeders and licensed varieties, and to produce and promote the non-licensed released varieties. Second phase of SEMI construction is ongoing for which contractors are doing final finishes and fittings for laboratories and offices. It is anticipated that by end May 2015 the building will be officially handed over to the Institute.

Foundation seed for six varieties of beans are also produced by SEMIs at Kibwezi and Kabete field stations. The bean varieties are Kenya Wonder, Kenya Sugar Bean, Kenya Red Kidney, Super Roscoco, Miezi Mbili, and Kabete Super. In Kabete, single lines and single plots of the bean varieties are maintained while bulking of the varieties is done at Kibwezi Field Station. Foundation seeds of the bean varieties produced in 2014 was 4.30 tonnes.

PART I: NARRATIVE REPORT

1. INTRODUCTION

The Seed Enterprise Management Institute (SEMIs) project is based at the College of Agriculture and Veterinary Sciences (CAVS), University of Nairobi (UoN) and is funded by Alliance for a Green Revolution in Africa (AGRA). It was started so as to build capacity for the seed industry personnel in sub-Saharan Africa with the objective of helping seed companies in Africa to produce more seed. The driving force is that one of the major challenges for seed companies all over Africa is technical know-how on seed production, processing, marketing and quality maintenance.

There are four basic types of seed demand. The first is emergency seed demand which is caused by environmental calamities or civil conflict, as a result of which harvests are insufficient to provide seed stocks for the next season. The second category is poverty seed demand where seed shortages are caused by a poor harvest, in turn due to various reasons such as labor shortage, illness, shortage of land or other resources. The third category of seed demand relates to seed quality and is usually found in relatively stable, often commercial, crop production systems in which fresh seed is acquired frequently for instance hybrid seeds. Last category is demand for new varieties.

A big proportion of farmers in Sub-Saharan Africa are becoming more commercially oriented, producing for the market thus faces a demand for quality seeds. The demand has been continuous and supported by their purchasing power which has led to the development of commercial seed sector providers including seed companies. This has seen the number of registered seed merchants, a good proportion of which produce certified seed in Kenya rise to over 70. However, much of the formal seed sector market is controlled by the Kenya Seed Company (KSC), taking about two thirds of the seed market. The formal seed sector accounts for only about one quarter of the region's seed needs, the remainder coming from farmer saved seed. This proves utilization of improved seeds in many African countries such as Kenya to be low. Thus Incentives are needed for those seed companies already in operation to scale up production and for the development of new seed companies in order to meet the seed demand in the continent.

A major challenge facing seed companies, apart from financial access is seed systems knowledge. This is crucial knowledge that ensures that the seed enterprise is run profitably and sustainably. To fill this crucial gap on seed systems knowledge and improve seed production in Africa, AGRA through the University of Nairobi set up the Seed Enterprise management Institute (SEMIs) whose main goal is to provide capacity in the form of training to the seed industry in sub-Saharan Africa. In order to achieve this goal, SEMIs offers short courses in seed production, seed drying, processing and storage, seed marketing, seed business management

and seed quality assurance and seed enterprise quality management for seed company practitioners. These courses are specifically designed to impart seed company personnel with knowledge and skills on how to run a profitable seed enterprise.

Table 1.1: Trained personnel- from 2010 to 2014

Course	2010	2011	2012	2013	2014	Total Per Course
Seed Production	29	27	30	0	23	109
Seed Drying Processing and Storage	31	28	30	0	23	112
Seed Business Management	29	26	29	25	19	128
Seed Marketing	28	25	30	27	20	130
Seed Quality Assurance	30					30
Seed Legislation and Accreditation	25					25
Seed Quality Assurance and seed Enterprise Quality Management		26	29	0	19	74
National Plant Protection Organisations and Seed Quality Regulators					21	21
Field Production Field Diagnostics					18	18
Total(Yearly)	172	132	148	52	143	647

To date, over 600 seed company personnel from over 40 different seed companies in 17 African countries have received training at SEMIs. The beneficiary countries include Mali, Burkina Faso, Sierra Leone, Liberia, Ghana, Nigeria, Zambia, Zimbabwe, Niger, Ethiopia, Uganda, Kenya, Rwanda, Tanzania, Malawi, South Sudan and Mozambique. The trained seed company personnel have helped seed companies all over sub-Saharan Africa to upscale production of high quality seed making the seed more available to farmers thus improving food and nutritional security.

2. REPORT ON CONSULTATIVE WORKSHOP FOR CURRICULUM REVIEW OF SEMIs COURSES

WORKSHOP DATES: 2ND TO 6TH JULY 2014

VENUE: GREAT RIFT VALLEY LODGE, NAIVASHA

2.1 Opening of the Workshop - By Prof. A.W. Mwang'ombe

The Principal CAVS, Prof. Agnes Mwang'ombe thanked AGRA for the financial support. She also thanked all the participants for continued support to SEMIs and finding time to attend the curriculum review workshop. The purpose of the continuous curriculum review is to ensure that the training is up to date and that it addresses the emerging challenges in the seed industry. This makes the short courses remain relevant and practical. Since provision is the foundation of food production, the SEMIs capacity building initiative directly impacts on agriculture by increasing productivity for achievement of food security in Africa.

Table 2.1: Workshop Participants

	Name	Designation	Institution
1	Prof. A. W. Mwang'ombe	Principal-CAVS, PI-SEMIs, Plant pathologist	University of Nairobi, College of Agriculture & Veterinary Sciences
2	Dr. Rufaro Madakadze	AGRA Representative	Alliance for a Green Revolution in Africa (AGRA)
3	Prof. F. M. Olubayo	Agricultural Entomologist	University of Nairobi, College of Agriculture & Veterinary Sciences
4	Prof. Kiarie Njoroge	Plant Breeder	University of Nairobi, College of Agriculture & Veterinary Sciences
5	Prof. P. M. Kimani	Plant Breeder	University of Nairobi, College of Agriculture & Veterinary Sciences
6	Prof. James Muthomi	Plant Pathologist	University of Nairobi, College of Agriculture & Veterinary Sciences
7	Prof. Rama Narla	Plant pathologist	University of Nairobi, College of Agriculture & Veterinary Sciences
8	Dr. Dora Kilalo	Agricultural Entomologist	University of Nairobi, College of Agriculture & Veterinary Sciences
9	Dr. Titus Magomere	Plant Breeder/Biotechnology	University of Nairobi, College of Agriculture & Veterinary Sciences
10	Dr. Rose Nyikal	Agricultural Economist	University of Nairobi, College of Agriculture & Veterinary Sciences
11	Prof. G. Chemining'wa	Agronomist	University of Nairobi, College of Agriculture & Veterinary Sciences
12	Dr. Onyango Mbuge	Agricultural Engineer	University of Nairobi, Department of Environmental & Biosystems Engineering

13	Eng. Joakim Mutua	Agricultural Engineer	University of Nairobi, Department of Environmental & Biosystems Engineering
14	Dr. Charles Orek	Crop Protection/ Plant breeder	University of Nairobi, SEMIs
15	Prof. Evans Aosa	Strategic Management	University of Nairobi, School of Business
16	Ms. Aline O'connor	Private Consultant	Private Consultant
17	Dr. Justus Munyoki	School of Business	University of Nairobi, School of Business
18	Mr. Herik Ondigo	School of Business	University of Nairobi, School of Business
19	Dr. Raymond Musyoka	School of Business	University of Nairobi, School of Business
20	Dr. Lawrence Ragwa	Plant Breeder	Kenya Agricultural Research Institute (KARI)
21	Dr. Teresio Riungu	Plant Breeder	Kenya Agricultural Research Institute (KARI)
22	Dr. John Kimani	Plant Breeder	Kenya Agricultural Research Institute (KARI)
23	Mr. Zakayo Kinyanjui	Seed quality/ plant variety	Kenya Plant Health Inspectorate Service (KEPHIS)
24	Dr. Evans Sikinyi	Seed specialist	STAK
25	Dr. David Ndungu	Plant Breeder	University of Nairobi, SEMIs, CAVS
26	Mr. Peter Mulwa	ICT	University of Nairobi, College of Agriculture & Veterinary Sciences
27	Florence Kiwunja	Administrative Asst.	University of Nairobi, SEMIs-College of Agriculture & Veterinary Sciences

2.2 Project overview – By Prof. Florence Olubayo

Presented an overview of the Seed Enterprise Management Institute (SEMIs) project. The overall goal of the project is to eradicate food and nutrition insecurity through capacity building of seed actors through enhanced production of quality and affordable seed. The specific objectives are:

- i. To produce seed production and marketing management expertise in Sub-Saharan Africa (SSA) region

- ii. To train seed industry practitioners on the best practices to efficiently produce adequate high quality seed for farmers.
- iii. To enhance production of seed of improved varieties for the SSA through efficient production, marketing and good distribution.
- iv. To strengthen the capacity of the SSA region to train on seed production and marketing management strategies through enhanced technology.
- v. To develop a regional capacity to facilitate information sharing on seed issues and related disciplines in SSA.

Table 2.2: Short courses currently offered at SEMIs

Course	Main Facilitators
Seed Production	UoN/CIMMYT/KARI/KEPHIS, Leldet, Kenya Seed, KEPHIS-Dr. John MacRobert, Dr. Kiarie
Seed Drying Processing and Storage	UoN/IOWA STATE UNIVERSITY/KARI/KEPHIS/SEED COMPANIES-Dryland seed company, KARI Katumani; Dr. Shyy
Seed Business Management	UoN/SCH. OF BUSINESS, ALINE O'CONNOR FUNK, DILIP GOKHALE, SEED COMPANIES
Seed Marketing	UoN/SCH. OF BUSINESS, CONSULTANTS, DRYLAND SEED COMPANY, LEDET
Seed Quality Assurance And Seed Enterprise Quality Management	UoN/ISU/KEPHIS/KARI/SEED COMPANIES-Dr. J. Cortes, Mike Stahr
Seed Production Field Diagnostic	UON/KEPHIS/KARI/Seed companies (New for 2014)
Plant Protection Organizations (NPPO's) Quality Regulators	UON/KEPHIS/KARI/Seed companies (New for 2014)

Long Term courses in Seed Technology and Business

Long term curricula have been developed for a number of programmes including MSc.-Seed Technology and Business which was rolled out in September 2014. Other programmes developed and expected to be rolled out in September 2015 are:

- i. Certificate-Seed Technology and Business
- ii. Diploma -Seed Technology and Business
- iii. Post-graduate Diploma-Seed Technology and Business

Professor Olubayo also presented a review of the project activities conducted in 2013 and the project plan for 2014.

Table 2.3: Proposed Dates for SEMIs Seed Courses in 2014

Course	Suggested Dates
Seed Production	18-24 th May, 2014
Seed Drying, Processing and Storage	25-31 st May, 2014
Seed Business Management	20-26 th July, 2014
Seed Marketing	27 th July-02 August, 2014
Seed Quality Assurance and Seed Enterprise Quality Management	10-23 rd August 2014
Plant Protection Organizations (NPPO's) Quality Regulators	24-30 th August 2014
SEMIs West Africa Training	7 th -28 th September 2014
Seed Production Field Diagnostic	16-23 rd November, 2014

2.3 WORKSHOP OBJECTIVES

The first objective of the workshop was to review the curricula and delivery programmes of the 5 short courses:

- i. Seed Business Management
- ii. Seed Marketing
- iii. Seed Production
- iv. Seed Drying, Processing and Storage
- v. Seed Quality Assurance and seed Enterprise Quality management

The second objective of the workshop was to develop curricula for two new short courses:

- i. Seed Production Field Diagnostics course and
- ii. Plant Protection Organizations Quality Regulations Course

2.4 WAY FORWARD

The following achievements were obtained after the workshop:

- Updated curricula of all the five courses; Seed Business Management, Seed Marketing, Seed Production, Seed Drying, Processing and Storage, and Seed Quality Assurance and Seed Enterprise management was developed.

- Curricula for two new courses; Seed Production Field Diagnostics course and Plant Protection Organizations Quality Regulations Course developed.
- Updated day plans/programmes for all the five courses.
- Dates for the 2014 seed courses firmed up.



Group Photographs



Principal CAVS opens the workshop



AGRA Representative



Chairman, Plant Science & Crop Protection



Workshop plenary session



Some of the senior experts at the workshop

3. PARTICIPATION IN INTERNATIONAL AND NATIONAL FORUMS IN 2014

3.1 Soil testing results launch and Presidential Fertilizer Flag off

SEMI, exhibiting on University of Nairobi stand participated in the National soil testing results launch and fertilizer flag off on the 18th of February, 2014 at Egerton University, Njoro. The occasion was graced by his Excellency the president, Uhuru Kenyatta and the deputy president, Hon. William Ruto. It was specifically meant to launch soil testing results conducted in 147 sub-counties across the country to establish soil health status to avoid blanket fertilizer recommendations and enhance use of specific recommendations. The event was also used to flag-off supply of government subsidized fertilizers to farmers.

Other dignitaries included the cabinet secretary for agriculture, Felix Koskey and other cabinet secretaries, County governors, Vice Chancellor, Egerton University and principal secretaries. Apart from Egerton University community, farmers from the across the county took time to acquaint themselves with newly released University of Nairobi bean Varieties and use of Biofix at the university stand. According the Dr. Kinama from CAVS, the University also attracted great interest from students, who wanted to know more about the university academic programmes which were on display at the UON Stand. The University was represented by Dr. Kinama Josiah and Dr. D. K. Ndung'u from CAVS.



Dr. J. Kinama engages students at the university stand



Dr. D.K. Ndung'u explains the benefits of the newly released UON bean varieties

3.2 Annual STAK Exhibition, 2014

The 2014 STAK exhibition was held in September at Kenyatta University. SEMI was represented by Dr. Josiah Kinama and Ms. Rosbena Cherono where once again the exhibition of its products and courses was a success.



Ms. Cheronu, advising farmers at SEMIs stand during the 2014 STAK exhibition

3.3 The 2014 Nairobi International Trade Fair Show

The Nairobi International Trade Fair, themed: “Enhancing Technology in Agriculture and Industry for Food Security and National Growth,” opened its doors on the 29th of September 2014 at the Jamhuri Park show grounds in Nairobi, Kenya. The seven day show which was organized by the Agricultural Society of Kenya (ASK). In attendance were regional, continental and global exhibitors from Kenya and many other countries including; India, Japan.



The chancellor University of Nairobi, Dr. Vijoo Rattansi, third left, visits the SEMIs Stand at the ASK Nairobi show

Standing tall in the densely populated show grounds was the University of Nairobi stand which housed SEMIs among other programmes under the university. The Institute displayed its

achievements in seed variety release and also gave opportunity to members of the public to learn its training programmes.

3.4 Launch of COMESA Seed Regulations

The Common Market for Eastern and Southern Africa (COMESA) through its organ, Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA), launched the seed trade harmonization regulations. The workshop, held on Monday 16 March 2015 in Nairobi, Kenya was aimed at harmonizing phytosanitary measures for seed in the region in order to facilitate the safe movement of seed within Member States. Speaking at the ceremony, Dr. Argent Chuula, the ACTESA CEO said that harmonizing the seed trade regulations would encourage investment in seed business, increase access to existing varieties and stimulate breeding and availability of improved seed varieties for all farmers in the region.

The workshop had in attendance personnel from seed companies in Kenya, KEPHIS, STAK, Ministry of Agriculture, KARLO and other key players in the seed sector. SEMIs was represented by Prof. Agnes Mwang'ombe, Prof. Paul Kimani, Prof. Kiarie Njoroge and Mr. Daniel Wasonga.

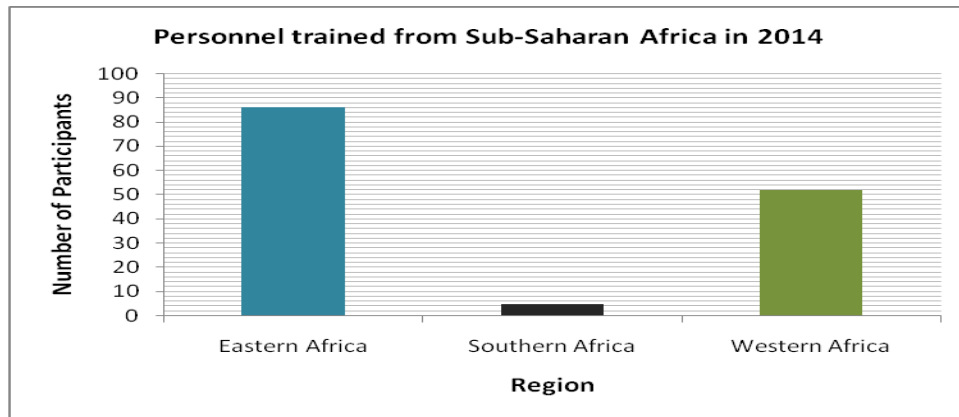
Prof. Agnes Mwang'ombe, the Principal CAVS urged the COMESA planning committee to refer personnel targeted for oncoming capacity building to the University of Nairobi. She added that SEMIs is running short seed courses which fits well on personnel's busy work schedule and admissions for Masters and PhD programmes, she said, was open for applications. Mr. Daniel Wasonga, the SEMIs Project Manager on the other hand highlighted on SEMIs 2015 seed courses which the participants could enroll to be trained. SEMIs banner was strategically placed at the podium where all participants could see and later received brochures with training programmes.



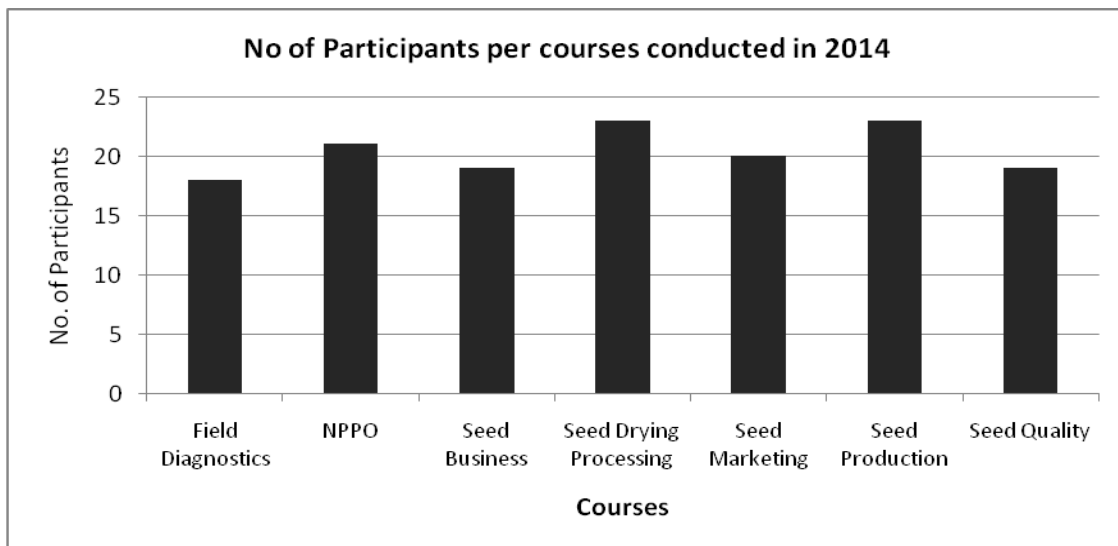
Prof. Mwang'ombe, among other delegates who attended the official launch of the COMESA Seed Regulations launch at Hilton Hotel, Nairobi

4 SEMIS COURSES IN 2014

A total of seven courses were conducted in 2014. These courses were; seed production, seed drying processing and storage, seed business management, seed marketing, seed quality assurance and seed enterprise quality management, National Plant Protection Organizations and Seed Quality Regulators (NPPOs & SQR), and seed production field diagnostics. In overall, 143 participants representing 73 seed companies attended the courses with 86 participants coming from Eastern African, 52 participants coming from West Africa and 5 participants coming from Southern Africa.



Among the 143 participants who attended the courses, 23 participants were trained on seed production and another 23 trained on seed drying, processing and storage. 21 participants attended NPPO course, 20 participants were trained on seed marketing and 19 participants trained on seed business management. Another 19 participants were trained on seed quality while 18 participants attended seed production field diagnostics.



4.1 Seed Production

Seed production course was held from 25th to 31st May, 2014. The main facilitator for the course was Prof. Kiarie Njoroge of CAVS, helped by KARI and KEPHIS staff. Participants to this course came from Ethiopia, Uganda, Zambia, Tanzania, Rwanda, South Sudan, Sierra Leone, Burkina Faso, Nigeria and Mozambique. Participants to this seed production course also travelled to KEPHIS Nakuru seed quality assurance centre and visited a seed grower in Nakuru County in the rift Valley. Participants attested that the field and laboratory demonstrations were educative and helped them to link theory and practice in seed production.



Prof. Kiarie taking participants through practical bean production at the demo site in CAVS



Practicals on data spreadsheet ongoing at the computer laboratory in CAVS



Visit to KEPHIS Lanet- participants getting first hand information on seed selection from KEPHIS staff



Prof. Mwang'ombe with Participants of seed production after completing training in CAVS

Table 4.1: Details of Participants who attended the 2014 seed production course

No.	Participants name	Gender	Position in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Mohammed Shariif Ali	Male	Production Manager	SOMALI REGIONAL SEED ENTERPRISE	Ethiopia	Eastern Africa
2	Alex Abili	Male	Production Manager	OTIS GARDEN SEED COMPANY	Uganda	Eastern Africa
3	Emmah Sekelechi	Female	Production Manager	STEWARD GLOBE LTD	Zambia	Southern Africa
4	Alinanaine Shimwela	Male	Production Manager	HIGHLAND SEED GROWERS	Tanzania	Eastern Africa
5	Ojok Walter Ross	Male	Production Manager	EQUATOR	Uganda	Eastern Africa
6	Najim Mnkombe	Male	Production Manager	NAMBURI AGRICULTURAL COMPANY	Tanzania	Eastern Africa
7	Adolf Kyaruzi	Male	Production Manager	SUBA AGRO TRADING AND ENG. CO. LTD.	Tanzania	Eastern Africa
8	Huruma Chaula	Male	Production Manager	TROPICAL SEED COMPANY	Tanzania	Eastern Africa
9	Ernai Kiwele	Male	Production Manager	BEULA SEED	Tanzania	Eastern Africa
10	John Ngoma	Male	Production Manager	TANSEED INTERNATIONAL	Tanzania	Eastern Africa
11	Felicien Ngendahimana	Male	Production Manager	SABBATH YEAR AGRICULTURAL ECONOMIC DEVELOPMENT (SYAED)	Rwanda	Eastern Africa
12	Tartizio Wandu Bimo	Male	Production Manager	NVUE FARMING ADVISORY AND TRAINING SERVICES LTD	South sudan	Eastern Africa
13	Robert Baruan Hamis	Male	Production Manager	MERU AGRO	Tanzania	Eastern Africa
14	Mr. Kumba E. Brima	Male	Extension Officer	YEAVA ENTERPRISES	Sierra Leone	Eastern Africa
15	Kafando Somtinda	Male	Production Manager	FAGRI	Burkina Faso	Western Africa
16	Santos .A. Conteh	Male	Production Manager	SOBBA INITIATIVE	Sierra Leone	Western Africa
17	Richard M. Wakawa	Male	Production Manager	JIRKUR SEEDS	Nigeria	Western Africa
18	Festus Massaquoi	Male	Production Manager	AGRA	Sierra Leone	Western Africa
19	Bala Dari	Male	Production Manager	VALUE SEEDS	Nigeria	Western Africa
20	Dogara Mohammed	Male	Production Manager	TECHNISEEDS	Nigeria	Western Africa
21	Anseley Morie Fomba	Male	Production Manager	MMC	Sierra Leone	Western Africa
22	Silas Bagudu	Male	Production Manager	PREMIER SEED NIGERIA LTD.	Nigeria	Western Africa
23	Sergio Ntemansaka	Male	Production Manager	PHOENIX	Mozambique	Southern Africa

4.2 Seed drying processing and storage

The Main facilitator for the seed processing course was Dr. Onyango Mbunge from agricultural engineering of CAVS and Prof. Kiarie Njoroge of CAVS. This course was held from 1st June - 8th June 2014. The participants represented countries in Sub Saharan Africa namely; Ethiopia, Uganda, Tanzania, Rwanda, South Sudan, Sierra Leone, Burkina Faso, Ghana, Niger and Nigeria. The course was well coordinated by SEMIs staff, lecturers and it had good interactive sessions as later said by the participants. Moreover, participants travelled to Dryland Seed Company in Machakos County to familiarize themselves with processing activities at the company.



Lectures on seed drying, processing and storage underway at CAVS



Dr. Ragwa explaining to participants how a seed treating machine operates



Visit to Dryland Seed Company on seed processing



Participants pose for a group photo after a visit to KARI Seed Unit

Table 4.2: Details of Participants who attended the 2014 seed drying, processing and storage course

No.	Participants name	Gender	Position in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Abdiasiz Ahmed Anshur	Male	Seed Processing Manager	SEED ENTERPRISE	Ethiopia	Eastern Africa
2	Aidan Levi	Male	Seed Processing Manager	HIGHLAND SEED GROWERS	Tanzania	Eastern Africa
3	Baraza Shadrack	Male	Seed Processing Manager	EQUATOR	Uganda	Eastern Africa
4	Marco Msheshiwa	Male	Seed Processing Manager	SUBA AGRO TRADING AND ENG. CO. LTD.	Tanzania	Eastern Africa
5	George M. Lunga	Male	Seed Processing Manager	TROPICAL SEED COMPANY	Tanzania	Eastern Africa
6	Albert Megiroo	Male	Seed Processing Manager	BEULA SEED	Tanzania	Eastern Africa
7	Skolastica Mashauri	Female	Seed Processing Manager	TANSEED INTERNATIONAL	Tanzania	Eastern Africa
8	Felicien Ngendahimana	Male	Seed Processing Manager	SABBATH YEAR AGRICULTURAL ECONOMIC DEVELOPMENT (SYAED)	Rwanda	Eastern Africa
9	Michael Irra Leonardo	Male	Seed Processing Manager	AFROGANICS	South sudan	Eastern Africa
10	Grace Duani Mohamed	Female	Seed Processing Manager	NVUE FARMING ADVISORY AND TRAINING SERVICES LTD	South sudan	Eastern Africa
11	Charles Omara	Male	Seed Processing Manager	OTIS GARDEN SEED COMPANY	Uganda	Eastern Africa
12	Idd Abed Naibu	Male	Seed Processing Manager	MERU AGRO	Tanzania	Eastern Africa
13	Prince Charles Brainard	Male	Seed Processing Manager	YEAVA ENTERPRISES	Sierra Leone	Western Africa
14	Kafando Somtinda	Male	Seed Processing Manager	FAGRI	Burkina Faso	Western Africa
15	Santos .A. Conteh	Male	Seed Processing Manager	SOBBA INITIATIVE	Sierra Leone	Western Africa
16	Abukari Abdulai	Male	Seed Processing Manager	HERITAGE SEEDS COMPANY	Ghana	Western Africa
17	Gado Mahamadou Djibo	Male	Seed Processing Manager	HALAL SEED COMPANY	Niger	Western Africa
18	Nancy Moh'd Wakawa	Female	Seed Processing Manager	JIRKUR SEEDS	Nigeria	Western Africa
19	Festus B Massaquoi	Male	Seed Processing Manager	AGRA	Sierra Leone	Western Africa
20	Ibrahim Usman Illela	Male	Seed Processing Manager	VALUE SEEDS	Nigeria	Western Africa
21	Desmond Ikerionwu	Male	Seed Processing Manager	TECHNISEEDS	Nigeria	Western Africa
22	Anseley Morie Fomba	Male	Seed Processing Manager	MMC	Sierra Leone	Western Africa
23	Bitrus Audu	Male	Seed Processing Manager	PREMIER SEED NIGERIA LTD.	Nigeria	Western Africa

4.3 Seed Quality assurance and seed enterprise quality management

This course was conducted from 11th to 23rd August 2014. The main facilitators were Dr. Evans Sikinyi from STAK and Prof. Kiarie Njoroge from CAVS. Participants were drawn from Ethiopia, Uganda, Kenya, Zimbabwe, Tanzania, Rwanda, South Sudan, Sierra Leone, Burkina Faso, Ghana, Niger and Mali.



Mr. Kibet of KEPHIS making lecture presentations on seed quality assurance



Prof. Muthomi demonstrating seed germination purity test to participants



Prof. Mutitu clarifying points on tissue culture propagation to participants



Participants of seed quality assurance at the end of training

Table 4.3: Details of Participants who attended the 2014 seed quality assurance and seed enterprise quality management course

No.	Participants name	Gender	Position in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Jaffer Mohammed	Male	Production Manager	Mohammed Awel Agri .Ent	Ethiopia	Eastern Africa
2	Mr. Benson Abong'o:	Male	Research & Quality Manager	Alphega Seed Company Ltd	Kenya	Eastern Africa
3	Juliet Angom	Female	Operations Control	Otis Garden Seed Company	Uganda	Eastern Africa
4	Adisu Belay	Male	Seed Inspector	Amhara Seed Enterprise	Ethiopia	Eastern Africa
5	Miheretu Abe Boremma	Male	Seed Inspector	Southern Seed Enterprise	Ethiopia	Eastern Africa
6	Yihun Seid Yassin	Male	Co-ordinating Manager	Alemayehu Makonnen Farm PLC	Ethiopia	Eastern Africa
7	Girisom Bwire	Male	Production & Quality Control	Masindi seed company Ltd	Uganda	Eastern Africa
8	George Kyalo	Male	Manager	Gicheha Farm Ltd	Kenya	Eastern Africa
9	Jayesh Khistaria	Male	Seed Manager	Suba Agro Co.Ltd	Tanzania	Eastern Africa
10	Alinanine Shimwela	Male	Production Manager	Highland seed Growers Ltd	Tanzania	Eastern Africa
11	Amy Luise Mac Robert	Female	Manager	Mukushi Seeds	Zimbabwe	Southern Africa
12	Bidali Kennedy	Male	Sales Officer	Greenbelt Seed Company	S.Sudan	Eastern Africa
13	Karan Michael	Male	Manager	Meru Agro	Tanzania	Eastern Africa
14	Jacob Mugisa	Male	Field Officer	Masindi seed company Ltd	Uganda	Eastern Africa
15	Kafando Somtinda	Male	Assistant Manager	FAORI	Bukina Faso	Western Africa
16	Gado Djibo Mahamadou	Male	Production Manager	Halal Seed Co	Niger	Western Africa
17	Eric Kafui Amoaku	Male	Production Manager	Innovations Village Seed Company	Ghana	Western Africa
18	Mamadou Kayentao	Male	Manager	AGRI PLUS	Mali	Western Africa
19	Abukari Abdulai	Male	Field Officer	Heritage Seeds	Ghana	Western Africa

4.4 National Plant Protection Organizations and Seed Quality Regulators (NPPOs & SQR)

National Plant Protection Organizations and Seed Quality Regulators course was held from 24th to 31st August 2014. The course was mainly facilitated by Dr. Evans Sikinyi. The trainees in attendance came from 13 Sub-Saharan African Countries namely; Kenya, Ethiopia, South Sudan, Rwanda, Tanzania, Uganda, Malawi, Mozambique, Zambia, Niger, Senegal, Burkina Faso and Senegal. During the course, participants visited KEPHIS laboratories at Karen for practicals and were mesmerized at how KEPHIS personnel were organized. Participants also later indicated that key note speakers to the course were dedicated and targeted the audience with the right information.



Participants for the NPPOs and SQR course keenly listens to a key presenter



Sharing of experiences through group discussion session underway

Table 4.4: Details of participants who attended the 2014 Plant Protection Organizations and Seed Quality Regulators course

No.	Participants name	Gender	Position of in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Daniel Mekonnen Kumssa	Male	Director Plant Varieties	MINISTRY OF AGRICULTURE	Ethiopia	Eastern Africa
2	Jean Paul Mbonimpa	Male	Quality Seed control Officer	RAB/MINAGRI	Rwanda	Eastern Africa
3	Thomas Hugo Minde	Male	Project Officer	TASTA	Tanzania	Eastern Africa
4	John Israel Msemwa	Male	Seed Certification Officer	TANZANIA SEED CERTIFICATION INSTITUTE	Tanzania	Eastern Africa
5	Masereka Nelson Sirikani	Male	Executive Secretary	UGANDA SEED TRADE ASSOCIATION (USTA)	Uganda	Eastern Africa
6	Wilson Fabiano Milamba Chafutsa	Male	Head of Seed Quality Control	MINISTRY OF AGRICULTURE	Malawi	Eastern Africa
7	Nhatave Hermenegildo Natanil,	Male	Chairperson	MOSTA(MOZAMBIQUE SEED TRADE ASSOCIATION	Mozambique	Eastern Africa
8	Theresa Inutu Mutiti	Female	Seed Analyst	S.C.C.I	Zambia	Southern Africa
9	Aaron Ngulube	Male	Seed Analyst	S.C.C.I	Zambia	Southern Africa
10	Stephen Katabaazi	Male	Agricultural Inspector	MAAIF/CROP PROTECTION	Uganda	Eastern Africa
11	Nyende Siraj	Male	Seed Inspector	NSCS/MAAIF	Uganda	Eastern Africa
12	Martin Njogu	Male	Seed Inspector	KEPHIS	Kenya	Eastern Africa
13	Dora Daniel Kenyi	Female	Inspector of Agriculture	MAF/CES	South Sudan	Eastern Africa
14	Jimmy Morris Lado Lou	Male	Inspector of Agriculture	RSS/MAF/CES	South Sudan	Eastern Africa
15	Samuel Osewe	Male	PVP Inspector	KEPHIS	Kenya	Eastern Africa
16	Salissou Abdou	Male	Seed Inspector	SERVICE DEPARTMENTAL OF AGRICULTURE	Niger	Western Africa
17	Mahamane Bassirou Ibrahim	Male	Seed Inspector	SERVICE DEPARTMENTAL OF AGRICULTURE	Niger	Western Africa
18	Diop Laity	Male	Seed Control and Certification	DISEM/SEED ADVISOR	Senegal	Western Africa
19	Lankoande Diakiro Oliver	Male	Seed Control and Certification	NASA(NATIONAL SEED SERVICE)	Bukina Faso	Western Africa
20	Affram Vincent Yao	Male	Seed Inspector	MINISTRY OF FOOD AND AGRICULTURE	Ghana	Western Africa
21	Oumar BA	Male	Monitoring Officer and Control	DISEM	Senegal	Western Africa

4.5 Seed production field diagnostics

Field production field diagnostics course was held from 16th to 23rd November 2014. The course was facilitated by Prof. Florence Olubayo, Prof. James Muthomi and Prof. R.D Narla, all from CAVS. Participants to this course represented 9 countries in Africa namely; Rwanda, Ghana, Niger, Burkina Faso, Malawi, Kenya, Tanzania, Uganda and South Sudan. Besides lectures, participants were involved for laboratory and field practicals at the CAVS field station. The practicals were beneficial as participants commented that they were well programmed and attended to by knowledgeable lecturers.



Participants keenly follows lecture presentations on field diagnostics



Participants of field diagnostics during on a field practical session in CAVS

Table 4.5: Details of participants who attended the 2014 seed production field diagnostics course

No.	Participants name	Gender	Position in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Prince Kwadwo Okyere Andoh	Male	Project Manager	PREMIUM SEEDS GHANA LTD	Ghana	Western Africa
2	Amoaku Erick Kafui	Male	Production Manager	THE INNOVATIONS VILLAGE SEED COMPANY	Ghana	Western Africa
3	Kolga Issaka	Male	Manager	FAGRI	Bukina Faso	Western Africa
4	Mamane Badaze	Male	Production Manager	HUSAA	Niger	Western Africa
5	Azinu Amos Rutherford	Male	Research Officer	LEGACY CENTER FOR CROP IMPROVEMENT	Ghana	Western Africa
6	Sow Sylvie Adelaide	Female	Sales Manager	NAFASO	Bukina Faso	Western Africa
7	Nyirangabo Ignace	Male	CEO	WIN WIN AGRI -TECH LTD	Rwanda	Eastern Africa
8	Patrick Paul Mwasapi	Male	Production Manager	MERU AGRO SEED COMPANT LTD	Tanzania	Eastern Africa
9	Eperabon Emoru Justine	Male	Production Manager	PEARL SEEDS LTD	Uganda	Eastern Africa
10	Kirikarama James	Male	Sales Manager	EQUATOR SEEDS LTD	Uganda	Eastern Africa
11	Okwiri Charles Ochieng	Male	Production Manager	DRYLAND SEED LTD	Kenya	Eastern Africa
12	Louis Chapuka Master	Male	Production Manager	PREMIUM SEEDS COMPANY LTD	Malawi	Eastern Africa
13	Meria Phiri	Female	Administration Manager	GLOBAL SEEDS MALAWI	Malawi	Eastern Africa
14	Isaka Masanja Mashauri	Male	CEO	TANSEED INTERNATIONAL LTD	Tanzania	Eastern Africa
15	Lilian Jeptanui	Female	Field operations & Production Officer	EGERTON UNIVERSITY SEED UNIT	Kenya	Eastern Africa
16	Memory Marjorie Mwasi.	Female	Production Manager	MGOM'MERA SEED COMPANY	Malawi	Eastern Africa
17	Samue Hakim	Male	Farm Manager	CENTURY SEEDS CO.LTD	South Sudan	Eastern Africa
18	Muvara John	Male	Production Manager	RISCO(RWANDA IMPROVED SEED COMPANY)	Rwanda	Eastern Africa

4.6 Seed business management

This course was mainly facilitated by Prof. Evans Aosa from school of business, University of Nairobi and Ms Aline O'Connor from Agri-Experience consultants limited. The course was held from 23rd to 30th November, 2014 and attended by 19 participants. These participants were from Ethiopia, Niger, Ghana, Kenya, Uganda, Tanzania and South Sudan. Sessions held had professional presenters and good interactive sittings as noted by the participants. Apart from the training at CAVS, participants visited Kenya Seed Company in Nairobi to expertise on seed business management.



Lecture presentations by Aline O'Connor to seed business management participants



Participants of seed business management after the training in CAVS

Table 4.6: Details of participants who attended the 2014 Seed business management course

No.	Participants name	Gender	Position in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Zanguina Ibrahim	Male	Managing Director	HUSA'A	Niger	Western Africa
2	Salami Issoufou	Male	Head Of Inran Seed Unit	INRAN SEED UNIT	Niger	Western Africa
3	Issa Faykou Amate	Male	Managing Director	FESA SEED COMPANY	Niger	Western Africa
4	Iddrisu Zakaria Sumani	Male	Managing & Production Director	HERITAGE SEED CO LTD	Ghana	Western Africa
5	Magagi Abdou	Female	Managing Director	HALAL SEED CO.LTD	Niger	Western Africa
6	Azinu Amos Rutherford	Male	Research Officer	LEGACY CENTER FOR CROP IMPROVEMENT	Ghana	Western Africa
7	Zaato Peter Tontie	Male	Managing Director	AZIMPET BUS.EMPIRE	Ghana	Western Africa
8	Andoh Prince Kwadwo Okyere	Male	Project Manager	PREMIUM SEEDS GHANA LTD	Ghana	Western Africa
9	Bitew Melese	Male	Deputy Manager	AMHARA SEED ENTERPRISE	Ethiopia	Eastern Africa
10	Awol Jaffer Mohammed	Male	Deputy Manager	MOHAMMED AWEL FARM	Ethiopia	Eastern Africa
11	Haile Yimam Tesema	Male	Directing Manager	YIMAM TESEMA SEED COMPANY	Ethiopia	Eastern Africa
12	Herweijer Cornelia Francina	Female	Group Marketing & Sales Manager	ALPHEGA SEED COMPANY	Kenya	Eastern Africa
13	Otimodoch Peter	Male	Managing Director	OTIS GARDEN SEEDS	Uganda	Eastern Africa
14	Sallu John Marko	Female	Managing Director	JAMBEA AGRO PRODUCTIONS COMPANY	Tanzania	Eastern Africa
15	Luzige Eugene	Male	General Manager	MASINDI SEED COMPANY	Uganda	Eastern Africa
16	Gerald Maganga Nzwalla	Male	General Manager	SUBA AGRO COMPANY LTD	Tanzania	Eastern Africa
17	James Nyikole	Male	CEO	SOUHTERN FARMERS COMPANY	S.Sudan	Eastern Africa
18	Oryem Cosmas P'Ionam Olebe	Male	CEO	MASCO SEED COMPANY	S.Sudan	Eastern Africa
19	David Bategereza	Male	CEO	HIGHLAND SEED GROWERS	Tanzania	Eastern Africa

4.7 Seed Marketing

Seed marketing course was held from 30th November to 6th December 2014. Main facilitators for the course were Dr. Justus Munyoki and Aline O'Connor. Other contributors were staff from CAVS and KEPHIS. Participants to this course were from Niger, Kenya, Uganda, Ghana, Tanzania, Burkina Faso, Ethiopia, South Sudan and Nigeria. Participants attested that the training given was well conducted and relevant. Participants also had the opportunity to visit CAVS field station for practicals which they said were very educative.



Aline O'Connor making presentations on seed marketing



Visit to a leading seed distributor in Nairobi- Exposing participants on practical seed marketing

Table 4.7: Details of participants who attended the 2014 Seed Marketing course

No.	Participants name	Gender	Position in Seed Company	Name of Seed Company	Country of Origin	Region of origin
1	Magagi Abdou	Male	Managing Director	HALAL SEED CO.LTD	Niger	Western Africa
2	Salami Issoufou	Male	Head Of Inran Seed Unit	INRAN SEED UNIT	Niger	Western Africa
3	Andoh Prince Kwadwo Okyere	Male	Project Manager	PREMIUM SEEDS GHANA LTD	Ghana	Western Africa
4	Kafando Somtinda	Male	Production/Marketing	FAGRI	Burkina Faso	Western Africa
5	Oumarou Djibir	Male	Admin/Finance Manager	HUSA'A	Niger	Western Africa
6	Ibrahim Sani	Male	Financial Manager	FESA	Niger	Western Africa
7	Kadiri Aisha Iddrisu	Female	Marketing Officer	HERITAGE	Ghana	Western Africa
8	Babugi Raphael Ayiwole	Male	Marketing Officer	PETOS	Ghana	Western Africa
9	Ibrahim Idris Mohamed	Male	Project Manager	MATAO	Ethiopia	Eastern Africa
10	Sharifa Abebe	Female	Managing Director	JAMBE AGRO PRODUCTION	Tanzania	Eastern Africa
11	Beka Zinash Zewdie	Female	Seed Expert	SOUTHERN SEED ENTERPRISE	Ethiopia	Eastern Africa
12	Shimwela Alinanine	Male	Production/Marketing	HIGHLAND SEED GROWERS	Tanzania	Eastern Africa
13	Fredrick Chacha Mahenye	Male	Zonal/Branch Manager	SUBA AGRO	Tanzania	Eastern Africa
14	Emmanuel Mugabi	Male	Production/Marketing	MASINDI	Uganda	Eastern Africa
15	Mekonnen Mahelet Alemayehu	Female	General Manager	ALEMEYEHU MAKONNEN	Ethiopia	Eastern Africa
16	Macharia Noah Chege	Male	Sales & Marketing Manager	FRESHCO	Kenya	Eastern Africa
17	Gloria Mutheu Ngila	Female	General Manager	DRYLAND SEEDS	Kenya	Eastern Africa
18	Wakawa Richard	Male	Production/Marketing	JIRKUR	Nigeria	Eastern Africa
19	Isaac Lubari Samuel.	Male	Farm Manager	GREENBELT	South Sudan	Eastern Africa
20	Angom Juliet	Female	Programme Officer	JULIET ANGOM	Uganda	Eastern Africa

5. SEMIS INFRASTRUCTURE

Tremendous development has been made on construction of the seed processing unit and laboratories of SEMIs at CAVS. Phase I which involved construction of seed processing unit was completed in 2014. Seed processing units comprising of air-screen cleaner, gravity separator, seed coating machine, packaging machine and maize Sheller machine are housed in the building having been imported from China and the USA. Currently, contractors at the site are doing fittings and finishes for the labs and conference rooms of the phase II part of the project. These works are expected to be complete by end April after which the building will be officially handed over to the University and the Institute.



Phase I - seed processing unit is complete



Phase II consisting of labs, offices and classes- Finishes and fitting works ongoing

Equipment Installation

A consultant company has been identified to install the seed processing machines housed by the institute. Installation works are expected to take 45 days in five phases. The phases will entail assembling, installation, commissioning, training, testing, and handover. The processing equipments has a capacity to process 5 MT of seeds per hour. Plans to start equipment installation are set from March 2015 as the assembly team would benefit from advices of Dr. Yuan Shyy, seed processing specialist, ISU.

Many seed companies such as Elgon Kenya Limited have come up to request a contract to have their seeds processed by SEMIs as early as April 2015 as soon as operations begin. These new partnerships for services of high capacity SEMIs equipments promise to add source of income for the Institute for eventual future sustainability.

6. BEAN SEED PRODUCTION

SEMI's project is bulking six varieties of breeder seed beans which are contracted to two seed companies; Kenya Seed Company and Elgon Kenya Limited. In 2014 off season of July- October, the project harvested 2.6 tonnes of beans while 1.7 tonnes was harvested from November 2014 - January 2015 season.



Table 6.1: Basic seed production levels by SEMIs in 2014

White label seed produced at SEMIs		
Year	Tonnage	Variety
2011	700 Kgs	Kenya Umoja
2012	1.7 tonnes	Meizi mbili, Kenya wonder, Kabete super
2013	1.76 tonnes	Kenya Red Kidney, Meizi Mbili
2014	4.30 tonnes	Kenya Red Kidney, Kabete Super, Miezi Mbili

PART II: FINANCIAL REPORT