KENYA PLANT HEALTH INSPECTORATE SERVICE

KEPHIS

ANNUAL REPORT AND FINANCIAL STATEMENTS

for the year ended 30th June 2017

Participants of the 2016 International Phytosanitary Conference; over 100 participants from 35 countries attended the event which was the first of its kind in Africa and the world.

Our Vision

The Lead Regulator and Facilitator of Globally Competitive Agriculture

Our Mission

To Provide a Science-based Regulatory Service by Assuring Quality of Agricultural Inputs and Produce to Promote Food Security and Sustainable Development

Our Core Values

In providing services, KEPHIS is committed to good governance guided by:

- Customer focus
- Integrity
- Team Work
- Innovation and Creativity
- Professionalism
- Corporate Social Responsibility

DIRECTORS

Chairman
Mr. Wycliffe O. Murwayi

Managing Director
Dr. Esther Kimani

Director
Eng. M'Mwenda J. Kailu
Director
Mr. William Ng'elechei
Director
Eng. Khamis Chome Abdi
Director
Prof. Anne Muigai
Director
Mr. Mugambi Angaine
Director
Ms. Teresa M. Muchira

Alternate to the Principal Secretary, Ministry of Agriculture, Livestock and Fisheries, State Department of Agriculture
Mr. Joseph Ng'etich

Alternate to the Principal Secretary, the National Treasury
Mr. Julius Mutua

Our Headquarters
Oloolua Ridge, off Ngong Road, Karen, Nairobi

Our Auditors
Kenya National Audit Office,
P.O. Box 30084-00100 Nairobi

ISO POLICY STATEMENT

KEPHIS is a regulatory body mandated to undertake quality assurance services of agricultural inputs, plant variety protection and plant health.

The KEPHIS Board of Directors, management and staff are committed to full implementation of ISO 9001:2008 standard requirements in service delivery. This is a deliberate strategic decision to enhance achievement of its vision, mission, goals and objectives.

In pursuit of the above commitment KEPHIS:

- Seeks to understand and address the dynamic needs and requirements of its customers and stakeholders in line with its mandate.
- Provides and manages the resources needed for maintaining compliance to the standard and continual improvement.
- Ensures that the QMS and its requirements are communicated to and understood by staff.
- Provides a framework for establishing and reviewing its quality objectives for continued suitability of service.

The above commitments are geared towards meeting and exceeding customer needs and expectations.

Mr. Wycliffe O. Murwayi - Chairman

Mr.Murwayi has vast technical and management experience in agriculture and business, both in Kenya and the region. He has academic qualifications in Agronomy, Marketing and Strategic Management. He holds a Masters degree in Business Administration from Jomo Kenyatta University of Agriculture and Technology and a Bachelor of Commerce degree from the University of Nairobi.

He has over 27 years work experience, mostly at senior management levels in coffee agronomy and the aid sector. Currently, he is the managing director of a Kenyan subsidiary of a large Swiss based commodity trade company.

Dr. Esther Kimani - Managing Director

Dr. Kimani has held various positions at KEPHIS: Ag. Managing Director (August 2014 to July 2016), General Manager Phytosanitary Services (2011 to August 2014), Head - Phytosanitary and Biosecurity Services (2008 to 2010) and Officer In Charge – Plant Quarantine & Bio Security Station, Muguga (2001 to 2008).

She holds a PhD in Crop Protection, an MSc in Plant Pathology and a BSc in Agriculture from the University of Nairobi. She is pursuing a Masters of Business Administration, (Strategic Management) at Jomo Kenyatta University of Agriculture and Technology. Dr. Kimani has been instrumental in the development of standards under the International Plant Protection Convention (IPPC), where she has been serving as a standards committee member since 2012.She coordinated the activities for the establishment and operationalization of the Centre for Phytosanitary Excellence (COPE) at KEPHIS, which to date has trained over 1044 participants from Africa.

Eng. M'Mwenda J. Kailu - Director

Eng. M'Mwenda joined the Kenya Tea Development Authority (KTDA)as a management trainee in 1996. He has worked in various tea factories among them Kangaita, Kamunye, Gitugi and Kionyo in different capacities; Factory Officer, Assistant Factory Manager and Production Manager. Currently, he works as a Factory Unit Manager at KTDA Kapset. He holds a Bachelor of Science, Agricultural Engineering from the University of Nairobi. He serves as a member of the Technical Committee and the Finance & Administration Committee of the KEPHIS Board. He is also a trustee of the KEPHIS Staff Retirement Benefits Scheme.

Mr. William Ng'elechei - Director

Mr. Ng'elechei is a Horticulturalist. He holds a Bachelor of Science degree in Horticulture from the Jomo Kenyatta University of Agriculture and Technology and is currently undertaking a Masters Course in Strategic Management (MBA – Strategic Management). He has broad experience in Horticulture having previously worked as a Floriculture Manager in the Kenyan and Ethiopian flower industries. At the KEPHIS Board, he serves as a member of the Finance and Administration Committee and the Technical Committee.

Eng. Khamis Chome Abdi – Director

Eng. Chome is an accomplished professional with over 30 years' experience in water resources, development and humanitarian sectors. More recently, he was the Country Director for Somalia for Norwegian People's Aid and Oxfam GB; and previously the Deputy Executive Director for Kenya Water for Health Organization (KWAHO). He started his career in the Ministry of Water Development and moved to the National Water Conservation and Pipeline Corporation. At KEPHIS, he serves as Chair of the Finance and Administration Committee and member of the Technical Committee. He also serves as the Chairperson of KEPHIS Staff Retirement Benefits Scheme.

Eng. Chome also serves the civil society as Interim Chair of Christian Sports Contact (CHRISC) - Kenya and a Board Member of Tsavo Heritage Foundation. Eng. Chome holds a Master's Degree in Water Resources Engineering from University of Dar es Salaam and a Bachelor's Degree in Civil Engineering from the University of Nairobi. He also holds Certificates in The Oxford Strategic Leadership Program from Said Business School, University of Oxford; he has been trained by the Centre for Corporate Governance - a Course for Directors; and Peace building and Good Governance for African Civilian Personnel and Disarmament, Demobilization and Reintegration, both from the Legon Centre for International Affairs (LECIA), University of Ghana. Eng. Chome also holds a Certificate of Distinguished Service in the Second National Selection Committee of UNDP Africa 2000 Network.

Prof. Anne Muigai - Director

Prof. Muigai is a Molecular Population Genetist with over 15 years of experience in the field of Genetics and Biotechnology. She holds a doctorate degree in Biochemistry and a Master of Science in Genetics. She joined Jomo Kenyatta University of Agriculture and Technology (JKUAT) in 1992 as a teaching assistant and has risen to the position of a Professor of Genetics in the Department of Botany. She has held several academic and administrative positions within JKUAT including being the pioneer Chairperson of the Department of Botany.

She has served as the Director of the Institute for Biotechnology Research, member of the JKUAT Senate and has also served in the JKUAT University Council. Currently she is the Editor-in-Chief of the Journal of Agriculture Science and Technology, and is the Coordinator of the postgraduate programs in the Department of Botany. She has also served as a Visiting Scientist at the International Livestock Research Institute (ILRI) in Nairobi, Kenya where she was the coordinator of a research project on the characterization of indigenous sheep genetic resources of Kenya. She has carried out several consultancies for ILRI. Currently she is a member of the Technical Advisory Group on Animal Genetics to the African Union Inter-African Bureau on Animal Genetics (AU-IBAR). At the KEPHIS Board, she serves as the Chairperson of the Technical Committee and as a member of the Audit Committee.

Mr. Mugambi Angaine - Director

Mr. Angaine is an experienced manager and leader at national and county government levels with vast experience and exposure in institutional development and growth for social and economic benefits for the Kenyan people and the international community. At the KEPHIS Board, he serves as a member of the Audit Committee. Previously, he worked in the Ministry of Tourism as well as the Ministry of Public Works. He is involved in private business which entails managing large scale horticultural farming for export, managing zero grazing dairy farming, managing wheat farming for commercial and seed production and managing petroleum products in partnership with Total Kenya. In his leadership role, he has participated in management at national and community levels which entails planning and development of strategic interventions and educating county employees and the general public on national values and principles stipulated in the Constitution. He has organized and supported youth projects on social and economic empowerment; he has organized and advised women groups for preparation and formulation of project proposals for funding; and he also serves as a church elder for the Methodist Church of Kenya. Mr. Angaine was awarded by the retired President His Excellency Mwai Kibaki, a Presidential Farmers' Competition award scheme National Large Scale Farm Competition as the Farmer of the year during the Agricultural Society of Kenya Show at Nairobi. He holds a Bachelor's Degree in Business Administration, (Human Resource Management) from the Kenya Methodist University.

Ms. Teresa M. Muchira - Director

Ms. Muchira has vast experience in Finance having worked with the National Bank of Kenya for 35 years. At the point of leaving the banking sector, she had risen to the level of Operations Manager. She serves as the Chairperson of the Audit Committee as well as a member of the Technical Committee. She holds a Master's Degree in Business Administration (Strategic Management), a Bachelor's Degree in Business Administration and CPA 1. She previously served as a Board Member at the National Irrigation Board

Mr. Joseph Ng'etich
Alternate to the Principal Secretary, State Department of Agriculture

Mr. Ng'etich has a far reaching experience in the Civil Service, with his career spanning over thirty two years. He has particularly been involved in the Ministry of Agriculture from his deployment at West Pokot District as a Soil and Water Conservation Officer rising up to his current position as Deputy Director of Agriculture/Crop Resources Protection Services Division. He also has 19 years field experience in extension and agricultural development especially in dealing and working with farmers, Non-Governmental organizations and community leaders in initiating, implementing and managing agricultural programs and projects.

At the KEPHIS Board, he is the Alternate Director to the Principal Secretary, State Department of Agriculture. He also serves as a member of the Audit and Technical Committees.

Mr. Julius Mutua
Alternate to the Principal Secretary, the National Treasury

Mr. Mutua is the Alternate Director to the Cabinet Secretary, the National Treasury. He is a seasoned civil servant with over 20 years experience in economic and financial policy formulation at the National Treasury. He has served in the National Fiscal Budget Preparation Team for many years and participated in regional integration issues including the negotiation of the East African Community Monetary Union Protocol. He is currently the Programme Coordinator for the Public Finance Management Reforms. Mr. Mutua holds a Bachelor's degree in Economics from Kenyatta University and a Master's degree in Economics from the University of Dar es Salaam. He also holds certificates in Fiscal Decentralization and Financial Institutions for Private Enterprise development from Duke and Harvard Universities respectively. He is a member of the Audit as well as the Finance and Administration committees.

Dr. Isaac Macharia

Dr. Macharia is the General Manager, Phytosanitary Services at KEPHIS where he has worked since 2002. He holds a Doctor of Philosophy (PhD) in Plant Virology from the University of New England in Australia, a Master's of Science in Plant Pathology and Bachelors of Science in Agriculture from the University of Nairobi. He has acquired various training in phytosanitary which include Pest Risk Analysis and Diagnosis from USAID APHIS and Ohio State University in USA, virus indexing in IITA Nigeria, biosafety risk analysis in Belgium and Seed Certification in The Netherlands.

Dr. Macharia has worked in various capacities which include head of phytosanitary laboratory and deputy officer in charge at the Plant Quarantine and Biosecurity Station and Regional Manager, Mombasa regional office. The phytosanitary services division comprises of Trade and Standards Coordination, Projects Coordination, the Plant Quarantine and Biosecurity Station, Plant Inspection Unit at JKIA as well as Mombasa, Embu, Kisumu and Naivasha regional offices.

Mr. Simeon K. Kibet,
GM Quality Assurance

Mr. Kibet joined KEPHIS in October, 2000 and he is the General Manager, Quality Assurance. He holds an MPhil degree in Crop Production and Seed Technology from Moi University and a BSC in Agriculture from Nairobi University. He has also trained in short courses in Seed Technology in Japan, The Netherlands and South Africa. He has held several senior positions in KEPHIS including Liaison Officer for the Quality Assurance Division, Regional Manager Nakuru, Head, Seed Certification and Plant Variety Protection and currently as the General Manager-Quality Assurance. The Quality Assurance division overseas the Seed and Plant Variety Protection department, the Analytical Chemistry Laboratory, the Planning and Implementation department and the Kitale and Nakuru regional offices.

Mr. James Angawa

James joined KEPHIS on 1st April 2017 and is the General Manager, Finance and Administration. A Certified Public Accountant of Kenya, he has risen through corporate ranks to become a Senior Finance Executive, Controller, Manager and Trainer. James has extensive experience in corporate governance, strategy formulation, financial control policy development and implementation; intensive Board and Executive Committee contribution; facilitation as well as the administration and coordination of internal and external audits. His experience spans public and private sectors in various industries and services emphasizing Higher Education, Research & Technology transfer FMCGs, Water sector, Manufacturing, Financial Consulting, Professional practice, Automobile Dealerships Insurance and national budget strategy paper (BSP) resource allocation. It also includes organization re-engineering development growth and sustainability, executorships of public trust, business analysis, planning, budgeting, management evaluation, and reporting, tax planning and management, IFRS, public sector accounting, staff management, administrative and commercial support. Some of the companies he has worked for include Jubilee Insurance, Ssangyong Motors (K) Ltd, Kuguru Food Complex Group, KALRO's Sugar Research Institute and Kisumu Water and Sewerage Company Limited. James is a holder of a Bachelor's Degree in Accounting and an MBA in Finance. A member of the institute of Public accountants of Kenya (ICPAK), he has lectured in Accounting and Finance at Maseno University and is currently pursuing a PhD at the University of Nairobi. The Finance and Administration Department is responsible for the human resource, finance and accounting, procurement, transport and ICT departments

SENIOR MANAGEMENT STAFF

Dr. Isaac Macharia
General Manager, Phytosanitary Services

Mr. James Ang'awa
General Manager, Finance & Administration

Mr. Simeon Kibet
General Manager, Quality Assurance

REGIONAL MANAGERS AND OFFICERS IN CHARGE

Mr. Josiah Syanda
Regional Manager, Mombasa

Mr. Charles Onyango
Regional Manager, Kitale

Mr. James Kefa Oganda
Ag. Regional Manager, Nakuru

Ms. Lynette Mbehya
Officer in Charge, Kisumu

Mr. Eric Were
Ag. Officer in Charge, Plant Inspection Unit – JKIA

Ms. Florence Munguti
Ag. Officer in Charge, Plant Quarantine & Bio-security Station

Mr. Jacob Cheptaiwa
Officer in Charge, Embu

Ms. Hilda Miranyi
Officer in Charge, Naivasha

HEADS OF SECTIONS

Mr. James Wahome
Chief Liaison Officer

Ms. Fridah Mbugua
Corporation Secretary

Ms. Hellen Mwarey
Technical Personal Assistant to the MD

Mr. Simon Maina
Head, Seed Certification & Plant Variety Protection

Ms. Faith Ndunge
Head, Bio-security and Phytosanitary Services

Mr. Onesmus Mwaniki
Head, Analytical Chemistry Laboratory

Mr. Nicholas Tunya
Head, Planning & Implementation

Mr. Phillip Njoroge
Coordinator, Trade & Standards

Mr. Bartonjo Cheptarus
Head, Finance

Mr. Raphael Nderitu
Ag. Head, Internal Audit

Ms. Beth Mburai
Head, Human Resource and Development

Mr. Joseph Kigamwa
Coordinator, Projects

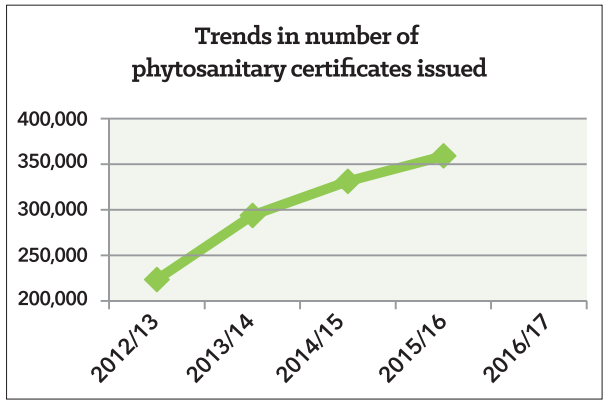
Mr. Charles Kamau
Head, Procurement

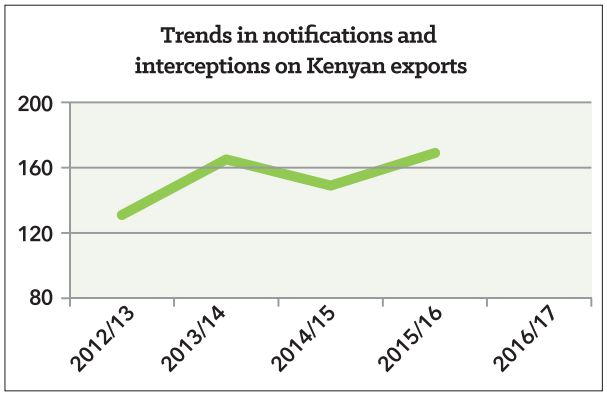
Mr. James Aboge
Head, Information Communication & Technology

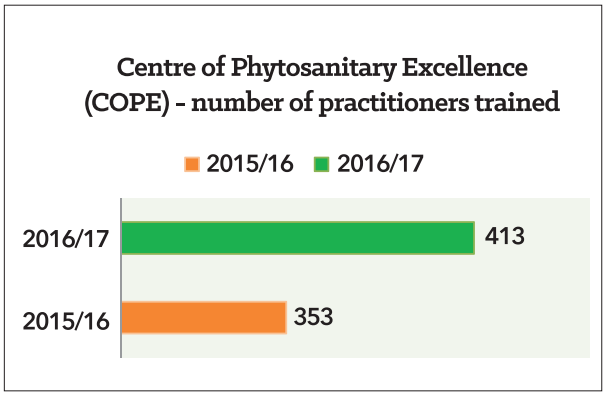
Ms. Peggy Ngaira
Head, Transport

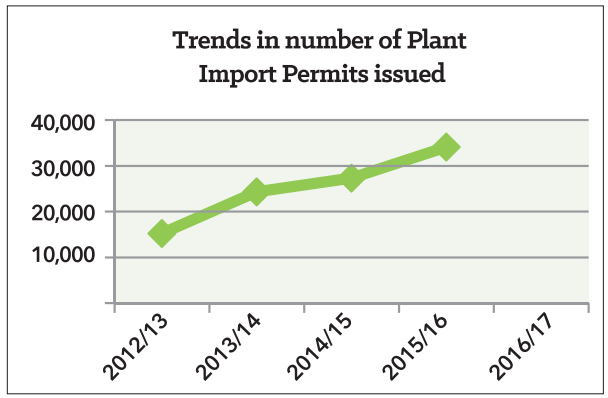
Ms. Catherine Muraguri
Head, PR and Corporate Communications

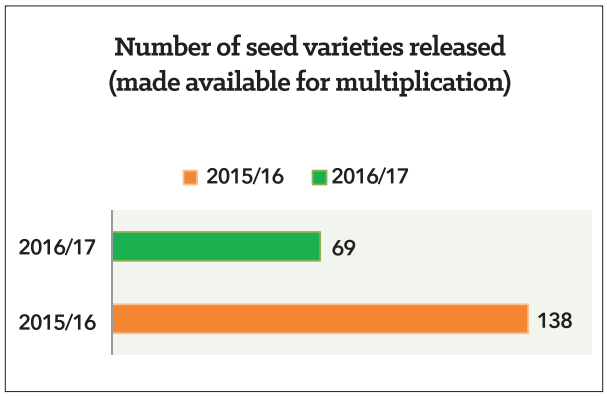
HIGHLIGHTS FOR THE YEAR 2016 - 2017

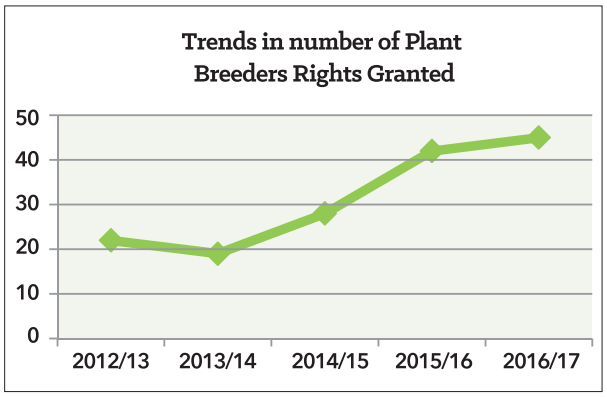


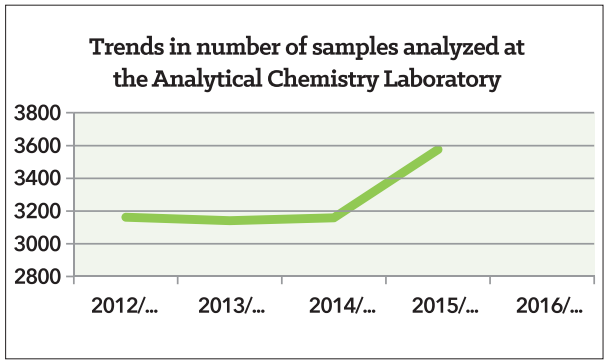












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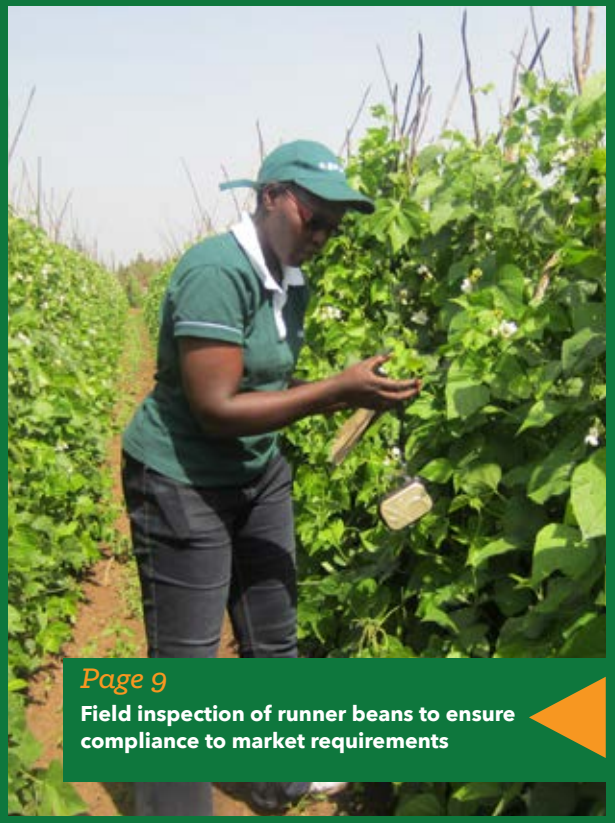
KEPHIS purchased a greenhouse so the children could have a source of food (tomatoes) and to sell the surplus, if any.



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Field inspection of runner beans to ensure compliance to market requirements

LIST OF ABBREVIATIONS

AFA –
Agriculture and Food Authority

CABI -
Centre for Agriculture and Biosciences International

CIP-
Centro Internacional De La Papa (International Potato Centre)

COMESA -
Common Market for Eastern and Southern Africa

COPE -
Centre of Phytosanitary Excellence

CPM -
Commission on Phytosanitary Measures

CSR -
Corporate Social Responsibility

DUS -
Distinctness, Uniformity and Stability

EAC -
East African Community

EAC-SPS -
East African Community Protocol on Sanitary and Phytosanitary Measures

EALA -
East African Legislative Assembly

ECS -
Electronic Certification System

EU -
European Union

EU-SMAP -
European Union – Standards and Market Access Programme

FPEAK -
Fresh Produce Exporters Association of Kenya

GAP -
Good Agricultural Practices

GCMS -
Gas Chromatography Mass Spectrometry

GDP –
Gross Domestic Product

HCD -
Horticultural Crops Directorate

ICS -
Import Certification System; also known as the PIQRS (Plant Import and Quarantine Regulatory System)

ICT -
Information, Communication and Technology

IITA -
International Institute of Tropical Agriculture

ISO -
International Organization for Standardization

ISTA -
International Seed Testing Association

IPM -
Integrated Pest Management

IPPC -
International Plant Protection Convention

ISPM -
International Standards for Phytosanitary Measures

JKIA -
Jomo Kenyatta International Airport

KALRO -
Kenya Agricultural and Livestock Research Organisation

KEBS -
Kenya Bureau of Standards

LIST OF ABBREVIATIONS

KENAS -
Kenya National Accreditation Service

KENTRADE -
Kenya Trade Network Agency

KFC -
Kenya Flower Council

KNSWS -
Kenya National Single Window System

KSTCIE –
Kenya Standing Technical Committee on Imports and Exports

LC-MSMS -
Liquid Chromatography–Mass Spectrometry

MNLD -
Maize Lethal Necrosis Disease

MOALF -
Ministry of Agriculture, Livestock and Fisheries

MOU -
Memorandum of Understanding

MRLs -
Maximum Residue Levels

MTP –
Medium Term Plan

NBA –
National Biosafety Authority

NPPO -
National Plant Protection Organization

NPRMP -
National Pesticide Residue Monitoring Plan

NPTC -
National Performance Trials Committee

NPTs -
National Performance Trials

NVRC -
National Variety Release Committee

OECD -
Organization for Economic Cooperation and Development

OSD -
Other Seed Determinants

PBR -
Plant Breeders Rights

PCPB -
Pest Control Products Board

PIP -
Plant Import Permit

PWD -
Person (s) with Disabilities

QMS -
Quality Management Systems

SANAS -
South African National Accreditation System

SASHA -
Sweet Potato Action for Security and Health Africa

UNIDO -
United Nations Industrial Development Organization

USAID -
United States Agency for International Development

UPOV -
International Union for the Protection of New Varieties of Plants

WTO -
World Trade Organization

WTO-SPS -
World Trade Organization on Sanitary and Phytosanitary Agreement

STATEMENT FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS

The Government of Kenya through its economic blueprint, Kenya Vision 2030, seeks to propel the country to achieving economic development at an average ten percent growth rate that will enhance the country's status to a middle income economy. Agriculture has taken centre stage and remains the main catalyst of growth for Kenya's economy. The sector contributes 26 percent indirectly to GDP. During the second MTP Period (2013-2017), growing crops and livestock production contributed an average of 27.3 percent of the national GDP or 65 percent of Kenya's total exports and 60 percent of the total employment.

According to the Kenya National Economic Survey 2017, contribution to GDP by crops and livestock was at 30.9 percent in 2016 thus making agriculture the dominant sector. The sector contributed about 75 per cent of industrial raw materials and 60 per cent of export earnings. In 2016, tea and coffee production rose by 18.5 percent and 10.8 percent to 473 thousand metric tonnes and 46.1 metric tonnes respectively. Earnings from fresh horticulture exports increased by 12.3 percent from Ksh. 90.4 billion in 2015 to Ksh. 101.5 billion in 2016. Locally, the need for sustained agricultural productivity is very crucial in ensuring food security for the country as well as creating income and wealth for large and small scale farmers.

KEPHIS plays an important role in ensuring the above mentioned milestones are met for the country. To achieve this, the Corporation has focused on delivering its mandate and

has established strong systems and processes that ensure high quality agricultural inputs and produce in the sector.

In unveiling the Annual Report and Financial Statements for the year ended 31st June 2017, it is worth noting that the agriculture sector is very dynamic and the operating environment has changed drastically during the period. Challenges were faced by the Corporation in the year under review and these mainly included emerging pests such as the Fall Army Worm which affected maize production. Unpredictable weather patterns with reduced levels of rainfall during the main crop seasons also led to reduction in yield levels for most crops.

"Through the EU SMAP project, KEPHIS was able to build capacity for staff and clients in trade standards in the agricultural sector with emphasis on the horticulture sub-sector. This has enhanced awareness levels for clients, ensured compliance to market requirements and opened up new trade opportunities for fresh produce."

Despite the challenges, the Corporation attained major milestones in serving its clients. Through the EU SMAP project, KEPHIS was able to build capacity for staff and clients in trade standards in the agricultural sector with emphasis on the horticulture sub-sector. This has enhanced awareness levels for clients, ensured compliance to market requirements and opened up new trade opportunities for fresh produce. In addition, the project provided capacity expansion in form of equipment for the analytical and diagnostic laboratories. This has ensured the laboratories broaden the scope of analyses and serve clientele better.

The Corporation was able to set pace for the next planning phase by development of the 2017/18-2021/22 Strategic Plan. This plan provides the road map for meeting our new vision of **"Healthy Plants, Safe Trade and Sustainable Agro-Environment for a Prosperous Kenya"** and has taken into consideration key Government of Kenya economic development priorities as well as relevant areas in the United Nations Sustainable Development Goals (SDGs), the African Union Comprehensive Africa Agriculture Development Programme (CAADP), African Union (AU) Agenda 2063 and other regional and international policy documents.

Sustainability remains a major factor amid adjustments in budgetary allocations from The Exchequer. In this regard, implementation of KEPHIS programmes in the subsequent years shall focus more on resource mobilization, efficient management and new service areas. This is expected to enhance the Corporation's revenue streams and provide a major boost to the Organization's financial resource base. This shall go a long way in ensuring that KEPHIS sustains its operations and fulfills its mandate.

I take this opportunity to thank the Board of Directors, management, stakeholders and staff that made the year a success through their unreserved commitment towards enhancing Kenya's agricultural sector and economy.

Wycliffe O.Murwayi
Chairman, Board of Directors
Kenya Plant Health Inspectorate Service (KEPHIS)

STATEMENT FROM THE MANAGING DIRECTOR

It is my pleasure to present to you the KEPHIS Annual Report and Financial Statements for the year ended 31st June 2017. This report is a milestone for the Corporation, having gone through twenty years of existence as an autonomous entity and regulator in Kenya's agricultural sector.

The Corporation has grown tremendously in the past two decades of its existence and has continued to strengthen its role in assuring the quality of agricultural inputs and produce. The varied processes of the Corporation are now strengthened with the continued operationalization of the KEPHIS Act No. 54 of 2012 and other supportive Acts that include the Seeds and Plant varieties Act CAP 326 and the Plant Protection Act CAP 324. In the year under review, the Corporation concluded implementation of the 2012/13 – 2016/17 Strategic Plan and developed a new Strategy for the next phase. (In the next financial year, the Corporation shall embark on execution of the Strategic Plan for the period 2017/18 – 2021/22).

In the past year, KEPHIS ensured quality of seed available to farmers through robust seed certification activities. 45 Plant Breeders Rights were issued as compared to 42 last year. In addition, 69 new seed varieties were released(made available for multiplication) during the period, 31 of which were drought tolerant. We also continued to support farmers in assuring quality of other inputs through analyses of fertilizers, water for irrigation suitability and soil and pesticide formulations. This was made possible through accredited laboratories at Headquarters, Seed Quality laboratory in Nakuru and the Plant Health Laboratory at the Plant

Quarantine and Bio-Security Station, Muguga. This has been a major confidence booster especially for clients undertaking virology, pest and plant pathology related tests.

The country has gone through numerous challenges in terms of crop pest and disease emergence. These included the Potato Cyst Nematode, the Fall Army Worm and the Papaya Mealy Bug at the Coast. Going forward, KEPHIS intends to work with partners and other agencies in developing a strong Early Warning System for plant pests and diseases in order to prevent sudden resurgence. The Corporation shall also put in place a research unit to work with other research agencies as a compliment in the fight against introduction of harmful organisms to the country. Enhancement of surveillance activities and border control shall also be ensured as a critical step towards protecting the local farmer.

KEPHIS also hosted the first ever international phytosanitary conference that brought together various global players in the plant health industry from Kenya and across the world. The conference showcased Kenya's potential in agriculture as well as in phytosanitary matters.

Capacity building remains a key focus area for KEPHIS. Pertinent has been ICT technology that has been a key driver to the improvement of service delivery in the Corporation. During the year, the Corporation expanded the ECS to include other fresh produce crops and launched a seed certification system for seed labels that will enhance traceability of certified seed. 18 seed merchants have registered and adopted the system. KEPHIS in collaboration with the University of Nairobi, CABI and other partners

"KEPHIS undertook various initiatives in Elgeyo Marakwet and Meru Counties for Mango production, Nyandarua County for Potato production and Kisii and Kericho counties for Avocado production. The Corporation shall sustain progress on staff skill development to meet the necessary competencies required for the dynamic sector

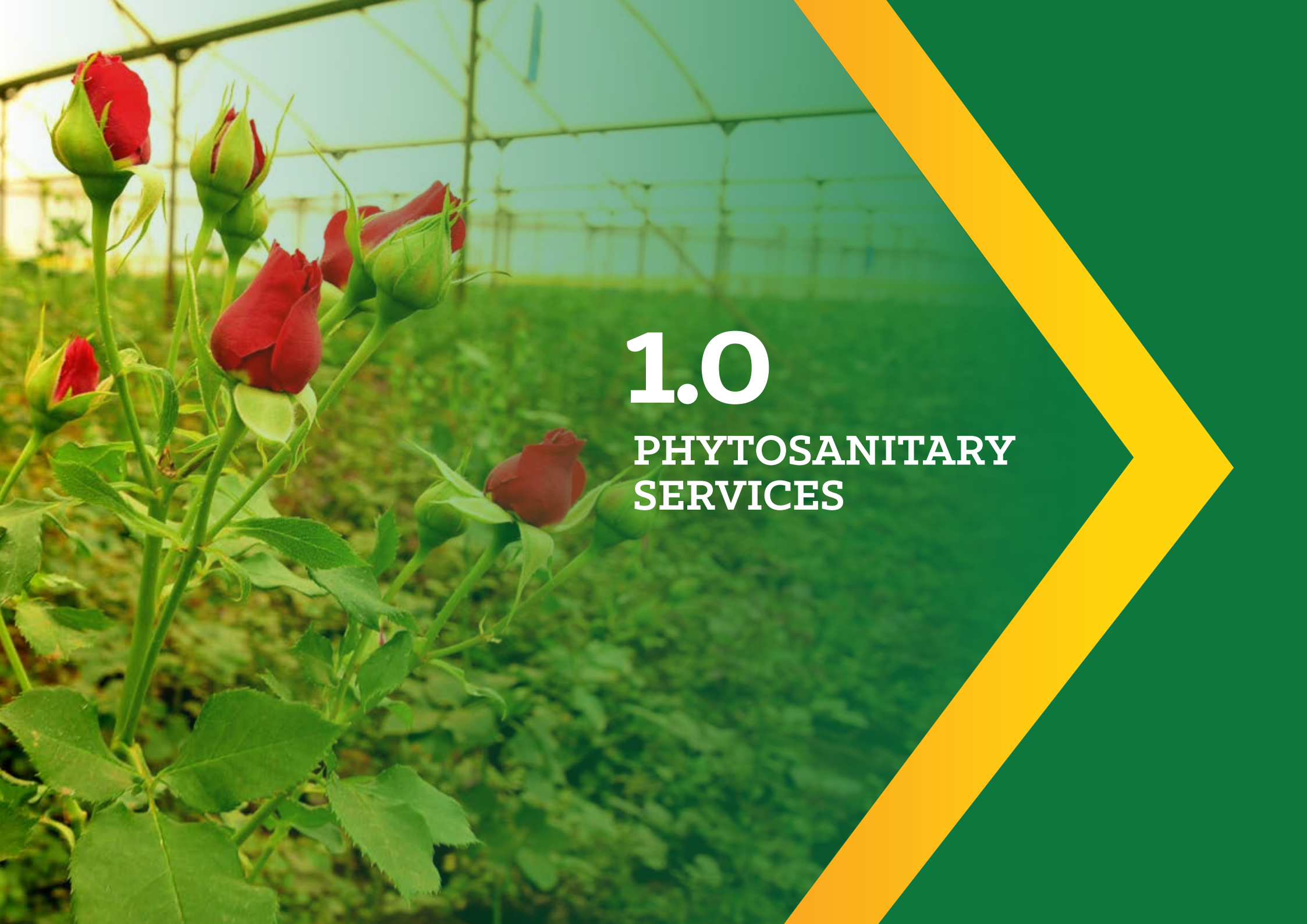
continued to operationalize COPE and trained 413 practitioners in the horticulture sector at local and regional levels. This was an increase from 353 trained last year. In the next five years, the Corporation intends to strengthen COPE into an independent and autonomous centre and streamline its operations and attract more collaborative support.

KEPHIS also focused on building capacity for our local farmers as well as players at the county government level as a way of ensuring compliance to standards at the grass root levels. This is expected to enhance productivity and create market access for local agricultural produce. In the period under review, KEPHIS undertook various initiatives in Elgeyo Marakwet and Meru Counties for Mango production, Nyandarua County for Potato production and Kisii and Kericho counties for Avocado production. The Corporation shall sustain progress on staff skill development to meet the necessary competencies required for the dynamic sector.

Resource mobilization and management remained a key area of focus for KEPHIS in the year. In the next financial year, creation and maintenance of new revenue streams as well as expansion of KEPHIS services shall be enhanced. Optimization of resource use and allocation shall also ensure sustainability for the Corporation. KEPHIS will enhance networks and collaboration with local and international development partners with a view of exploring avenues of cooperation in the areas of plant protection, seed trade facilitation and laboratory work. The concept of Public-Private-Partnership will also be initiated in various aspects and operations of the Corporation with the view of creating more business models for the Corporation in the future.

As I conclude, I take this opportunity to sincerely thank the Board, management, staff and all our partners for the support given during the year. KEPHIS is confident that with the support of all stakeholders and partners, we shall attain the newly set vision of "Healthy Plants, Safe Trade and Sustainable Agro-Environment for a Prosperous Kenya".

Esther Kimani, PhD
Managing Director
Kenya Plant Health Inspectorate Service (KEPHIS)



1.0
PHYTOSANITARY SERVICES

1.1 Inspection of Imported Plant Materials and Regulated Articles

The Corporation as per its mandate ensured that all imported plants, plant products and regulated articles met stipulated phytosanitary standards as outlined in Kenya's national laws and the international standards. Importation of plant and plant products into Kenya must be accompanied by Plant Import Permits (PIPs). In the year under review, 33,840 PIPs were issued at different KEPHIS stations to facilitate importation of plants, plant products and regulated articles, as indicated in the figure 1. This was a slight reduction from the previous year where 34,111 PIPs were issued. Figure 2 shows the trend of PIPs issued over the last five years.

1.2 Inspection of Plant and Plant Products for Export

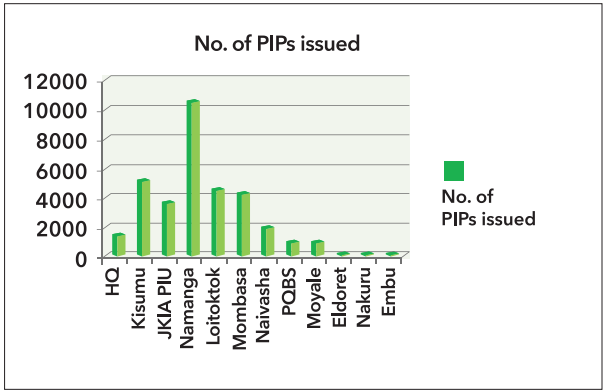


Figure 1: Number of PIPs issued at various KEPHIS stations during the year

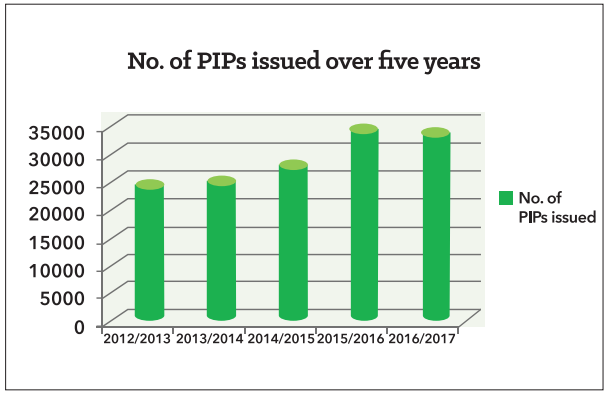


Figure 2: Trends of Plant Import Permits issued from 2012-2017

To facilitate trade, KEPHIS carried out produce inspections to ensure compliance to importing countries requirements. Consignments of plants, plant materials and regulated articles destined for export were inspected as per the provisions of the Agriculture Produce (Export) Act (Cap 319), international standards and market requirements. Inspections were conducted for production farms, nurseries, devitalisation facilities and wood treatment facilities.

Field inspection of runner beans to ensure compliance to market requirements

Kenya exports various fresh produce to various markets in the world. The EU is the major consumer of plants for planting, fruits, vegetables, cut flowers, herbs and other ornamental plants. Table 1 shows the volumes exported to the EU in the last five years.

Produce	2013	2014	2015	2016	2017	Totals
Flowers						
Roses	84,106.60	128,827.95	85,152.06	98,223.34	60,798.07	457,108.02
Carnations	4,824.81	2,392.31	3,484.91	3,284.75	1,301.91	15,288.69
Hypericum	78.92	95.13	1,232.94	2,349.72	1,121.54	4,878.25
Vegetables						
French beans	27,974.47	33,115.43	16,763.76	28,933.55	17,552.87	124,340.08
Pisum	2,216.75	4,553.60	2,711.37	2,595.72	689.05	12,766.49
Brocolli	1,394.58	1,344.17	2,738.31	755.57	261.08	6,493.71
Chillies	790.96	1,836.17	186.21	1,153.45	1,506.49	5,473.28
Fruits						
Avocadoes	16,201.14	32,005.37	23,218.11	21,406.37	20,867.19	113,698.18
Passion fruits	384.51	856.05	180.84	317.97	163.96	1,903.33
Herbs	195.31	516.05	7,076.00	587.19	498.88	8,873.43
Plants for Planting	2,964.24	3,648.42	1,950.46	2,159.27	1,631.44	12,353.83

Table 1: Summary of main exports quantities to the EU market per product in tonnes

During the year, KEPHIS continued to facilitate export of fresh produce to other emerging markets such as Russia, the Middle East, Israel, United States of America and China. However, interceptions due to documentation and presence of harmful organisms remained a challenge to Kenya's fresh produce in the international markets.

1.2.1 *Phytosanitary certificates*

Phytosanitary certificates were issued for plants and plant products that met the phytosanitary (plant health) requirements of the importing country. 409,338 phytosanitary certificates were issued in the year as indicated in figure 3. This was a slight increase from the previous year where 359,159 phytosanitary certificates were issued. In the last three years, phytosanitary certificates were issued as follows: 331,322 in 2014/2015, 293,785 in 2013/2014 and 223,427 in 2012/2013 respectively as summarised in figure 4. There has been a steady increase in the number of phytosanitary certificates issued and this is mainly attributed to increased export of fresh produce especially flowers, fruits and vegetables.

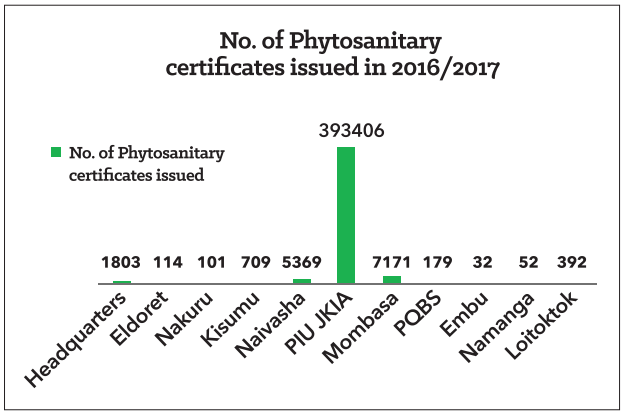


Figure 3: Number of phytosanitary certificates issued at various KEPHIS stations during the year 2016/17

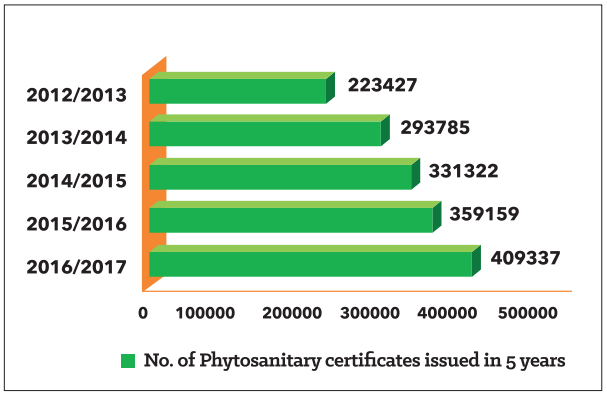


Figure 4: Trends on the phytosanitary certificates issued for the last five years

1.2.2 *Devitalisation*

During the year, the Corporation ensured compliance of facilities authorized to carry out devitalisation for export of cut flowers to the Australian and South African markets. KEPHIS facilitated firms undertaking export of plant materials by inspecting and certifying devitalisation treatment facilities. 49 facilities were audited and certified to undertake devitalisation. This was an increase from 39 that were inspected and certified in 2015/16. Besides certification, the Corporation undertook one devitalisation training during the year to create awareness in order to enhance compliance.

1.2.3 *Wood treatment facilities*

During the year, the Corporation facilitated exports by carrying out audit of facilities authorized to carry out treatment of wood packaging materials. The commonly treated wooden materials include pallets and wooden boxes used for carrying plant exports and plant products. This is done in line with international standard for movement of wood packaging materials (ISPM 15) which is aimed at mitigating against the spread of forest pests associated with wood and wood packaging materials. During the year, 17 facilities were audited and certified.

1.2.4 *Quarantine facilities inspected*

KEPHIS is mandated to prevent the introduction of harmful pests and diseases during importation of planting material and regulated articles through quarantine along with the planting material and other regulated articles. KEPHIS establishes quarantine facilities some of which are managed by client and are regularly inspected and monitored for compliance. Quarantine facilities are established prior to issuance of quarantine permits in support of post entry controls for imports and support compliance with national bio-safety and plant bio-security requirements. In the year, 57 quarantine facilities were inspected across KEPHIS stations as shown in table 2. These facilities were approved for holding roses, strawberry, bananas, bread fruits, orchids, potato seed, tree seedlings, grapes, among others.

Table 2: Number of holding quarantine and regulated articles facilities inspected

KEPHIS Station	Number	Crop(s) Held and regulated articles
Headquarters	18	Fragaris spp, Rosa spp, silk worm, various bio-pesticides, Hypoaspis sclerotarsa, Rhizobia spp,
Plant Quarantine station	18	Orchids, Grapes, Diathus, double haploid maize, Bread fruit, Coffee, soil, Rosa spp, bedding plants
Mombasa	5	Pineapple, sugarcane, rice, ginger, coconut and sea weed
Naivasha	14	Fragaris spp, Rosa spp, Kalanchoe spp, Dianthus spp, Pelagornium spp, Eringium spp, assorted herbaceous and non-herbaceous plants for planting
Embu	1	Pelargonium and assorted herbaceous and non-herbaceous plants for planting
Kitale	1	Zea mays

KEPHIS managed quarantine facilities with plants under monitoring

1.2.5 *Kenya Standing Technical Committee on Imports and Exports (KSTCIE) Activities*

The Corporation undertook and coordinated evaluation of applications for introduction of bio-control agents and other regulated article products. The Kenya Standing Technical Committee on Imports and Exports (KSTCIE) facilitated importation of products based on live organisms, plants and animal bi-products. This was achieved through organising technical meetings and inspection of containment facilities. In the year, 62 facilities were inspected during efficacy testing for KSTCIE materials which included bio-fertilisers, biological control agents and organic fertilisers. 44 applications were made of which 35 were approved for efficacy trials and 9were approved for commercialisation. In total, 8 meetings were held during the year to discuss applications under KSTCIE.

1.2.6 *Genetically Modified Organisms regulation*

KEPHIS is one of the regulatory agencies charged with monitoring research on genetically modified organisms in the country in consultation with the NBA as the coordinating agency. In support of the implementation of provision of the Biosafety Act, a number of GMO facilities were monitored and submitted samples were analysed. KEPHIS worked together with the NBA in evaluating introduction of GMO which were mainly for research. In order to safeguard against unauthorized imports of GMOs through ordinary permits, KEPHIS conducted 15 facility inspections with the aim of ensuring compliance with the laid down regulations on handling of genetically engineered materials. The materials on containment that were inspected include genetically engineered sweet potato against sweet potato viruses, genetically engineered cassava against cassava mosaic disease, genetically engineered cassava against cassava brown streak virus, bio-fortified cassava, maize stacked with insect resistance gene and drought tolerant gene, transgenic banana against banana xanthomonas wilt, transgenic maize, transgenic sorghum, transgenic cassava against cassava brown streak disease, GMO sweet potato with weevils resistance, GMO resistance to cassava bacterial blight disease, GMO resistance to late blight in potatoes, GMO resistance to banana wilt, GMO yam resistance to nematodes and GMO research maize against the Maize Lethal Necrosis Disease.

During the year, the Corporation developed a National Performance Trials manual for Bt-Cotton and Bt-Maize. Also, four permits were issued to allow for importation of GMO materials for trials and 62 GMO samples were received and analysed at the molecular laboratory. Only 1 sample tested positive for genetic modification. The samples received for analyses were maize grains, wheat, soya beans, beans, nutrient supplements, animal feed cotton, popcorns, baby cereals and food additives.

1.3 PEST RISK ANALYSES (PRAs) TO FACILITATE IMPORTS

KEPHIS facilitates access to new markets and evaluates imports to prevent introduction of harmful pests and diseases. 26 PRAs were conducted to facilitate importation of the commodities mentioned in table 3.

Table 3: PRAs conducted for import commodities

	Plant species evaluated	Commodity type
1	Capsicum spp, Melissa officinalis Valeriana officinalis	Seed
2	Capsicum spp, Lycoperscon esculentum	Pollen
3	Chrysanthemum spp.	Cuttings (rooted/unrooted/tissue culture)
4	Limonium sinuatum, Liliumspp Orchidaceae	Cuttings (rooted/unrooted/tissue culture)
5	Cocos nucifera	Seed nuts & embryo cultures from Cote D'Ívoire

6	Prunus persica (peach) Prunus persica (peach) Prunus armeniaca (Apricots) Prunus domestica (plums) Vaccinium corymbosum (Blue berry), Citrus spp (Citrus) Phoenix dactylifera (Date palm) Actinidia deliciosa (Kiwi) Rubus spp. (Black berry) Rubus spp. (Raspberry) Litchi chinensis (lychee)	Fruits
7	Citrus (Citrus spp)	Citrus fruits from Pakistan
8	Mangifera indica	Mango fruits from Pakistan
9	Elaeis guineensis (African OilPalm)	Seedlings from Ghana
10	Solanum tuberosum (Seed potato)	Seed tubers from Germany
11	Solanum tuberosum (Potato)	tubers from Rwanda
12	Solanum tuberosum (Potato)	seed tubers from France

The Corporation also provided PRA technical information to facilitate access to foreign markets. Six technical information reports were provided to trading partners to facilitate conclusion of PRAs which included export of avocado fruits to South Korea, export of Stevia plants to China and Zimbabwe, export of tomato seed to Paraguay, export of scabiosa plants to Columbia, export of avocado fruits to South Africa and export of avocado fruits to Thailand.

1.4 Surveillance, Early Warning System and Rapid Alert Response to Pests

KEPHIS continued to implement the early warning and rapid alert strategy for pests by carrying out surveillance for 16 emerging pests. These pests included Ceratitis capitata on Capsicums, Papaya mealy bugs in Paw Paws, False Codling Moth in Capsicums, Asian Psyllid and African citrus psyllid in Citrus and Muraya, Coconut Lethal Necrotic Disease, Fall Army Worm, Citrus greening disease, Clavibacter Michiganense in Tomatoes and Potatoes, Potato Cyst Nematode in Potato, Alternaria padwickii in rice, Pectobacterium in Potato, Ralstonia in Potato, Passion fruit Woodiness Disease in Passion, Tomato viruses in Tomatoes and Potatoes and Oxallis Stricta in Rosa spp.

(Left) Inspectors scouting for symptoms and (right) drilling to collect samples from coconut trees during surveillance for coconut lethal yellowing disease

Severe infestations by papaya mealy bugs (paracoccus marginatus) observed during surveillance in Kwale, Mombasa, Kilifi and Taita Taveta counties

Establishment of an area of low pest prevalence is one of the components of systems approach of managing pests in order to access new markets. The Corporation developed two protocols for establishment of an area of low pest prevalence for False Codling Moth(Thaumatotibia leucotreta) in Capsicum production areas and for fruit fly in Mango production areas. During the year, the Corporation commenced systems approach towards creation of 5 crop production sites with low pest prevalence. This was achieved through the introduction of pheromone traps, field sanitation and training farmers. Activities in five areas are ongoing and include the following sites:

1. Creation of fruitfly area of low pest prevalence for mangoes in Tana River County
2. Creation of fruitfly area of low pest prevalence for mangoes in Makueni County
3. Creation of fruitfly area of low pest prevalence for mangoes in Elgeyo Marakwet County
4. Creation of fruitfly area of low pest prevalence for mangoes in Tharaka Nithi County
5. Creation of Area of Low Pest Prevalence for False Codling Moth Plantation Herbs in Nakuru County and JimFresh Limited in Kajiado County

1.5 Germplasm Exchange

KEPHIS hosts tissue culture and virus cleaning laboratories to facilitate research germplasm cleaning and exchange. During the year, the Corporation provided clean virus-free planting material through tissue culture for Sweet Potato and Cassava. This is expected to allow introduction of better cultivars available for Kenyan farmers hence improve food security. The varieties cleaned included the following:

- **Sweet Potatoes:** Kabode variety; 10,300 cuttings and Vitaa variety 10,570 cuttings produced;
- **Cassava:** 12 clones cleaned and 4,460 virus free planting material availed and exchanged with other countries.

60,020 healthy sweet potato vines were distributed via the Sasha Project to Kakamega, Kisumu, Kitale, Kirinyaga and Mombasa; 12 clones were cleaned of viruses and 4,460 viruses free planting material availed.

1.6 Laboratory Analyses and Pest Diagnostics

KEPHIS has six accredited laboratories that undertake bacterial, viral, fungal, nematode and insect identification. The laboratories are equipped with modern facilities and equipment. The molecular laboratory has equipment for pest identification which include real-time PCR, conventional PCR, serological equipment and a portable amplification platform for Loop-Mediated Isothermal Amplification (LAMP). During the year, the laboratory received a boost from the EU SMAP project through purchase of new equipment and capacity building of staff. Several diagnostic methods such as DNA barcoding for insects were developed and validated. This method has been used in identification of new insect pests including the Fall Army Worm (Spodoptera frugiperda)

5,050 samples were analysed against different pests and diseases. The samples tested represent various pests collected during certification, surveillance and from imports. These are as shown in table 4.

Table 4: Pests tested during the period on various plants and plants products

	Harmful pathogens	Commodity
1.	Xyllela fastiodiosa	Plants for planting
2.	Bemisia tabaci and related viruses	Plants for planting
3.	Ralstonia solanaceaurum Race 1	Roses
4.	Puccinia horiana	Chrysanthemums
5.	False codling moth	Capsicum
6.	Bactrocera dorsalis	Mango
7.	Thrips palmi	Various crops and weeds
8.	Ceratitis capitata	Chillies
9.	TSWV	Tomato
10.	Potato cyst nematodes	Potato
11.	Fall armyworm	Maize

12.	Helicoverpa armigera	Roses
13.	Spodoptera litoralis	Roses
14.	Coconut yellow lethal necrosis	Coconut
15.	PVY strains	Potato
16.	MNLD related viruses	Maize

1.7 Surveillance at international arrivals at the point of exit and entry

KEPHIS undertakes surveillance at points of entry and exit. In the year, 1,423 interceptions were made totalling to 4,635 kilogrammes of plant materials. The plant materials intercepted included wood, fruits and vegetables such as Aubergines, Yams, dry Chillies, Seeds, Dates, Seedlings and Herbs.

During the year, 393,104.45 kilogrammes of produce destined for the export market was rejected. Table 5 shows various produce types and quantities and the reasons for rejection:

Table 5: Rejection and advice notices in kilogrammes

Description	Produce type	Quantity (kgs)	Reasons for rejection
Cut flowers	Mixed flowers	225,308.66	Presence of Thrips, White flies, Leaf miner, Red spidermites, False Codling Moth, Spodoptera spp, Helicoverpaarmigera,Aphids, Spodoptera spp/ Lepidoptera eggs, Botrytis, snails and due to poor grading
Fruits	Mixed fruits	7288	Presence of Mealybugs, being soiled, being of poor quality and woodiness disease
Vegetables	Mixed vegetables	112,560.29	Presence of Aphids, leafminer, Diamond Back moth (DBM), Helicoverpa armigera, Thrips, white flies, soil, moulds, presence of leaves, Athracnose and False Codling Moth.
Herbs	Mixed herbs	47,947.5	Presence of Whiteflies, Thrips, Aphids, Red spidermites, leafminer and its oviposion/feeding marks, weeds,Moth eggs, Lepidoptera,downy mildew and not approved and Spodoptera spp
TOTAL	**393,104.45Kgs**		

1.8 Notifications of Interceptions done by other NPPOs on Kenyan Produce

KEPHIS received 81 interception notices due to non-compliance in the destination countries mainly due to harmful pests and documentation. The interceptions have significantly reduced in the last five years as shown in figure 5.

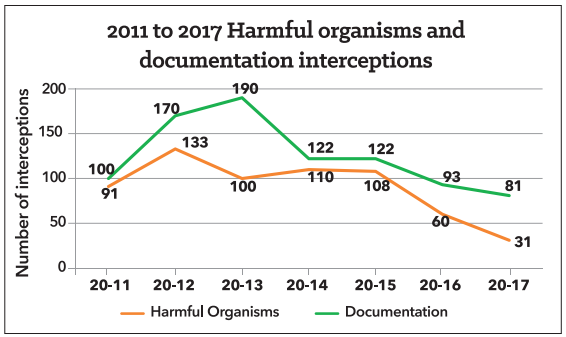


Figure 5: Trends in interceptions due to harmful organisms and documentation (2011-2017)

Interceptions attributed to harmful organisms were mainly due to Liriomyza sativae, Thaumatotibia leucotreta, Bemisia tabaci, non-European Tephritidae, Frankliniella occidentalis, Spodoptera littoralis and Thysanoptera.These are summarised in figure 6. The main commodities intercepted due to harmful organisms were mainly chillies, bedding plants, basil and roses. Other causes of interceptions included lack, incorrect or invalid documentation resulting from inadequate or invalid additional declaration, erroneous or incomplete documents, lack of phytosanitary certificate(s), no letter of authority, prohibited commodities, incorrect identity declared on document(s) and lack of special requirements, among others. Figure 7 summarizes the proportion of causes of interception during the year.

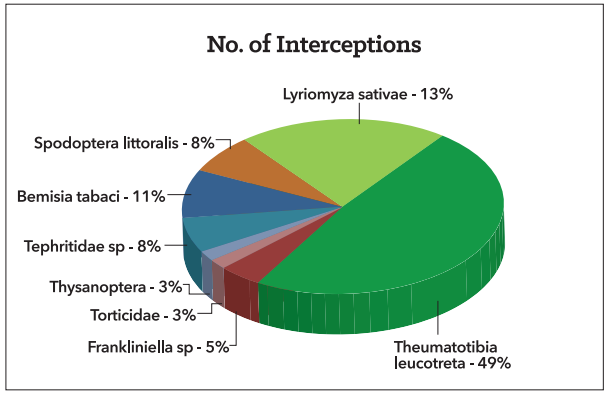


Figure 6: Interceptions due to harmful organisms for the year 2016-2017

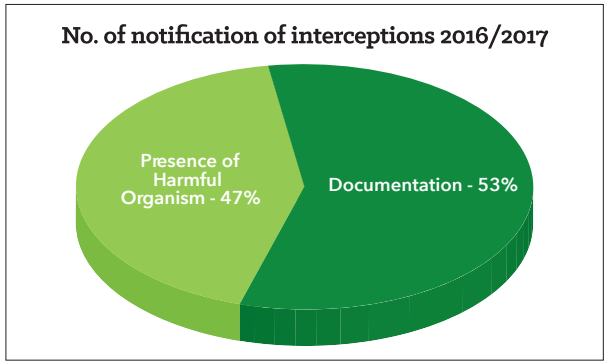


Figure 7: Summary of major causes of interception notifications in the year

To address interception issues locally and internationally, KEPHIS developed an Interception Policy which provides step by step procedures for handling non-compliances. The Policy stipulates the responsibility of other stakeholders in addressing the non-compliances. Through guidance by this Policy, follow ups on interceptions were conducted and corrective actions recommended.

1.9 Skilled Manpower Development, Promotions of Micro Enterprises and Stakeholder Engagements

The Corporation continued to contribute towards increased skilled manpower through trainings under COPE. During the year, 455 stakeholders were trained on various phytosanitary matters: training exporters on the False Codling Moth, risk based inspection and other phytosanitary port activities for inspectors, Barcoding for insect identification for inspectors and laboratory technologists, training on Leaf Miner(Tuta absoluta) identification and management for students, nursery operators training on management of nurseries and stakeholders training on ISPM 15 on wood packaging material.

431 clients were trained on online requests for certification documents on the KEPHIS website for the export and import certification systems. The trainings were conducted across the various stations including the Moyale Border Post. To support the E-government Policy, the Corporation registered 706 new users to its online import certification system and increased from 451 registered in the last financial year.

KEPHIS also contributed towards developing and supporting the growth of Micro and Small Enterprises (SMEs) in the agricultural sector by registering 163 new exporters among them women and youth owned companies.

To enhance visibility and promote agricultural production, KEPHIS continued to disseminate information on KEPHIS services and market access in various forums and in collaboration with county governments. Promoting avocado growing for market access in the non-traditional producing counties was enhanced during the year. Two trainings on avocado, pawpaw and mango fruits for export were conducted in collaboration with the county governments of Kisii and Kericho. Farmers in Kericho County were also trained on mitigating against the Maize Lethal Necrosis Disease.

KEPHIS Managing Director Dr. Esther Kimani explaining a maize variety tolerant to the Maize Lethal Necrosis Disease to CS Charles Keter(right), Kericho Governor Prof Paul Chepkwony (in glasses) and Agriculture PS Dr. Richard Lesiyampe (left).

The Corporation undertook to enhance knowledge and technology transfer to farmers by providing advisory services through five mobile plant health clinics. Plant health clinics on the potato cyst nematode which is an emerging pest of potato in Kenya were conducted in West Pokot, Trans Nzoia, Baringo, Narok, Laikipia, Elgeyo Marakwet and Taita Taveta.

To further provide advisory services to farmers, the Corporation prepared 16 fact sheets on pests of quarantine and economic importance.

The fact sheets are on the KEPHIS website for public use. The fact sheets provide information on the following pests: Cassava brown streak viruses (Cassava brown streak disease-CBSD) in cassava, Citrus huanglongbing (greening) disease-HLB of citrus, Mango weevil of mangoes, Impatiens Necrotic Spot Virus (INSV) of plants for planting, Maize Lethal Necrosis Disease in Maize, Passion fruit woodiness disease in passion fruits, Globodera rostochiensis and Globodera pallida (Potato Cyst Nematode) in poatato, Prunus necrotic ringspot virus (Almond bud failure) in Rosa spp, Pectobacterium atrosepticum (potato blackleg disease) in potato, Ralstonia solanacearum Race 1 (Bacterial wilt of solanaceous crops) in Rosa spp, Alternaria padwickii in rice andClavibacter michiganensis subsp. michiganensis (bacterial canker of tomato) in tomatoes.

1.10.1 Trade and Standards

During the year, KEPHIS participated in its international obligations. The Corporation contributed to the development of 12 International Standards on Phytosanitary Measures (ISPMs). The standards reviewed include: Amendments to ISPM 5 2016 (Glossary of phytosanitary terms), Revision of ISPM 6: National surveillance systems, ISPM on cut flowers and foliage (2008-005), ISPM on Requirements for the use of temperature treatments as a phytosanitary measure, ISPM on Phytophthora ramorum, ISPM on Fusarium circinatum, ISPM on Candidatus Liberibacter solanacearum, ISPM on annex Arrangements for verification of compliance of consignments by the importing country in the exporting country (2005-003) to ISPM 20 (Guidelines for International movement of wood (2006-029), ISPM on International movement of growing media in association with plants for planting (2005-004), ISPM on Phytosanitary import regulatory system, ISPM on International movement of seeds (2009-003) and International movement of vehicles, machinery and equipment (2006-004).

The Corporation also nominated experts to participate in review on various standards which included standard on Bactrocera dorsalis complex (2006-026), review of ISPM 8 (Determination of pest status in an area) (2009-005) and Sea Container Task Force to supervise implementation of the Complementary Action Plan for Assessing and Managing the Pest Threats Associated with Sea Containers.

KEPHIS also participated in three standard making forums: Regional IPPC workshop in Addis Ababa, Ethiopia from 14th-16th September 2016 which discussed various standards at the regional level which was under the African Union supported by the IPPC headquarters in Rome. The 12th Session of the Commission on Phytosanitary Measures (CPM-12) which was convened in Incheon, Republic of Korea at Songdo, Convensia Center from 5th to 11th April 2017. Various standards were discussed and posted in the IPPC website. IPPC Secretariat released the new Online Comment System (OCS) for Contracting Parties to comment on the July 2016 consultation period. The Corporation adopted the new OCS in submitting to the IPPC.

1.10. 2 East African Community (EAC)

KEPHIS coordinated seven activities under the EAC that included: awareness on Implementation of the EAC SPS Protocol, Drafting of EAC SPS Bill, 2017development of priority areas and development of proposals for its funding, meeting of experts on finalization of a regional SPS work plan under the EAC AND USA Cooperation agreement on trade facilitation, Sanitary and Phytosanitary (SPS) measures and technical barriers to trade, 13thto 15th September, 2016, national consultations on finalization of work plans under the EAC and USA Cooperation agreement on trade facilitation, sanitary and phytosanitary measures, and technical barriers to trade, 1st to 16th August, 2016, The 20th EAC regional forum on non-tariff barriers that took place on 30th March – 1st April, 2016 in mount Meru hotel, Arusha, Tanzania and the East Africa Border Control Training that took place 23rd to 27th January 2017.

1.10. 3 Bilateral commitments

KEPHIS coordinated and participated in four bilateral activities commitments: Kenya–Ukraine agreement aimed atestablishing bilateral business; Kenya–Turkey agreement on Agricultural Cooperation, Kenya – Thailand agreement aimed at achieving a bilateral agreement for mutual benefit and Kenya – India agreement on fumigation with methyl bromide.

1.10.4 Border training

KEPHIS undertook sensitization and created awareness to stakeholders on SPS and Trade Facilitation whose purpose was to support the

EAC region One-Stop-Border posts at all entry points. Six stakeholder awareness trainings were undertaken at Busia, Isebania, Malaba, Namanga, Taveta and Lunga Lunga.

1.10. 5 National Trade Facilitation Committee (NTFC)

NTFC was gazetted and KEPHIS is a member through the Trade and Standards department. During the year, the following was achieved: drafting of a three year work plan of national trade facilitation committee for fund sourcing and participation in drafting of a budget proposal under the WTO - TF Agreements.

1.10.6 Continental Free Trade Area (CFTA)

KEPHIS Participated in two meetings: the CFTA meeting in Kigali from 6th -10th February 2017 to prepare drafts. Draft prepared included NTB & TBT TWG draft work plan and Draft Programme for the 2nd Meeting of the Continental Free Trade Area Technical Working Group on NTB&TBT that was held on 24th – 28th April 2017 Nairobi, Kenya and COMESA EAC-COMESA-SADC assessment SPS/TBT compliance and associated costs workshop that took place in KEPHIS Headquarters 12th January 2017.

1.10.7 AGOA PARTICIPATION

The Corporation participated in various forums to ensure agricultural interests were deliberated in the AGOA Forums in the year under review.

2.0
SEED CERTIFICATION AND PLANT VARIETY PROTECTION

2.1 Plant Breeders Rights (PBR)

KEPHIS serves as the liaison office for the International Union for the Protection of New Varieties of Plants (UPOV) and plays a major role in the administration of Plant Breeders Rights (PBR) in Kenya.

PBR are proprietary rights granted exclusively to persons or institutions that have discovered or developed new varieties of plants and have filed the application with KEPHIS for protection of the variety as part of their intellectual property. The rights are granted for a specific period of time and have to be renewed/maintained annually; PBRs are granted in compliance with internationally recognized standards i.e. Distinctness, Uniformity and Stability (DUS) tests and novelty criteria.

Protecting varieties encourages breeders to develop new varieties that can be commercially exploited and they in turn earn royalties from the protected varieties. Variety protection also enhances competition amongst breeders thus overall improvement of the varieties available for commercial exploitation. Lastly, variety protection has allowed breeders to recover and profit from their investment, commit to the breeding process and giving recognition to the breeders themselves. The PBR office has to date received 1,590 applications as shown in figure 8.

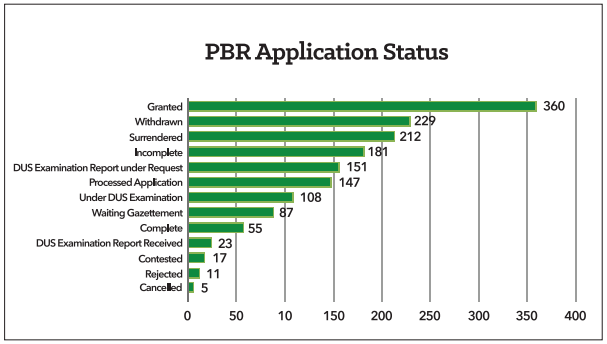


Figure 8: Summary of PBR Application status

During the period under review, there were 76 PBR applications and 14 withdrawals as summarised in Table 6 and Figure 9.

Table 6: Summary of the number of PBRs received and withdrawn during the –year

Species	PBR Applications		PBR Withdrawals	
	No.	Country of Origin	No.	Country of Origin
Alstroemeria	4	Netherlands		
Papaya	4	Kenya		
Raspberry	1	Spain		
Gypsophila	4	Colombia – 1		
		Japan – 1		
		Israel – 2		
Solidargo	2	Israel		
French Beans	3	France		
Irish Potato	1	Kenya		
Maize	2	Kenya		
Tea	10	Kenya		

Chrysanthenum	4	Netherlands		
Rose	41	Australia – 3	14	Netherlands
		France – 3		
		Germany – 1		
		Kenya – 8		
		Netherlands – 25		
		Spain - 1		
TOTAL	**76**		**14**	

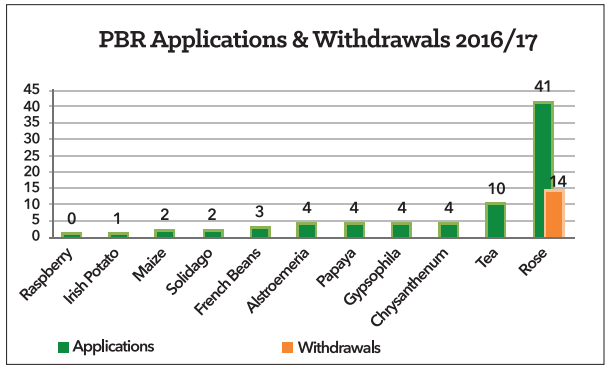


Figure 9: Summary of applications and withdrawals during the year

Rose varieties had the highest number of applications during the year with 41 applications. Most of the applications were from The Netherlands and Germany. During the year, 14 Rose varieties were withdrawn.

30 PBRs were issued in the year 2016/2017. The protection status was for Roses all originating from the Netherlands. In the same period, there were 18 grant surrenders, 14 of them being for the Rose variety, 3 of the Alstroemeria varieties and a single Golden Rod variety. This is shown in table 7 and figure 10.

Table 7: Summary of the number of PBRs granted and surrendered during the period 2016-2017

Species	PBR Granted	PBR Surrendered		
	No.	Country of Origin	No.	Country of Origin
Alstroemeria			3	Netherlands
Golden Rod			1	Netherlands
Rose	30	Netherlands – 13	14	Netherlands – 13
		Germany - 17		France - 5
TOTAL	**30**		**18**	

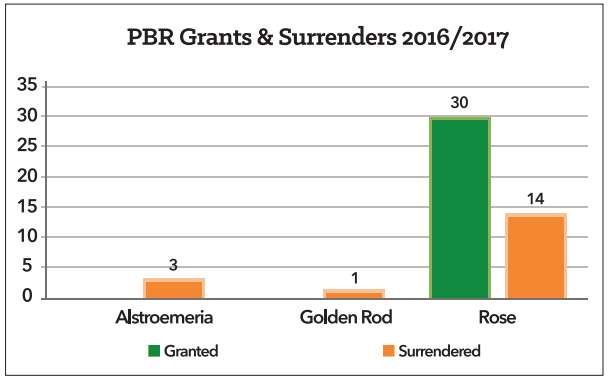


Figure 10: Summary of PBR Grants and Surrenders during the year

2.2 National Performance Trials (NPT)

KEPHIS has the mandate to carry out National Performance Trials on behalf of the National Performance Trials Committee (NPTC). This involves testing the yield potential of varieties before release into the market. Planting of varieties and evaluation of data gathered from trials planted was done in suitable agro-ecological zones for the maincrop seasons.

Data was submitted to the NPTC for review and release according to the set criteria. A subset was subsequently forwarded to the National Variety Release Committee (NVRC) for further deliberations and the varieties recommended for release are gazzetted and added in the National Variety Database.

In the period under review, the trials were categorized in terms of management:

1. Client managed trials where a client with technical knowledge runs the trials with KEPHIS playing a defined supervisory role on behalf on NPTC
2. KEPHIS managed trials where KEPHIS fully manages trials on behalf of NPTC

Out of 251 crop varieties planted, 206 (82%) were KEPHIS managed while 45 (18%) were client-managed (Figure 11)

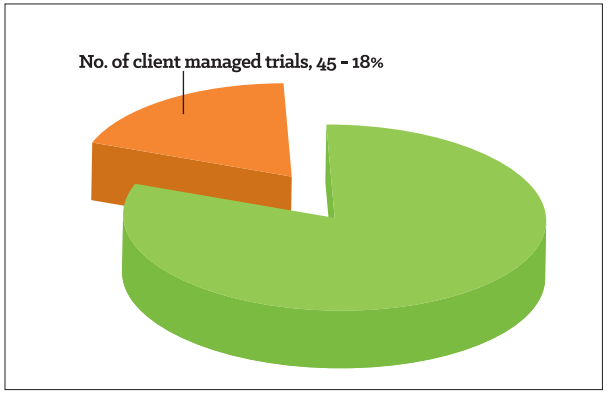


Figure 11: Proportion of crop by management

In the KEPHIS managed trials, maize had the highest number (111), followed by sorghum (54) while the least was sorghum (1) with barley, mulato, oats, pear millet and rice not being managed by KEPHIS at all (Figure 12).

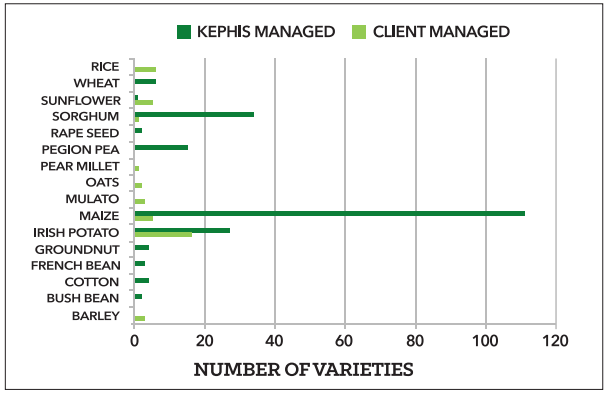


Figure 12: Distribution of crop varieties managed during the year

Most of the varieties used in NPT were from KALRO Katumani (80, 31%) and Agriseed (19, 7%). 91% of varieties in KALRO-Katumani were KEPHIS managed while 10 (83%) of the varieties from Western Seed Company. Limited were client managed). Others include Syngenta Foundation, KALRO-Kitale, Narayan Ramnathan and Starke Ayres Kenya Limited all submitting one seed each for NPT(Figure 13).

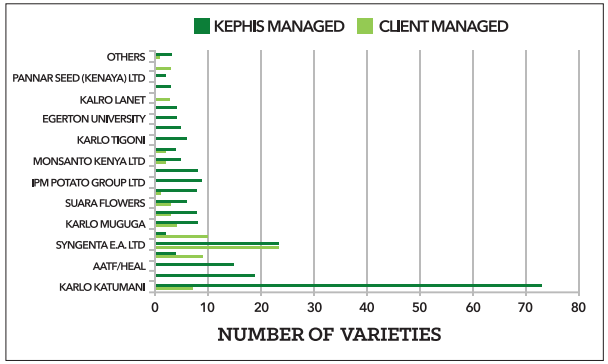
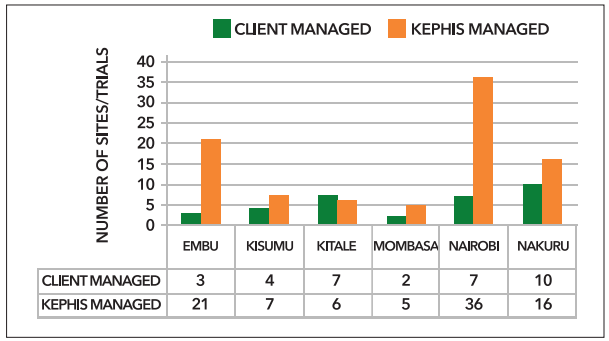


Figure 13: Distribution by sources of crop varieties

During this period, Nairobi had the highest number (35%) while Mombasa had only 7(6%) trials which was the least (Figure 14).



	EMBU	KISUMU	KITALE	MOMBASA	NAIROBI	NAKURU
CLIENT MANAGED	3	4	7	2	7	10
KEPHIS MANAGED	21	7	6	5	36	16

Figure 14: Number of sites/trials among KEPHIS regional offices

National Performance Trials Committee (NPTC) Meeting

During the year, the NPTC recommended 70 varieties for release. These were distributed as shown in figure 15.

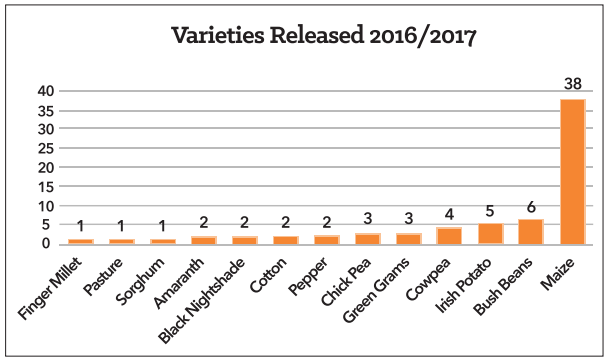


Figure 15: Varieties released during the year

Maize constituted the largest percentage (54.29%) of the varieties released in the year. This shows that breeders and seed merchants are continously paying attention to the ever changing climatic conditions and are keen to bring in seedsto the market that are adaptable to the environment and are higher yielding as compared to the existing varieties in the market. The importance of maize as a food security crop is evidenced by the great priority given to the crop by seed merchants and breeders.

8.57% of the varieties released constituted Bush Beans and 7.14% were Irish Potato. Other crop varieties released during the period under review were Cowpeas, Green Grams, Chickpeas, Pepper, Cotton, Black Nightshade, Amaranth, Sorghum and Finger Millet.

National Variety Release Committee (NVRC) Meetings

The National Variety Release Committee (NVRC) had 2 meetings during the year. IThe committee recommended the release of 69 varieties; 50 varieties during the first meeting in March 2017 and 19 varieties during the second meeting in June 2017. Figure 16 shows the distribution of the varieties.

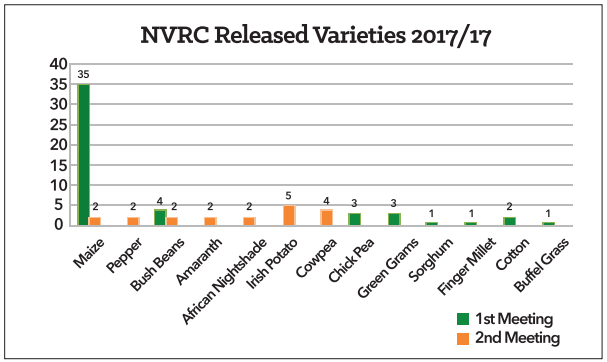


Figure 16: Varieties released during the year

National Performance Trials requires seed merchants to submit seeds to be tested for performance before release to the market. Figure 17 shows the different merchants who submitted their seed for NPT.

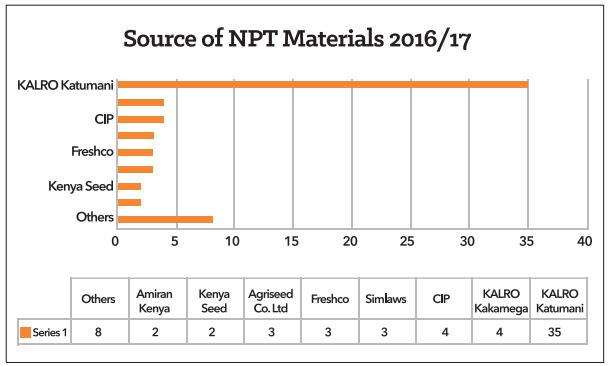


Figure 17: Source of NPT materials for the period 2016-2017

Other seed merchants that submitted their materials for testing included Dryland Seeds, KARI Embu, KARI Mtwapa, Rae Charitable Trust, Rongo University, Suera Flowers Limited, Syngenta E.A. Limited and Top Serve E.A Limited.

From 2004/2005 financial year, KEPHIS has conducted NPT trials for various varieties and recommended the suitable ones for release into the market. Figure 18 and table 8 shows the trend of released varieties from the year 2004/2005 to 2016/2017

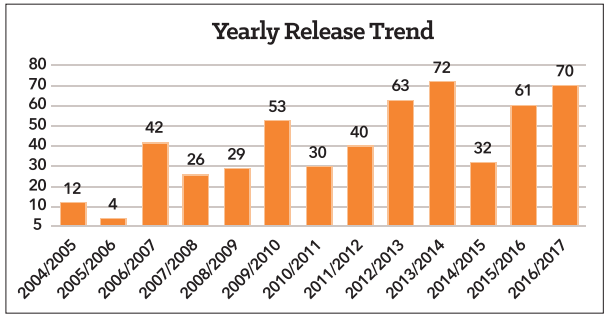


Figure 18: Trends in varieties released 2014 - 2016

Table 8: Percentage change in trends in variety release

Period	Number released	% change
2016/2017	70	14.75%
2015/2016	61	90.63%
2014/2015	32	-55.56%
2013/2014	72	14.29%
2012/2013	63	57.5%
2011/2012	40	33.33%
2010/2011	30	-43.39%

There was a 14.75% increase in the varieties released in the period 2016/2017 as compared to the period 2015/2016.

2.3 Distinctness, Uniformity and Stability (DUS) Trials

DUS was carried out for two seasons of the calendar year after submission of varieties for testing by breeders and seed merchants. DUS is mainly done for testing the candidate varieties for distinguishing features that vary from other varieties.

For the period under review, Maize had the highest number of test candidates at 32 followed by rice which had 26 entries undergoing DUS testing. Pigeon Peas, Canola and Finger Millet had 2 varieties tested for uniqueness and distinguishing characteristics from other varieties already developed. Table 9 and Figure 19 summarizes the DUS tests done during the year.

Table 9: Summary varieties that underwent of DUS tests done during the 2016-2017 period

SOURCE	MAIZE			OTHER CROPS										
	HYBRID	SC	LINE	PIGEON PEA	RICE	SORGHUM	IRISH POTATO	GROUNDNUTS	CANOLA	COTTON	FINGER MILLET	FRENCH BEANS	GRASS	TOTAL
Egerton University				2				1			2			5
Syngenta E.A. Ltd						2								2
KALRO	7	1	4		2		5					1	12	32
Kenya Seed Co.								1						1
Advanta Ltd.	2								2					4
Agriseed Co. Ltd.	5		1			1		2		4				13
Plgnnegy Pty. Ltd.												2		2
East African Seed Co.		3				1								4
AATF	9				24									33
TOTAL	23	4	5	2	26	4	5	4	2	4	2	3	12	96

In the period under review, 32 Maize varieties were subjected to DUS testing; 26 varieties of rice and 12 varieties of grass were also tested.

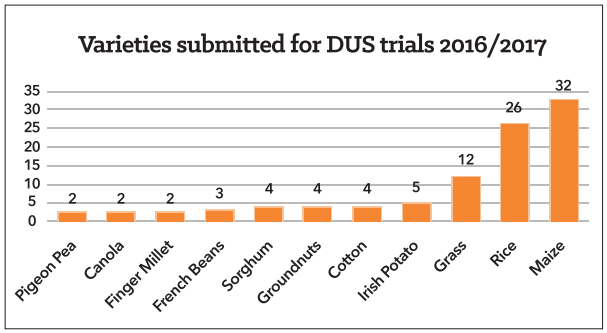


Figure19: Varieties submitted for DUS testing during the 2016-2017 period

The varieties tested were from various organizations as indicated by figure 20.

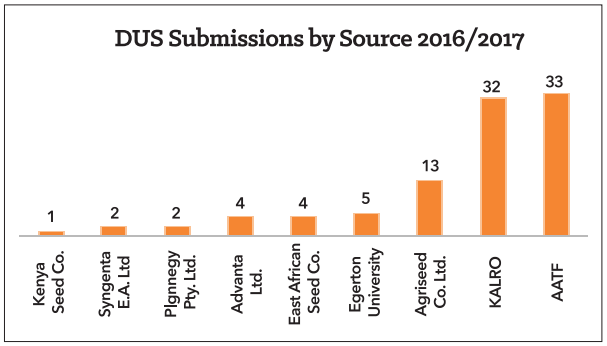


Figure 20: DUS submissions by source

The African Agricultural Technology Foundation submitted 33 varieties for testing, KALRO had 32 varieties and Agriseed Company Limited had 13 varieties. Other DUS candidates submitted were from Egerton University, East African Seed, Advanta, Syngenta E.A. and Kenya Seed Company.

In the past five years, trends show a general decline in DUS submissions with significant peaks in 2004 - 2005 and 2014 - 2015 as shown in figure 21.

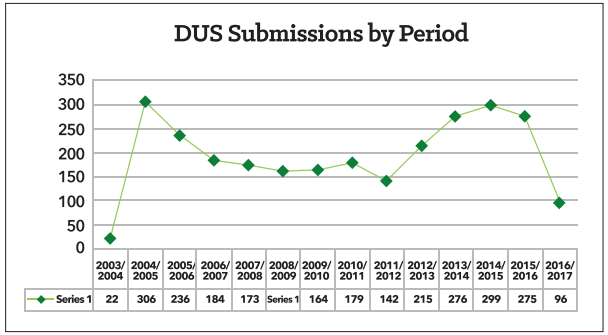


Figure 21: Comparison of DUS candidates from 2004 – 2016

2.4 SEED CERTIFICATION

The objective of seed certification is to supply high quality seed to farmers, which is true to identity, high in purity and germination capacity and free from pests and diseases. Seed quality is the most important aspect in crop production, as high quality seed is essential for good yields and good returns and minimizes the likelihood of crop failure. It is achieved through field inspection(s) of seed crops during active growth stage, processing, inspection, sampling and testing in the seed laboratory. Certified seed must meet the minimum quality standards as stipulated in the Seeds and Plant Varieties (Seeds) regulations of CAP 326.

2.4.1 *SEED FIELD INSPECTIONS*

In the period under review, 20,014.58 hectares of seed crops were registered for field inspections, compared to 34,391.27 hectares in the 2015/2016 financial year, a decrease of about 41.8%. Of the total hectares entered for inspection, 9,657.01 hectares were approved, 364.67 hectares rejected, 377.98 hectares withdrawn and 9,593.16 hectares were still pending inspection by the close of the 2016/2017 financial year (Table 10). The hectarage of rejected fields decreased from 858.84 hectares in 2015/2016 to 364.67 hectares in 2016/2017 financial year, a decrease of about 57.5 %. The major reasons for rejection of the seed crops were:

- Off types
- Selfing in maize
- Varieties being not true to type
- Admixtures

"The objective of seed certification is to supply high quality seed to farmers, which is true to identity, high in purity and germination capacity and free from pests and diseases."

SEED CERTIFICATION AND PLANT VARIETY PROTECTION

Table 10: Hectares of seed crop per species

Botanical Name	Common Name	Hectares planted	Hectares approved	Hectares Rejected	Hectares Withdrawn	Hectares Pending
Abelmoschus esculentus	Okra	36.20	36.20	0.00	0.00	0.00
Amaranthus spp	Pig weed	15.20	11.20	0.00	1.20	2.80
Avena sativa	Oats	22.26	22.26	0.00	0.00	0.00
Boma Rhodes	Rhodes grass	429.02	311.91	66.59	0.00	50.52
Brassica oleracea	Collards	13.20	12.00	1.20	0.00	0.00
Cajanus cajan	Pigeon peas	5.00			5.00	
Capsicum spp	Pepper	0.96	0.96	0.00		0.00
Citrullus lanatus	Watermelon	0.16	0.16	0.00		0.00
Cleome gynandra	Spider plant	4.00	1.40	0.00	0.00	2.60
Desmodium intormitum	Tick Clover	0.40	0.40	0.00	0.00	0.00
Eleusine coracana	Finger millet	0.80	0.80		0.00	0.00
Glycine max	soya bean	148.32	35.52	0.00	0.00	112.80
Helianthus annus	Sunflower	134.17	97.05	0.90	0.00	17.00
Hordeum vulgare	Barley	445.92	438.72	7.20	0.00	0.00
Lablab purpureus	Dolichos	2.00	2.00			
Oryza sativa	Rice	139.28	124.60	4.00	0.00	10.68
Pasture grass	Pasture	696.47	341.36	0.00	2.83	352.28
Pennisetum glaucum	Pearl Millet	33.60	29.60	4.00		0.00
Phaseolus vulgaris	Beans	1,484.08	1,136.83	60.00	85.20	202.05
Pisum sativum	Peas	16.60	16.00	0.80	0.00	0.20

Sesamum Indicum	Simsim	2.00	2.00	0.00	0.00	0.00
Solanum lycopersicum	Tomato	3.49	3.49	0.00	0.00	0.00
Solanum melongena	Egg pplant	3.42	3.42			
Solanum nigrum	Black nightshade	30.40	4.80	0.00	0.60	21.30
Solanum tuberosum	Irish potato	255.45	158.01	7.43	0.40	89.62
Sorghum bicolor	Sorghum	120.90	111.30	6.40	3.20	0.00
Triticum aestivum	Wheat	2,070.59	1,485.68	25.60	8.00	551.31
Vigna radiata	Greengrams	1,234.65	1,146.20	48.45	40.80	0.00
Vigna unguiculata	Cowpeas	220.42	212.22	6.00	1.80	0.40
Zea mays	Maize	12,445.62	3,910.92	126.10	228.95	8,179.60
Grand Total		**20,014.58**	**9,657.01**	**364.67**	**377.98**	**9,593.16**

2.4.2 *Seed Processing and sampling*

The total lot weight sampled was 46,105,310.66 kilograms (Table 11). Locally produced seed and imported seed total lot weights were 37,676,585 kilogrammes and 6,055,117.80 kilogrammes respectively. The total lot weight for the seed that were re-sampled after expiry of certification validity was 2,373,609.86 kilogrammes.The locally produced seed accounted for 81.8% imported seed 13.1% while re-sampled seed accounted for 5.1% of the total weight sampled.

Table 11: Total seed lot weight sampled

Botanical Name	Common name	Locally produced(kg)	Imports(kg)	Re-sampled(kg)	Totals(kg)
Abelmoschus esculentus	Okra	79,727.00	22,450.00	28,701.82	130,878.82
Allium cepa	Onion		167,887.91	25,113.73	193,001.64
Allium fistulosum	Welsh onion			212.00	212.00
Allium porrum	Leek		5,146.00	183.98	5,329.98
Allium schoenoprasum	Chives		585.00	1.65	586.65

SEED CERTIFICATION AND PLANT VARIETY PROTECTION

Amaranthus spp	Pig weed	4,014.00		5,805.90	9,819.90
Anethum graveolens	Dill		320.00	70.00	390.00
Antirrhinum majus	Snapdragon		1.20	1.67	2.87
Apium graveolens	Celery		550.00	33.00	583.00
Asparagus officianalis	Asparagus		10.00		10.00
Avena sativa	Oats	46,214.00		105,473.00	151,687.00
Beta vulgaris	Beetroot		10,548.90	3,956.95	14,505.85
Beta vulgaris	Swisschard		26,106.30	12,632.92	38,739.22
Brasicca oleracea	Cabbage		49,646.71	22,836.05	72,482.76
Brasicca oleracea	Kale	1,098.00	12,556.80	4,621.23	18,276.03
Brassica napus	Rape		3,017.00	3,861.10	6,878.10
Brassica Carinata	Ethiopian Mustard			1,162.80	1,162.80
Brassica chinensis	Chinese cabbage		7,100.00	5,470.00	12,570.00
Brassica juncea	Mustard			499.50	499.50
Brassica oleracea	Broccolli		343.10	212.21	555.31
Brassica oleracea	Cauliflower		300.00	623.99	923.99
Brassica oleracea	Collards	115,176.00	1,000.00	17,117.03	133,293.03
Brassica rapa	Turnip		1,240.60	2,032.00	3,272.60
Capsicum spp	Pepper	627.00	12,987.87	11,387.90	25,002.77
Carica papaya	Pawpaw		203.20	12.12	215.32
Citrullus lanatus	Watermelon		29,161.26	18,416.30	47,577.56
Cleome gynandra	Spider plant	1,000.00		1,993.90	2,993.90
Coriandrum sativum	Corriander		33,260.68	5,892.00	39,152.68
Crotalaria juncea	Sunhemp	2,948.00		7,480.00	10,428.00
Cucumis melo	Cantaloupe/Muskmelon		191.00	193.01	384.01

Cucumis sativus	Cucumber		1,132.10	5,510.62	6,642.72
Cucurbita maxima	Squash		33,404.75	6,277.07	39,681.82
Cucurbita moschata	Pumpkin		27.50	1,188.93	1,216.43
Cucurbita pepo	Cougette		500.00	528.65	1,028.65
Cynodon dactylon	Bermuda grass			4,890.18	4,890.18
Daucas carota	Carrot		49,097.91	17,276.50	66,374.41
Desmodium intortum	Desmodium		1,825.00		1,825.00
Eleusine coracana	Finger millet	12,304.00	-	93,544.00	105,848.00
Eruca sativa	Roquette		1,000.00	208.71	1,208.71
Festuca spp	Fescue		600.00	867.00	1,467.00
Foeniculum vulgaris	Fennel		10.00		10.00
Glycine max	Soya bean	21,050.00	2,000.00	-	23,050.00
Gossypium Hirsutum	Cotton		3,200.00		3,200.00
Helianthus annuus	Sunflower	81,894.00	53.30	28,420.00	110,367.30
Hordeum vulgare	Barley	614,350.00	0.00	0.00	614,350.00
Lablab purpureus	Dolichos bean			10,000.00	10,000.00
Lactuca sativa	Lettuce		830.73	391.04	1,221.78
Lagenaria siceraria	Bottlegourd		3.00	72.00	75.00
Lathyrus odoratus	Sweet pea			12.00	12.00
Lavandula spp	Lavender			2.30	2.30
Lobularia maritima	Sweet alyssum		0.60		0.60
Local vegetables	Vegetables	2,075.00		2,816.00	4,891.00
Lolium perrene	Rye grass		2,500.00	209.00	2,709.00
Luffa acutangula	Ridged gourd		3.00	5.09	8.09
Medicaco sativa	Lucern		8,300.00	2,000.00	10,300.00

Momordica charantia	Bittergourd		3.00	169.00	172.00
Ocimum basilicum	Basil		90.00	106.13	196.13
Origanum majorana	Majoram			9.70	9.70
Origanum vulgare	Oreganum			4.25	4.25
Oryza sativa	Rice	108,854.00	0.00	74.00	108,928.00
Paspalum notatum	Bahia grass			350.00	350.00
Pasture grass	Pasture	121,650.00		96,920.00	218,570.00
Pennisetum clandestinum	Kikuyu grass			925.00	925.00
Pennnisetum glaucum	Pearl millet			15,000.00	15,000.00
Petroselinum crispum	Parsley		225.00	151.07	376.07
Phaseolus coccineus	Broad bean		4,102.76	4.75	4,107.51
Phaseolus vulgaris	Beans	603,551.00	0.00	20,840.00	624,391.00
Phaseolus vulgaris	French beans		438,239.76	19,159.70	457,399.46
Pisum sativum	Peas	10,215.00	334,902.00	60.70	345,177.70
Portulaca oleracea	Purslane	-	0.80	500.00	500.80
Raphanus sativas	Radish	-	450.00	812.60	1,262.60
Salvia officinallis	Sage	-	40.00	9.82	49.82
Sesamum indicum	Simsim	-		98.00	98.00
Solanum aethiopican	African eggplant	-	0.20	0.04	0.24
Solanum lycoperscium	Tomato	-	23,550.64	47,903.72	71,454.36
Solanum melongena	Egg plant	510.00	4,776.88	299.07	5,585.95
Solanum nigrum	Black night shade	4,532.00	-	-	4,532.00
Solanum tuberosum	Irish potato	1,064,825.00	176,525.00	-	1,241,350.00
Sorghum bicolor	Sorghum	398,172.00	9,400.00	32,545.08	440,117.08

Spinacea oleracea	Spinach	-	595.55	687.36	1,282.91
Tagetes spp	Marigold	-	4.80	5.20	10.00
Thymus vulgaris	Thyme	-	1.50	8.30	9.80
Triticum aestivum	Wheat	2,035,519.00	0.00	31,960.00	2,067,479.00
Vigna radiata	Greengrams	270038	0	17672	287,710.00
Vigna unguiculata	Cowpea	70,100.00	-	7,384.54	77,484.54
Zea mays	Babycorn	-	41,250.00	-	41,250.00
Zea mays	Maize	32,006,140.00	4,530,054.00	1,619,716.30	38,155,910.30
Zea mays	Sweetcorn		1,800.00		1,800.00
Zinnia elegans	Peppermint	-	4.50	16.69	21.19
		37,676,583.00	**6,055,117.80**	**2,373,609.86**	**46,105,310.66**

2.4.3 Seed testing

Seed sampled during processing was tested at the Nakuru and Kitale seed testing laboratories to determine the germination and purity capacities. Samples for the lots meeting the quality standards were labeled and allowed into the market by the respective seed companies. Lots that failed to meet the quality standards were issued with stop sale orders awaiting appropriate disposal by concerned companies. The laboratories tested 4,528 samples as summarized in table 12. The samples tested increased from 4,146 the previous year to 4,528.This was an increase of 16.4%.

Table 12: Seed samples tested

Crop	No. of samples			Weight of samples(kg)		
	Fail	Passed	Grand Total	Fail	Passed	Grand Total
Barley	14	11	25	396,200.00	330,000.00	726,200.00
Fibre	5	2	7	5,342.00	500.00	5,842.00
Flowers	10		10	0.00	0.00	0.00
Maize	300	1,426	1,726	3,027,473.24	50,159,516.00	53,186,989.24
Oats	10	2	12	126,463.00	20,160.00	146,623.00
Oil Crops	3	16	19	9,897.00	109,600.34	119,497.34

Pasture Legumes	0	11	11	0.00	15,175.00	15,175.00
Pasture/Lawn	143	136	279	33,620.00	69,782.90	103,402.90
Pulses	32	283	315	100,081.64	1,745,857.90	1,845,939.54
Rice	4	7	11	23,604.00	54,076.08	77,680.08
Sorghum/Millet	11	35	46	23,683.00	386,544.08	410,227.08
Vegetables	322	1,645	1,967	138,226.63	1,252,380.80	1,390,607.43
Wheat	5	95	100	49,900.00	2,354,969.00	2,404,869.00
Grand Total	**859**	**3,669**	**4,528**	**3,934,490.51**	**56,498,562.10**	**60,433,052.61**

2.4.5 *ISTA Samples Tested (Proficiency Test)*

Proficiency testing is mandatory for seed laboratories accredited by ISTA. The test is one of the types of programs that allow the performance of a laboratory to be determined by comparing the use of measurements in materials that are homogeneous or similar in at least two ISTA laboratories under pre-determined conditions. During the period under review, the seed laboratory received two seed species and scores obtained for the tests are as shown in table 13.

Table 13 : Proficiency test scores

Crop	NO. of samples	Test done	Score
Allium cepa	3	Germination	'A' in germination
Brachiaria brizantha	3	Purity, germination, OSD and TZ	'A' in germination, 'A' in Moisture, 'A' in Purity, 'A' in TZ
Grand Total	**6**		

2.4.6 *ISTA Certificates Issued*

During the period under review, 233 ISTA certificates were issued as shown in the table 14.

Table 14 : ISTA certificates issued

Crop	Number issued	Weight (Kg)
Sunflower	2	3208
Barley	5	150000
Maize	136	4249482.3
Oil Crops	1	19499
Pasture Legumes	1	200
Pasture/Lawn	7	7779
Pulses	6	17204
Sorghum/Millet	6	120600
Vegetables	49	46187.76
Wheat	20	556750
Grand Total	**233**	**5,170,910.06**

2.4.7 *Post Control Tests*

Post control tests are quality control checks designed to determine effectiveness of field inspections during critical active seed crop growth stages. During the year, 1,409 samples were post controlled as shown in table 15. Out of this, 96.8% passed while the rest failed mainly due to lack of trueness to type, diseases, off-types, mixtures and selfing.

Table 15: Post control tests

Species	Scored Samples	Passed	Failed
Brassica oleraceae	193	193	0
Phaseolus vulgaris	240	212	28
Solanum lycopersicon	143	143	0
Vigna radiata	11	10	1
Daucas carota	14	9	5
Vigna unguilata	16	16	0
Pisum sativun	53	53	0
Cucurbita spp.	51	51	0
Zea mays	642	634	8
Sorgum bicolor	15	15	0
Triticum aestivum	31	28	3
TOTALS	**1409**	**1364**	**45**

2.4.8 *Seed Post Certification Surveys and Licencing of Seed Stockists*

During the seed post certification surveys carried out this financial year, seed was sampled from the stockists and tested. Most of the seed sampled and tested met the minimum quality standards. A few that did not meet the standards were issued with stop sale orders and the companies concerned advised to withdraw the lots from the market. In the same period, 3,720 seed sellers were licensed to sell certified seed (Table 16) signifying a decrease of 16.5% from the 2015/2016 financial year.

Table 16: Seed sellers licensed

KEPHIS Regional office	No. of seed sellers licensed
Nairobi	441
Embu	614
Nakuru	808
Kitale	832
Kisumu	681
Mombasa	162
Naivasha	182
TOTALS	**3,720**

2.4.9 *Seed Merchant Registration*

In the period under review, thirteen new seed merchants were registered to undertake seed business as shown in table 17.

Table 17: Seed Merchants Registered in 2016 - 2017

	Name	Address	Registration Date
1	Agripom Kenya Limited	P.O.Box 1893-20100 Nakuru	08-Sep-16
2	Agventure Limited	P.O. Box 218 Timau	08-Sep-16
3	Kenagro suppliers Ltd	P.O. Box 12775-00400 Nairobi	08-Sep-16
4	African Agricultural Technology .Foundation	P.O.Box 30709-00100 Nairobi	27-Jul-16
5	Singus Enterprises	P.O Box 466 Molo	02-Dec-16
6	Gen Biotech Ltd	P.O. Box 43985-00100 Nairobi	06-Dec-16
7	Seeds2B Africa Ltd	P.O Box 45277-00100 Nairobi	06-Dec-16
8	Hamilton Associates	P.O.Box 24509-00502 Nairobi	06-Dec-16

9	Planet seeds	P.O Box 16939-00620 Nairobi	18-Jan-17
10	Salelo Company Ltd	P.O. Box 118-065 Maralala	15-Feb-17
11	Kevian Kenya Ltd	P.O. Box 25290-00603 Nairobi	24-Mar-17
12	Potato Seed Africa	P.O. Box 63249-00619 Nairobi	09-Jun-17
13	Advanta Seed International	P.O. Box 10032-00100 Nairobi	12-Jun-17

2.4.10 SEED EXPORT

Kenya exported seed to other countries that included Burundi, Ethiopia, Burkina Faso, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Somalia, South Sudan, Tanzania, and Uganda. The total amount of seed exported was 6,327,068.70 kilogrammes as shown in table 18.

Table 18: Summary of seed exports during the 2016-2017 year

Crop	Weight Exported (Kg)
Sunflower	3,208.00
Barley	150,000.00
Maize	5,249,482.00
Oil Crops	19,499.00
Pasture Legumes	200.00
Pasture/Lawn	8,069.00
Pulses	33,454.00
Sorghum/Millet	123,602.00
Vegetables	180,519.10
Wheat	556,750.00
Rice	2,285.60
Totals	**6,327,068.70**

Maize took the highest proportion of seed crop exported, followed by wheat as summarized in figure 22.

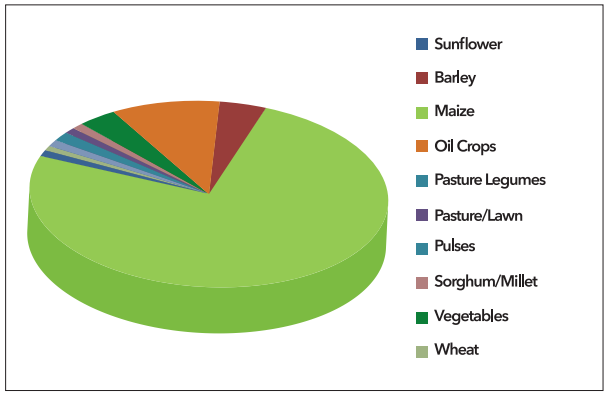


Figure 22: Proportion of seed exported per crop in 2016-2017

2.4.11 Variety Maintenance Inspections

In the course of variety multiplication to increase the quantity of available seed, it is necessary to ensure that the variety remains true to type. Trueness to type infers that the plant grown from the new seed generation does not differ significantly from the variety's description and only varieties that conform to description are eligible for certification. To ensure continued supply of quality seed, the quality of breeder's seed must be maintained as the quality of all other seed classes depend on it. The quality of breeder's seed is ensured through inspection during maintenance breeding at breeder level. In the period under review, varieties under maintenance program were inspected at various stages of the breeder's seed multiplication stage (Table 19). During these inspections rows, plots and/or acres of varieties that did not conform to the variety description and/or had off-types were rejected.

Table 19: Variety maintenance inspections

Botanical Name	Common Name	Stage	Rows/Plots/Acres	Approved	Rejected
Solanum scrabrum	African Nightshade	1	169	106	63
Solanum scrabrum	African Nightshade	2	3	3	0
A.cruentus	Amaranthus spp	1	80	79	1
A.cruentus	Amaranthus spp	2	3	3	0
Phaseolus vulgaris	Beans	1	3996	3814	294
Phaseolus vulgaris	Beans	2	223	221	2
Phaseolus vulgaris	Beans	3	2.65	2.65	
Chloris gayana	Boma Rhodes	1	1,000	782	218
Vigna unguiculata	Cowpea	1	539	429	110
Vigna unguiculata	Cowpea	3	0.25	0.25	0
Brassica Carinata	Ethiopian kale	3	0.6	-	0.6
Vigna radiata	Greengrams	1	141	141	-
Arachis hypogaea	Groundnut	3	2.8	1	1.8
Solanum tuberosum	Irish potato	2	3	3	0
Solanum tuberosum	Irish potato	3	9.345	6.945	1.5
Zea mays	Maize	1	53,989	40,230	13,789
Zea mays	Maize	2	186	185	1
Zea mays	Maize	3	27.5	15.9	11.6
Avena sativa	Oats	1	2,000	1198	1203
Avena sativa	Oats	3	12.5	0	12.5
Grass spp	Pasture	2	1054	453	226
Oryza sativa	Rice	3	2.2	2.2	-
Sesamum indicum	Simsim	3	1	0	1

SEED CERTIFICATION AND PLANT VARIETY PROTECTION

Sorghum bicolor	Sorghum	2	175	139	36
Glycine max	Soya beans	2	167	149	18
Glycine max	Soya beans	1	301	186	115
Cleome gynandra	Spider plant	1	80	53	27
Cleome gynandra	Spider plant	2	14	8	6
Helianthus annus	Sunflower	1	14,000	8,692	5,308
Helianthus annus	Sunflower	2	500	378	122
Triticum aestivum	Wheat	1	7,000	4,744	2,256
Triticum aestivum	Wheat	3	48	0	48

Key: **Stage1** **Rows**
Stage II **Plots**
Stage III **Acres**

3.0 ANALYTICAL CHEMISTRY LABORATORY SERVICES

INTRODUCTION

The Analytical Chemistry Laboratory (ACL) offers an extensive range of analytical and advisory services to customers on quality of agricultural inputs and produce.

During the period under review, the ACL continued implementing food safety programmes targeting the horticultural subsector dealing with beans and peas in pods. The sustained farm and pack house food safety audits, risk based surveillance and monitoring programmes for MRL compliance, as well as targeted farmer, agronomist and sprayers trainings resulted in a significant reduction of notifications in exported produce. One notification was reported in the 2016/2017 financial year compared to 15 the previous year. Due to sustained efforts in implementing food safety checks on (pisumsativum), exported to the EU, the increased controls were reduced from 10% to 5% sampling at the designated ports of entry into the EU. This followed implementation of EC Regulation No. 669/2009 on increased level of food safety official controls checks for pesticides residues.

To enable Kenyan fresh produce exporters to comply with the EU market requirements on food safety, and reduce the number of notifications, ACL carried out follow up audits for companies whose samples were found to have pesticide residues above the EU set MRLs. 16 companies were audited to assess the establishment and maintenance of a sustainable system which gives assurance food safety to the consumer and market requirements.

Six new companies that applied for registration to export beans and peas in pods to the EU market were audited for food safety compliance prior to registration and given access to the ECS.

The introduction of risk based audits to assure food safety compliance for export companies resulted in a remarkable reduction of 97% compared to the previous financial year of RASSF notifications on produce destined to the EU market.

A risk based monitoring programme for pesticide residues was also implemented targeting sampling and analysis of exporter produce at points of exits/pack houses and farms. 778 samples i.e. 492 beans and 286 peas were analysed and reported during the period.

The laboratory also organized and participated in stakeholder's awareness creation fora and trainings of small scale farmers in Matu, Machakos comprising of small holders farmers producing peas and beans in pods for the EU export market.

The laboratory through support from the EU SMAP expanded its scope of pesticide molecules analysed using the Liquid Chromatography Mass Spectrometer (LCMSMS) to 66 pesticides while for Gas Chromatography Mass Spectrometer (GCMS) to 32 molecules giving a total of 97 pesticides molecules. This expansion focused mainly on PCPB registered pesticides for use in fruits and vegetables and other pesticides with controlled use or banned for use in beans and peas in pods.

The laboratory also set out to improve its quality control procedures in pesticide residue analysis through staff training. 10 analysts were trained in house by an expert from the EU on pesticide residue analysis on GCMS and LCMSMS optimization.

During the period, the laboratory continued to offer advisory services to farmers regarding soil nutrient evaluation and fertilizer recommendations. To assure the quality of agro inputs used by farmers, the laboratory continued with the risk based fertiliser monitoring programme for quality and safety; 423 samples from 10 representative regions were analysed. The data will be used to advise on the Fertiliser Policy in Kenya.

The ACL has and continually seeks to maintain its accreditation status by SANAS to the requirements of ISO/IEC 17025:2005 Standard in order to assure its customers of the reliability of its test work.

Following the lapse of designated 5 year accreditation cycle, the laboratory was reassessed for reaccreditation and successfully granted continued accreditation. Notable was the increased schedule of accreditation with addition of 87 pesticides on the residue analysis method and inclusion of heavy metals analysis in the accreditation scope.

3.1 Samples Analyses

The laboratory sample analysis ranged from plant protection products, fertilizers, manures and organic compost; water for irrigation suitability, soil and plant tissue, animal feed, pesticide residue analysis in agricultural produce and environmental matrices. Table 20 and figure 23 summarises a three year trend of samples analysed in the laboratory.

During the period under review, in proportion of the samples received in the laboratory, agricultural samples for pesticide residue were the highest at 55% followed by heavy metal, fertiliser, soil and environmental samples at 15%, 11%, 8% and 6% respectively as shown in figure 24.

Table 20: Summary of samples analyzed in the last three financial years

Sample category	2014/ 2015	2015/ 2016	2016/ 2017
Agricultural Samples PRA	1433	2214	1579
Environmental Samples PRA	150	151	164
Soil	107	144	234
Water for Irrigation Suitability	15	16	52
Fertilizer	391	485	319
Manure/ Organic Compost Analysis	13	6	7
Agrochemical Pesticide Formulations	106	41	23
Heavy Metal Contaminants	925	85	418
Foods and feeds	18	15	19
Plant tissue	1	1	51
Total	**3159**	**3158**	**2893**

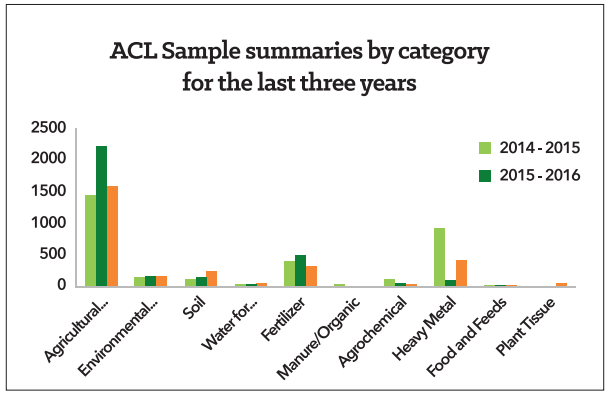


Figure 23: Samples summaries in the ACL by categories for the last 3 years

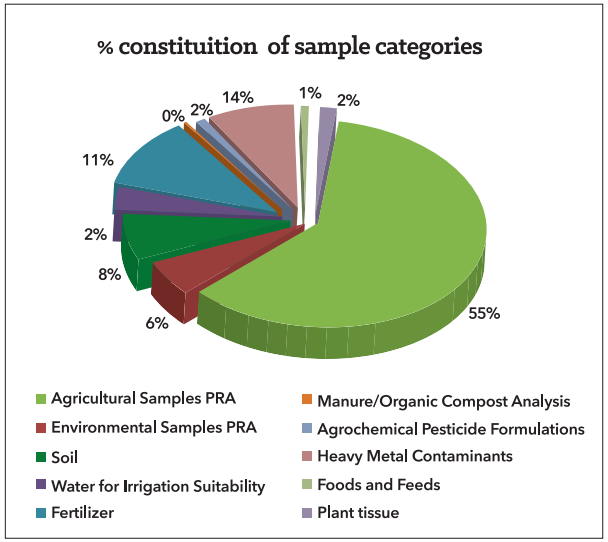


Figure 24: Total sample volume for the year 2016/2017

3.1.1 *Agricultural samples*

The number of agricultural samples submitted and analyzed in the laboratory reduced marginally compared to the previous year as shown in figure 25. Out of the total samples, 14% were customer samples while 86% were collected during the surveillance and monitoring samples programme. The high numbers of samples from surveillance and monitoring activities was in support of food safety audits and pre-export testing of beans and peas in pods as a result of increased surveillance of the commodities in the EU.

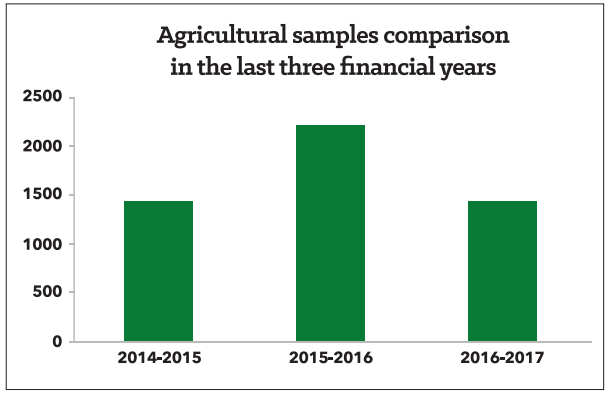


Figure 25: Agricultural sample trends in the last three financial years

3.1.2 *Agricultural customer samples analytical results*

Out of the 1,579 fresh produce samples analysed , here were 533 incidences of pesticide detections. 5% of the detections were above the EU recommended MRLs. As shown in figure 26, Azoxystrobin and cypermethrin had the highest detections at 19% and 16% respectively.

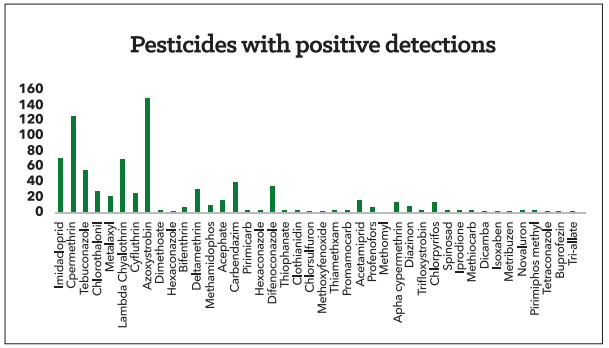


Figure 26: Frequency of pesticides residues in fresh produce

3.1.3 *The National Pesticide Residue Monitoring Plan (NPRMP) samples*

During the year, the laboratory continued with the implementation of the National Pesticide Residue Monitoring Programme (NPRMP). The programme targeted 1,200 samples of fresh produce grown in Kenya for export and 300 samples grown for domestic consumption. The target was surpassed and the Corporation achieved 1,579 samples due to requirements by the EU market and additional stringent measures put in place for fresh produce exports. The commodities included Beans (with pods), Peas (with pods), Kales and Tomatoes. Export produce samples were collected from JKIA licensed exporter pack houses and farms. The NPRMP was designed in such a way that samples for locally consumed produce were collected from markets throughout the country.

3.1.4 *Fertilizer formulation analysis*

To assure the quality of agricultural inputs used by farmers, the laboratory implemented a fertilizer monitoring programme to test for quality and safety. 319 samples were analysed with 227 fertilizer samples being from the risk based monitoring program

Figure 27 shows the trend of samples analysed for the last three financial years. There was a reduction of 44% in the number of fertilizer formulation samples received over the previous year.

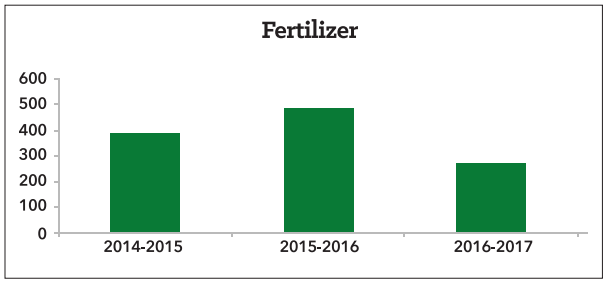


Figure 27: Fertilizer sample trend for three financial years

3.1.5 *The National Fertilizer Quality Monitoring Program*

The 2016 - 2017 risk based National Fertilizer Quality Monitoring Programme targeted 300 fertilizer samples but 227 fertilizers were sampled. This included 28 government subsidised fertilizers such as DAP and various NPK brands such as 17:17:17, 23:23:0, among others. This was besides other commercially marketed fertilizer brands such as Mavuno, Minjingu and locally marketed foliar fertilizer brands.

The objective of the fertilizer quality monitoring program was to ascertain compliance of supplied fertilizers with respect to Kenya Standards for solid compound fertilizers and inorganic foliar fertilizers i.e. KS158:2012 and KS2228:2012 respectively.

The 2016 - 2017 monitoring programme showed non-compliance to NPK specifications, the greatest non-compliance being for the foliar fertilizers category at 83% followed by NPK's at 39%. Government subsidised fertilizers reported a higher compliance of 67.59%for NPK brands sampled nationally.

The programme confirmed that the quality of majority of the foliar fertilizer brands availed to farmers is largely non-compliant to their declared guarantee on the labels besides falling short of the Kenya Standards for fertilizers. This is attributed to the increased number of players in the local foliar manufacturing/formulating business operating within an unregulated environment.

The report from this monitoring activity will be useful for policy formulation in the fertilizer sector besides informing a more risk based approach to fertilizer quality in the upcoming 2017 - 2018 fertilizer monitoring program.

Compliance of all sampled fertilizers

During the period, various fertilizer blends were sampled from agro input outlets located across 10 agricultural rich regions. 227 samples were analyzed and reported as shown in table 21.

Table 21: Compliance of various fertilizer blends

S/ No.	Type	Sample Size	Non complying	% Compliance
i.	NPK	76	29	61.85
ii.	FOLIARS	151	125	17.22
sample size		227		

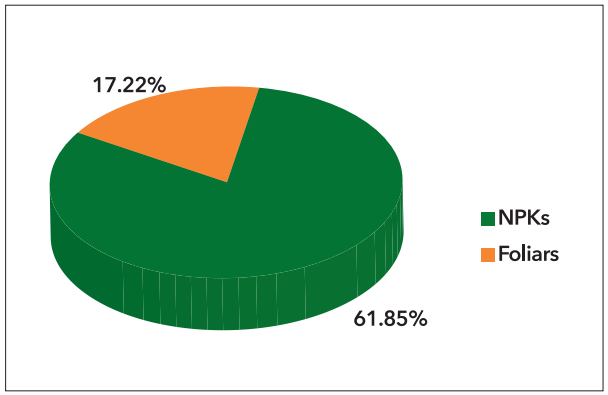


Figure 28: Percentage compliance of NPKs and Foliar fertilisers

As shown in figure 28 above, the monitoring programme reported a general compliance of 61.85% for NPK brands sampled nationally and a very low and alarming compliance of 17% for foliar fertilizers. The high non-compliance in foliar fertilisers was due to lack of elaborate manufacture and registration leading to unscrupulous business in this sector.

Compliance level of government subsidised fertilizers

During the year, 38 samples were collected, 23 from Kitale, 12 from Mombasa and 3 from Embu and the analytical results were as shown figure 29.

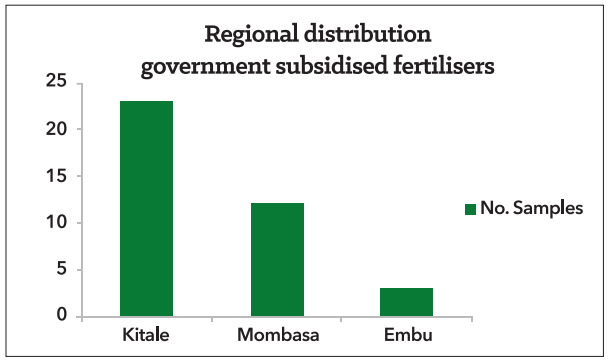


Figure 29: Distribution of samples by region

It was noted that government subsidized fertilizers exhibited higher compliance at 67.59% in comparison to the commercially availed NPK brands at 61.85%. DAP samples had the highest compliance (91.67%) followed by NPK 23:23:0 at 77.78% while NPK 17:17:17 had the lowest compliance (33.33%) as shown in figure 30. It was noted that all the three NPK (23:23:0) fertilizer samples from Mombasa (Export Trading Warehouse in Miritini) did not comply with declared formulation and the same batch number of fertilizers sourced from Russia and analysed at Kitale showed non-compliance.

Four of the NPK (17:17:17) fertilizers were non-complying and three of them had batch numbers of 01/2016, 05/2016 and 06/2016 sampled at Embu. The batch numbers is an indicative that the fertilizers might have stayed longer in the stockist leading to loss of nutrients or adulterated.

Even though Muriate of Potash (MOP) CAN and Ammonium sulphate had 100% compliance with the declared formulation, however the sample size was very small.

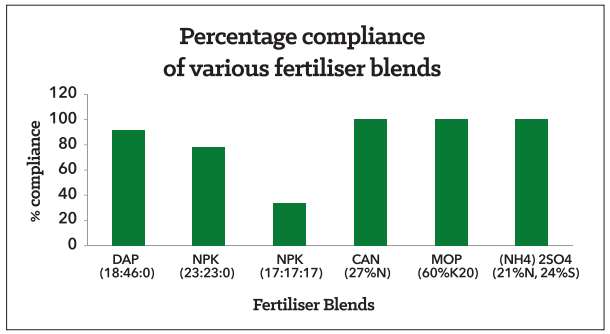


Figure 30: Percentage compliance of sampled government subsidized fertilizers

3.1.6 *Environmental Monitoring for organic contaminants*

During the year, 164 samples were submitted for analysis of Organophosphates, Organochlorines, Pyrethroids, Polychlorinated Biphenyl (PCBs) and Triazines. The environmental samples analysed included fish, water, sediment, soils, fertilisers and wheat samples. No contaminants were detected in all the submitted samples. Figure 31 shows a comparative summary for samples analysed in the last 3 years. The number of samples increased marginally by 1% compared to the last financial year. During the period, the laboratory continued to support export of fish and fisheries products to the EU through analysis of samples submitted by the Fisheries Department for the Lake Victoria monitoring program . Fisheries and other monitoring samples represented 70% while 30% were customer samples.

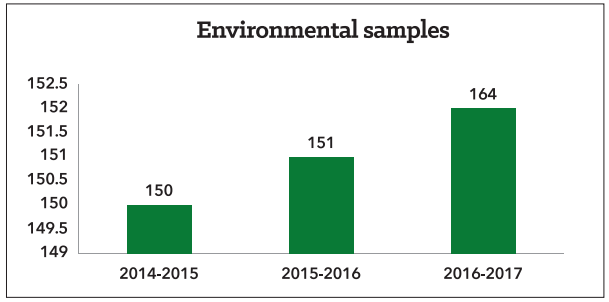


Figure 31: Environmental sample trends for last three financial years

3.1.7 *Soil for fertility evaluation and fertilizer use recommendations*

234 soil samples were analysed for fertility and nutrient levels and appropriate recommendations provided to customers. All the soil samples received in the laboratory were from customers requiring advisory services on nutrient levels. Compared to the previous year, there was a 53% increase in number of soil samples received by the laboratory. Figure 32 shows comparisons of number of samples analyzed for the past three years.

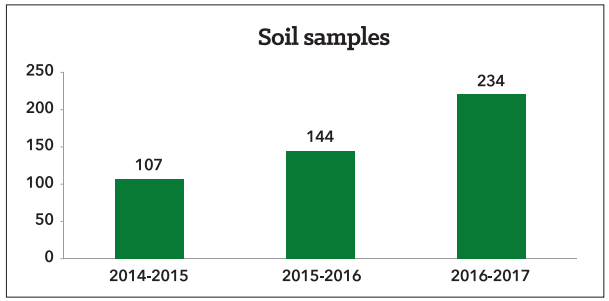


Figure 32: Soil sample trends for last three financial years

3.1.8 *Water analysis for irrigation suitability*

52 water samples were analysed and advice provided to clients on the suitability for irrigation in the intended crop(s). The number of samples increased by 131% compared to the previous year as shown in figure 33. The remarkable increase of samples was attributed to demand in evaluation of water quality from borehole sources for use in crop production systems.

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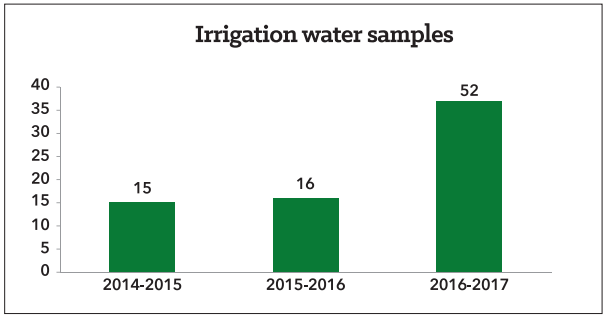

Figure 33: Irrigation water sample trends for three financial years

3.1.9 *Manure and Organic Compost Analysis*

This was undertaken to establish the nutrient contents of these soil amendments and soil structure enhancers to establish their contribution as soil ameliorators. In this period, 7 samples were analyzed and recommendations provided to clients accordingly. There was a marginal increase of 17 % compared to the previous year as shown in figure 34.

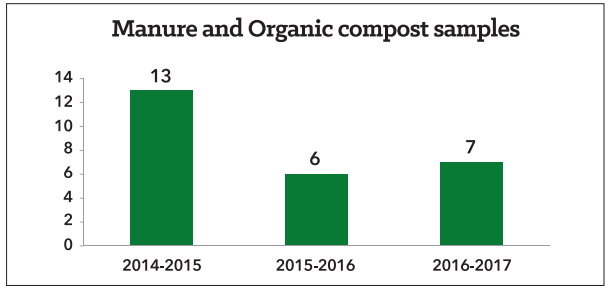

Figure 34: Manure and organic compost sample trends for three years

3.1.10 *Food and feed analysis*

During the year, 51 samples were analyzed compared to 1 sample analysed in the previous year as shown in figure 35. The increase was attributed to analysis of samples from a potato project funded under the Plant Variety Protection department at KEPHIS.

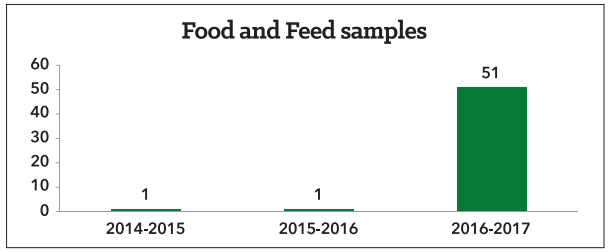

Figure 35: Food and feed sample trends for three years

3.1.11 *Pest control products formulation analysis*

Formulation samples reduced significantly from the last year as shown in figure 36. This was as a result of agrochemical companies developing analytical capacities in their facilities and conducting their own analysis for quality control purposes.

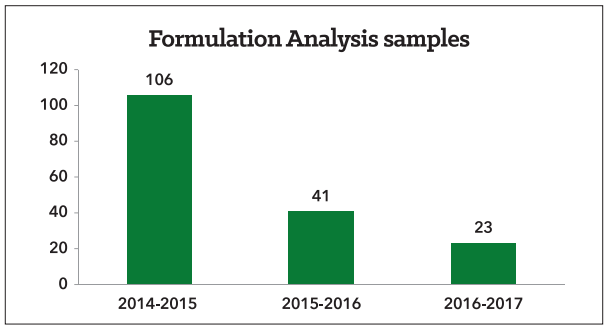

Figure 36: Pest control products samples for the last three financial years

3.1.12 *Heavy metal contaminants analysis*

The laboratory received and analyzed a total of 418 samples which constituted soil, water, rice and fish samples as shown in figure 37. There was a significant increase of samples from the previous year which recorded 85 samples. The main contributors of samples received were research samples from universities and project samples from MOALF.

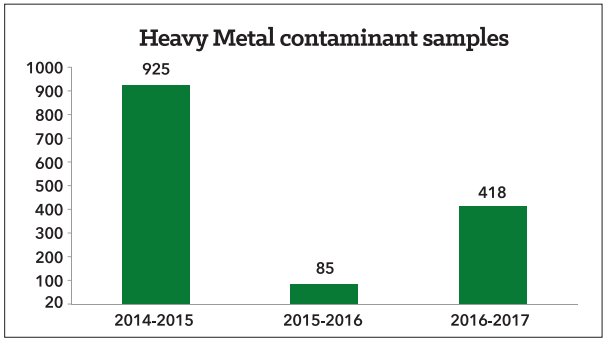

Figure 37: Heavy metal contaminants samples for the last financial year

3.1.1 *Training program for small scale farmers growing peas in pods on compliance to European market requirements*

The laboratory targeted training of small scale farmers of peas with pods on compliance with EU market requirements at Matuu in Machakos County. Organized farmers groups growing beans with pods for the export market were trained on Good Agricultural Practices, export requirements as well as benefits of KEPHIS services in agricultural production systems. The laboratory led a team of officers from MOALF and HCD in facilitating the training; 73 farmers were trained.

4.0
CORPORATE PLANNING ACTIVITIES

CORPORATE PLANNING ACTIVITIES

4.1 Strategic Focus

During the year, the Corporation continued to implement the 2012/13–2016/17 Strategic Plan. This was the final year of the five year Strategic Plan. During the final quarter of the period, the Corporation initiated the process of developing the 2017/18 - 2021/22 Strategic Plan that will guide KEPHIS activities, going forward. Focus of the new Plan shall be on aligning KEPHIS programmes with the Kenya Government's economic development blueprints that include the Kenya Vision 2030, Vision 2030 MTP III and the Agricultural Sector Development Strategy. The Corporation will also ensure programmed activities are aligned to The Constitution with special focus on working with the devolved system of government.

4.2 Performance Contracting

KEPHIS supports the Kenya Government's policy on Performance Contracting and continues to implement the system as per the laid out procedures and guidelines. In the 2016 - 2017 period, the Corporation managed to implement its Performance Contract and performed exemplarily in most of the set targets. A summary of the key performance drivers that attained exemplary performance during the year are summarised in table 22.

Table 22: KEPHIS key performance drivers

	Performance Indicator	Achievement
1	A-in-A	Ksh. 783.04
2	Automation	82.2%
3	Youth Internship/Attachment	138
4	Uptake of 30% value of tenders by Youth, Women and PWDs	Ksh. 81.6M
	Minimum 40% of all procurement budget dedicated to locally produced goods and services (Buy Kenya Build Kenya)	Ksh. 152.8M
5	Users registered to the seed certification system	25
6	Release of drought tolerant varieties	31
7	Number of private seed inspectors trained	34
8	Training of new exporters on requirements	154
9	Number of students trained by the COPE	413
10	Seed sellers trainings done	558
11	Monitor fertilisers for guaranteed analysis: Number of samples analysed	446
12	Number of quarantine facilities inspected	62
13	Rapid alert and response system for pests: surveillance of key pests and diseases	15
14	Number of PBRs issued	45

4.3 Quality Management Systems

KEPHIS implements and is certified to theISO 9001:2008 Quality Management System. The QMS system is an integral part of the KEPHIS Management processes. The Corporation initiated the process of transition to the ISO 9001:2015 by June 2018. Management, ISO Internal Auditors and staff were sensitised on the new standard in preparation of the transition process.

During the year, the Corporation continued to maintain accreditation in its key laboratories. These include the Seed Testing Laboratory at the Nakuru Regional Office accredited by ISTA, the Analytical Chemistry Laboratories accredited to ISO 17025:2005 by SANAS and the Plant Health

Laboratory at Muguga accredited by KENAS to the ISO 17025:2005 standard.

Accreditation and certification to these systems has enhanced confidence in our services by clients and stakeholders at local and international levels.

Public Relations and Corporate Communications Stakeholder Forums

KEPHIS organized and participated in over 150 agricultural shows, trade fairs, trainings, county exhibitions and other stakeholder forums in Eldoret, Embu, Nanyuki, Meru, Kakamega, Machakos, Nakuru, Kisii, Kisumu, Mombasa, Nyeri, Migori, Nairobi, Kabarnet and Kitale and reached over 60,000 farmers, plant producers and exporters and importers. The aim of the engagements was to inform, educate, engage and communicate its mandate to create awareness and understanding, leading to good agricultural practices and behavior change by the stakeholders.

Of note this year was the sensitization of farmers on the need to diversify to upscale their standards of living and to counter the effects of diseases such as the Maize Lethal Necrosis Disease. In Nyalilbuch in Kericho County and Kenyenya in Kisii County, farmers were sensitized on the importance of growing avocado as a business venture and also as an export crop. Avocado has medicinal, nutritional and cosmetic benefits hence the emphasis on its cultivation. The Hass variety is particularly in high demand internationally due to its taste, high oil content and ease in handling during logistics and transportation. Kenya exports avocado to the United Arab Emirates, the United Kingdom, Egypt, The Netherlands, France, Saudi Arabia, Belgium, Spain, Qatar, Bahrain, Kuwait, Germany and Hong Kong. There are emerging markets in Malaysia, Singapore and South Korea. The field days were preceded by trainings where farmers were taught on pest and disease management, nursery certification, how to look for clean planting materials and how to identify markets for their produce. In Cheborgei, Kericho County farmers were urged to plant alternative crops, other than maize, to counter the effect of the Maize Lethal Necrosis Disease. In these forums, KEPHIS collaborated with the Horticultural Crops Directorate, Pest Control Products Board and the Ministry of Agriculture, Livestock and Fisheries.

Cabinet Secretary Ministry of Agriculture, Livestock and Fisheries, Mr. Willy Bett (right) presenting an avocado seedling to a farmer in Kenyenya, Kisii County during a farmers field day. KEPHIS trained farmers on diversification for food security and to uplift their standards of living

Farmers being trained on good agricultural practices in Nyalilbuch, Kericho County. During the year, KEPHIS engaged over 70,000 farmers through agricultural shows, trainings and other stakeholder forums

Ms. Hellen Heya of the Plant Quarantine and Biosecurity Station speaking to participants about management of pests and diseases during a horticultural exporters training in Nanyuki Town, Laikipia County

Participants from West Pokot County during a seed growers training held during the year

Training Youth

The average age of a Kenyan farmer is 63 years old. Hence, the Corporation engaged over 100 youth to instill in them the understanding that they are the generation that will provide food for the country and their role in agribusiness. The youth were from the College of Agriculture and Veterinary Sciences at the University of Nairobi and those who attended the 2016 International Phytosanitary Conference. Going forward, the Corporation will endeavor to engage more students from private and public universities and other tertiary institutions around the country.

KEPHIS Wins at Agricultural Society of Kenya Shows

Kisii Show

During the Kisii Show, KEPHIS won first prize in The Best Regulatory Authority Stand, The Best Local Stand in Strategies of International Trade and Exports and The Stand That Best Interprets the Current Show Theme. The winning trophies were presented by the Deputy President H. E. William Ruto to the KEPHIS MD. Dr. Esther Kimani.

KEPHIS MD Dr. Esther Kimani (right) receiving the trophy for the Best Local Stand in Strategies of International Trade and Exports during the 2016KisiiAgricultural Society of Kenya show. Looking on is the Deputy President H. E. William Ruto (2nd left) who presented the trophies

Machakos Show

During the 2016 Machakos Show, KEPHIS won in three out of four categories that the Corporation entered. These were the Best Stand in Strategies of International Trade and Exports, The Best Regulatory Authority Stand and the Best Stand Embracing Information, Communication and Technology. The Corporation was second in the category of The Best Agricultural Based Stand.

The winning trophies were presented to the Managing Director, Dr. Esther Kimani by Machakos Governor H. E. Dr. Alfred Mutua.

KEPHIS has continued to show her prowess in agricultural shows by showing how her mandate ties in with the show theme of Enhancing Technology in Agriculture and Industry for Food Security and National Growth.

INTERNATIONAL PHYTOSANITARY CONFERENCE 2016

The International Phytosanitary Conference

The conference was the first of its kind in the world and immense publicity was done through print, electronic and social media. The Corporation also actively engaged the media to report accurately on the event. The event was well covered in both the print and electronic media as follows:

- Print Media – The Nation, The Business Daily, the Star, the People and the Standard;
- Electronic Media/TV - KTN, NTV, KBC, Citizen TV, KASS TV and radio, Xinhua News Agency, Farmers TV.

Corporate Social Sustainability

The 2016-2017 Corporate Social Sustainability (CSS) activity was held at Karai Children's Home in Kikuyu, Kiambu County. The home has 70 children aged between 7-18 years old. The aim of the initiative was to empower People Living with HIV/AIDS (PLWHIV) to participate in agricultural activities as a source of employment

and to undertake livelihood enhancement and food training programmes.

KEPHIS purchased a greenhouse so the children could have a source of food (tomatoes)and to sell the surplus, if any. KEPHIS collaborated with Hortitechno Produce and Services who are suppliers of greenhouses to supply the green house to the home.

As a sustainability initiative, the technical staff in the CSR committee would provide advisory services in terms of educating on the importance of certified seed, how to control and manage pests and diseases in the green house and testing of agricultural inputs and produce through the Analytical Chemistry Laboratory

The 8m*6m metallic greenhouse came with crop support, drip irrigation (filter, drip line, pipe and connections), a 1000 litre water tank, a start-up pack (seeds, chemicals, fertilizers), protective gear and knap sack sprayer. With proper care and maintenance the greenhouse will stay for up to 5 years at the home.

KEPHIS staff with the children at the home

The greenhouse, tank and training provided at the home

Digital Communications

The KEPHIS website (www.kephis.org) and social media platforms (facebook and twitter) continue to be major sources of information to stakeholders and the public. The portals are also a one stop shop for KEPHIS information. Our social media pages also educate stakeholders, particularly the youth, on the mandate of the Corporation. During the year, stakeholders were educated on the importance of seed and seed certification, the importance of declaring plant and plant materials and the importance of testing agro-inputs and produce as a pathway to good agribusiness.

CORPORATE PICTORIALS

Dr Esther Kimani and South Korea Director General of the Korea Seed and Variety Service Dr. Oh ByeongSeok sign a Memorandum of Understanding that will see the two countries share Distinctness, Uniformity and Stability reports on the protection of crop varieties bred in the two countries

Kenya's Ambassador to France, H.E. Salma Ahmed being taken through laboratory analysis by KEPHIS Mombasa Regional Manager Josiah Syanda when she paid a courtesy call to KEPHIS Mombasa region office. She later went on board a ship to see firsthand how inspections are done on imports such as wheat.

Dr. Isaac Macharia, GM Phytosanitary Services (3rd right) and Mr. James Ang'awa GM Finance and Administration(centre) and KEPHIS staff with officers from the Agriculture, Animal Industry and Fisheries in Uganda who were on a benchmarking tour of KEPHIS. The officers learned about the Electronic Certification System, Recommended Maize Varieties SMS Service and the Pest Information Management System that KEPHIS implements in fulfilling its mandate

5.0
PROJECTS

5.0 PROJECTS

During the year, the Corporation continued to work closely with various domestic and international partners and stakeholders in the implementation of five project activities. Projects implemented during the period included: the EU-SMAP, RIIP-COMESA, COMPRO-KEPHIS-IITA, COMESA-Breaking Barriers and SASHA (CIP/Bill and Melinda Gates Foundation), Agri-experience, KHC/KAVES pesticide residue checks, Recommended Action Plan (IITA), Danish-Kenya Strategic Sector Cooperation Programme on Food Safety (Dairy and Horticulture) and Seed Certification & Plant Variety Protection Automation Project (TMEA).

KEPHIS finalised implementation of the SMAP project and during the year modern laboratory equipment worth over KShs. 141M was received and commissioned. The equipment benefitted Headquarters laboratories i.e. ACL, Molecular and the Plant Heath laboratories, Plant Quarantine and Biosecurity, Kitale, Nakuru and Mombasa. Major equipment supplied were LC-MSMS and GC-MSMS that analyses contaminants in a wide range of agricultural produce.

The Corporation also implemented the RIIP project that supported PRA activities, creation of awareness on market standards, creation of areas of low pest prevalence and surveillance activities through field days, International Phytosanitary Conference in September 2016, purchase of traps and pest listing.

Under the SASHA project, KEPHIS was able to build capacity for staff and stakeholders on sweet potato production, virus cleaning and multiplication of potato vines. It included revision of seed standards for sweet potato, organizing stakeholder awareness, marketing and maintenance of pre-basic seed in tissue culture and greenhouse, net tunnel constructions and follow up inspections.

The LC MS MS and GC MS MS machines purchased through the Standards and Market Access Programme in the year under review. The equipment will be used to assure the quality of produce destined to the key EU market.

Under COMPRO, the following was done: product screening and implementation of the quality control Standard Operating Procedures for bio-fertilizers and survey for bio-fertilizers on compliance to the registration guidelines/ interim measures. The Seed Certification and Plant Variety Protection Automation Project is focusing on automation of the KEPHIS seed certification process and also to link the import and export systems to a common User Identity Access Management (UIAM) platform for effective service to customers; the System is expected to be launched in August 2020. In addition the Danish-Kenya Strategic Sector Cooperation Programme on Food Safety for Dairy and Horticulture has been conducting capacity building activities like training in laboratory techniques in Kenya and Denmark and development of residue/contaminant plan.

KEPHIS has been working with USAID in the development of a new project called Improving Food Security through Strengthening and Enhancing KEPHIS Regulatory Capacity to Certify Crops and Facilitate Safe Foods (Foodscap), expected from October 2017. It will focus on providing supportive seed production systems services to farmers growing orphan crops to assure availability of seeds, mitigating against crop losses through plant health management strategies and diagnostics and monitoring food safety through checking for food contaminants and implementing a pilot regional program on the generation of suitable pesticide residue limits.

6.0 SUPPORT SERVICES

6.1 Information Communication & Technology

During the year, , the Corporation achieved automation levels of 82.2% from the annual ICT Authority survey. Also, KEPHIS implemented the new seed certification system for small labels and upgraded the ECS.

6.2 Procurement

In the year, KEPHIS continued to support and empower youth, women and PWDs. KEPHIS also awarded a total of Ksh. 83.1 million worth of tenders to the AGPO group. This was a marginal increase from 81.6 million awarded last year. The Corporation endeavours to continue supporting these disadvantaged groups as it carries out its mandate. In addition KEPHIS implemented the government policy on e-procurement with all major tenders reported as required. KEPHIS will continue to align its systems to the government IFMIS system.

6.3 Human Resource Development

During the year, the Corporation was able to contribute towards human resource development by building capacity to its staff through various training programs. This was guided by its annual training assessment and programme. In addition, the Corporation was able to empower Kenya's youth by offering 138 internships and attachments to students from local universities and colleges.

7.0 FINANCIAL STATEMENTS

STATEMENT OF FINANCIAL PERFORMANCE
For the year ended 30th June, 2017

	Notes	2016-17 Kshs '000	2015-16 Kshs '000
Revenue from Non-Exchange Transactions			
Public Contributions and Donations	3	58,652	80,371
Transfers from Other Governments-gifts and services-in-kind	4	266,903	300,393
		325,555	**380,764**
Revenue from exchange Transactions			
Rendering of Services	5(a)	606,022	575,043
Hire of Facilities	5(b)	5,276	4,687
Finance Income-External Investments	5(c)	1,334	1,863
Other Income	6	3,012	2,252
		615,645	**583,845**
Total revenue		**941,200**	**964,609**
Expenses			
Employee Costs	7	493,852	504,900
Board Expenses	8	15,210	9,181
Depreciation and Amortization Expense	9	86,789	79,452
Repairs and Maintenance	10	49,661	61,088
Grants and Subsidies	11(a)	47,331	73,309
General Expenses	12	296,637	381,197
Total		**989,480**	**1,109,127**
Other gains/(Losses)			
Gain on sale of assets		1,073	-
Gain/Loss on foreign exchange transactions		372	1,119
Increase/Decrease in Provision for Doubtful Debts		10,086	(14,984)
		11,531	**(13,865)**
Surplus/ (Deficit) for the period		**(36,748)**	**(158,383)**
Attributable to:			
Surplus/(Deficit) Attributable to Government of Kenya		**(36,748)**	**(158,383)**

STATEMENT OF FINANCIAL POSITION
As at 30th June, 2017

	Notes	2016-17 Kshs '000	2015-16 Kshs '000
Assets			
Current assets			
Cash and Cash Equivalents	13	33,756	69,742
Receivables from Exchange Transactions	14	65,813	55,069
Receivables from Non-exchange Transactions	15	1,293	2,789
Inventories	16	48,026	29,683
Prepayments	17	27,252	37,009
		176,140	**194,292**
Non-current assets			
Property,Plant and Equipment	18	1,159,442	1,091,194
Investments	19	60,000	60,000
		1,219,442	**1,151,194**
Total assets		**1,395,582**	**1,345,486**
Liabilities			
Current liabilities			
Trade & other Payables from ExchangeTransactions	20	31,040	45,390
Provisions	21	961	961
Deferred Income	22	153,573	32,192
Payments Received in advance	23	4,170	5,738
Other Payables	24	7,306	25,926
		197,050	**110,207**
Total Liabilities		**197,050**	**110,207**
Net Assets		**1,198,532**	**1,235,279**
Reserves		451,194	451,194
Accumulated Surplus		747,337	784,085
Total Net Assets and Liabilities		**1,198,532**	**1,235,279**

NOTES

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