



SEPCI END OF PROJECT REPORT

PRESENTED TO:

KENYA AGRICULTURAL PRODUCTIVITY AND AGRIBUSINESS PROJECT

(KAPAP)

BY

AGROCHEMICALS ASSOCIATION OF KENYA

(AAK)

JULY 2015



FORWARD

Agriculture remains the backbone of the Kenyan economy. As the single most important sector in the economy, contributing to approximately 25% of the Gross Domestic Product (GDP) and employing 75% of the national labour force. Over 80% of the Kenyan population live in rural areas and derive their livelihoods, directly or indirectly from agriculture. Given its importance, the performance of the sector is therefore reflected in the performance of the whole economy. The development of agriculture is also important for the poverty reduction since most of the vulnerable groups like pastoralists, the landless and subsistence farmers also depend on agriculture as their source of livelihoods. Growth in the sector is therefore expected to have a greater impact on the larger section of the population than any other sector.

The Agriculture Sector for Development Strategy (ASDS), 2010 - 2020 of the Ministry of Agriculture, Livestock and Fisheries and other sector ministries focuses on the transformation of agriculture into a viable and vibrant sector that is profitable, commercially oriented regionally and internationally a competitive economic activity that provides gainful employment. In addition, the Kenyan Vision 2030 aims at transforming the country into a fast growing and diversified economy through building on competitive advantages of key sectors of the economy such as agriculture. Modernizing Kenyan agriculture will contribute greatly into achievement of the Vision 2030.

The vision of ASDS is modernizing and commercializing agriculture for peasants, small, medium and large scale producers. The objectives of ASDS is to transform peasants and small scale farmers to commercial farmers through emphasis on productivity, incomes and tradability which calls for increased use of farm inputs that include pest control products.

Chemicals play a key role in many aspects of human development in Kenya as vital inputs to sustainable development, pesticides and fertilizers tremendously increase agricultural productivity. It should be further noted that this sub sector directly contributes to the economy through employment creation in the value chain, utilization of local raw materials during formulation, repacking and technology transfer.

In Kenya, increasing human populations and changes in food consumption pattern presents growing challenges leading to intensified agricultural production to meet the quality standards demanded in international trade. The rapid globalization of trade has significantly increased attention to the management of empty pesticide containers among producers for export market.

The greatest challenge facing the increased use of pesticide so as to meet food security, agribusiness and food safety, is the recovery and disposal or recycling of empty pesticide containers. Currently, there is no clear mechanism in place especially among the small and medium scale farmers for the collection and disposal/recycling of empty pesticides containers. The situation is made worse by lack of clear legal framework to guide the collection and disposal/recycling of empty pesticide containers at national and county level.

In addition, the absence of organized known disposal/recycling systems for pesticide containers had led farmers and other users of pesticides to use unapproved methods of disposal such as domestic use, throwing into pit latrines and bush, burying up the containers and open fire burning among others. The initiative, therefore, intended to set up a sustainable and environmentally friendly empty pesticide containers collection and disposal/recycling in the Country.

ACKNOWLEDGMENTS

For the successful implementation of the SEPCI project, we would like to mention those who played a major part to the CM project success.

The World Bank

Kenya Agricultural Productivity and Agribusiness Project (KAPAP)

The Agrochemical Association of Kenya (AAK)

Pest Control Products Board (PCPB)

The Environmental Combustion Consultants LTD (ECCL)

The Kenyan Ministry of Agriculture – SCAOS office

The beneficiary FarmersThe AAK Field Coordinators and all other relevant coordinators

TABLE OF CONTENTS

FORWARD	ii
ACKNOWLEDGMENTS.....	iv
TABLE OF CONTENTS.....	v
ABBREVIATIONS	viii
REPORT STRUCTURE	1
SEPCI PROJECT GENESIS.....	2
INTRODUCTION ON THE SEPCI PROJECT.....	4
General objective of SEPCI.....	6
Specific Objectives of SEPCI	7
EXECUTIVE SUMMERY	8
SECTION ONE	9
County Activities	9
1. Embu County.....	10
2. Homabay County.....	12
3. Makueni County.....	13
4. Meru County	15
5. Nyandarua County	18
6. Nyeri County	20
7. Nakuru County	23
8. Taita Taveta County	26
9. Kakamega County	28
10. Trans Nzoia County	30
SECTION 2: PERFORMANCE AND OUTPUTS.....	31

1. Nyeri County	31
<i>Attendance and Gender statistics</i>	31
2. Taita Taveta County	32
<i>Attendance and Gender statistics</i>	32
3. Embu County.....	33
<i>Attendance and Gender statistics</i>	33
4. Nyandarua County	34
<i>Attendance and Gender statistics</i>	34
5. Meru County	35
<i>Attendance and Gender statistics</i>	35
6. Trans Nzoia County	36
<i>Attendance and Gender statistics</i>	36
7. Nakuru County	37
<i>Attendance and Gender statistics</i>	37
8. Makueni County.....	38
<i>Attendance and Gender statistics</i>	38
9. Homabay County.....	39
<i>Attendance and Gender statistics</i>	39
10. Kakamega County	40
<i>Attendance and Gender statistics</i>	40
COUNTRY SEPCI PERFORMANCE.....	41
<i>1. Attendance and Gender statistics</i>	41
<i>2. Collection Centre Set-up and First EPC Collection Quantity in April.</i>	42
<i>3. EPC Collection Centre Distribution per respective county size.</i>	43
SECTION 3	44

<i>Project achievements</i>	44
SECTION 4	48
Project challenges.....	48
SECTION 5	50
Conclusions	50
Recommendations	50
REFERENCES.....	51
APPENDICES	52
APPENDIX 1: SEPCI TRAINING CURRICULUM.....	52
APPENDIX 2: SEPCI Project site maps	53
APPENDIX 3: Agrochemicals Association of Kenya Posters Used in The Training/Sensitization Curriculum	54
APPENDIX 4: Agrochemicals Association of Kenya EPC Management Poster Used at the EPC Collection Centres.....	55
APPENDIX 5: Agrochemicals Association of Kenya Posters Used in The Training/Sensitization Curriculum	56
Appendix 6: Potential & Future Collaborators with the AAK on the SEPCI and Safe Use Programmes in Kenya.....	57

ABBREVIATIONS

AAK	Agrochemical Association of Kenya
ASDS	Agriculture Sector for Development Strategy
CC	Collection Centre
CCC	Central Collection Centre
CSU	County Service Units
ECCL	Environmental and Combustion Consultants Limited
EPC	Empty Pesticide Container
FC	Field Coordinators
FFD	Farmer Field Days
FPEAK	Fresh Produce Exporters Association of Kenya
GAP	Good Agricultural Practice
KAPAP	Kenya Agricultural Productivity and Agribusiness Project
MPS	Milieu Programmer Siesteeltil
K.F.C	Kenya Flower Council
PCPB	Pest Control Products Board
SEPCI	Sustainable Empty Pesticide Container Initiative
WAO	Ward Agricultural Officer

REPORT STRUCTURE

This report is a publication of the container management project implemented by AAK in the ten counties in the republic of Kenya. It does so by presenting key findings and statistics on SEPCI.

The report is structured around four sections:

- **Section 1:** County and Sub-County Activities
- **Section 2:** County comparisons and activity statistics
- **Section 3:** Achievements Targeted Vs. Achieved
- **Section 4:** SEPCI Project overall Challenges

Each section contains a highlight that focuses on a special topic and appendices presenting inventories, data, statistics, and resources complete within the report.

SEPCI PROJECT GENESIS

The CropLife Kenya CleanFarms Pilot EPC Project carried out from 2011 to 2012 showed;

1. It was important to identify all the stakeholders in the Empty Pesticide Containers Management for the country to be able set up a sustainable system.
2. There was need to identify disposal/recycling options for the country.
3. There were a significant number of EPC being held by farmers and sometimes used for unapproved purposes.
4. Farmers did not deliver triple rinsed punctured EPC to the bins placed strategically in their farms before sensitization and training through farmer field days, churches and the local administration.
5. Farmer's commitment to the EPC disposal requirement progressed slowly.
6. There was high cost of the container collection system put in place.
7. The EPC Management system to be eventually put in place would deal with between 3-5million small-scale farmers scattered in the whole country with each holding very few containers.
8. There was lack of clear legislation on the management of EPC.
9. There was lack of an exclusive recycling facility for the EPC to produce products for non-domestic use.

In addition, CropLife International Vision 2020 requires that all National Associations set up a sustainable empty pesticides initiative. It was from the findings that the SEPCI project was conceived.

The Memorandum of Understanding (MOU) for the implementation of the Sustainable Empty Pesticide Containers Initiative (SEPCI) project was signed on 18th November

2014 between Kenya Agricultural Productivity and Agribusiness Project (KAPAP) and Agrochemicals Association of Kenya (AAK).

Kenya Agricultural Productivity and Agribusiness Project is one of the government initiatives to implement the Agriculture Sector Development Strategy (ASDS) and are designed around the key pillars of ASDS. KAPAP aims to consolidate and up-scale the achievements in the sector and in addition support agribusiness development. The projects development objective is to increase agricultural productivity and incomes of participating smallholder's farmers in the project area.

The Agrochemicals Association of Kenya (AAK) is the National Representatives of the International Agrochem Industry represented worldwide by CropLife International. AAK is therefore the umbrella organization for manufacturers, formulators, repackers, importers, distributors, farmers and users of pest control products. The local association has existed since 1958 and in 2005 the association registered CropLife Kenya as part of the global networking direct linkage to into CropLife International.

The SEPCI Project is to be implemented in 10 KAPAP counties which have been selected on the basis of pesticide use and concentration of small scale farmers. The identified counties are: Makueni, Nakuru, Nyandarua, Kakamega, Taita Taveta, Trans Nzoia, Homabay, Meru, Nyeri and Embu.

In the past 10 years, empty pesticides containers management in Kenya has become of major importance especially in the horticultural export sector following the demand by the market through certification organizations such as Kenya Flower Council (K.F.C), Fresh Produce Exporters Association of Kenya (FPEAK), Global GAP, Milieu Programmer Siesteeltil (MPS) among others that demand the documentation of the process of handling of pesticide containers on the farm as part of the traceability process to ascertain use of Good Agricultural Practices (GAP) in production of crops intended for export into the European countries.

The main objective of the SEPCI Project is the 'Establishment of environmentally sustainable and commercially viable empty pesticide containers management systems in Kenya.

INTRODUCTION ON THE SEPCI PROJECT

The Sustainable Empty Pesticide Containers Initiative (SEPCI) is a World Bank funded project overseen by Kenya Agricultural Productivity and Agribusiness Project (KAPAP) and implemented by Agrochemical Association of Kenya (AAK) in partnership with Pest Control Products Board (PCPB) and relevant county governments. SEPCI was implemented in 10 of the 47 counties in the republic (Makueni, Nakuru, Nyandarua, Kakamega, Taita Taveta, Trans Nzoia, Homabay, Meru, Nyeri and Embu).

The SEPCI Project activities were officially launched on 19th January 2015 with field coordinator (FC) sensitization training. The objective was to sensitize the PCPB staff, AAK field coordinators (FC), and ECCL staff on the SEPCI project. This activity was followed by county sensitization to Agricultural Officers carried out from 26th Jan to 27th Feb, with an aim of ensuring they were clear on the CM project and get support from the county on setting the CM project in the county the meeting also involved selecting relevant sub-counties, farmer groups and agro vets to take part in the project. This activity was facilitated by PCPB and AAK. Following County sensitization Sub-county Agricultural officers, administrator farmer group leaders and agro vet outlets also were sensitized on the CM project, where the project was to receive support on implementation with the relevant sub-counties and farmer groups. This activity was facilitated by County MOALF coordinator, PCPB and AAK. In most of the counties farmer collection centers were also identified during the meetings. The SEPCI workflow adopted was as shown below.

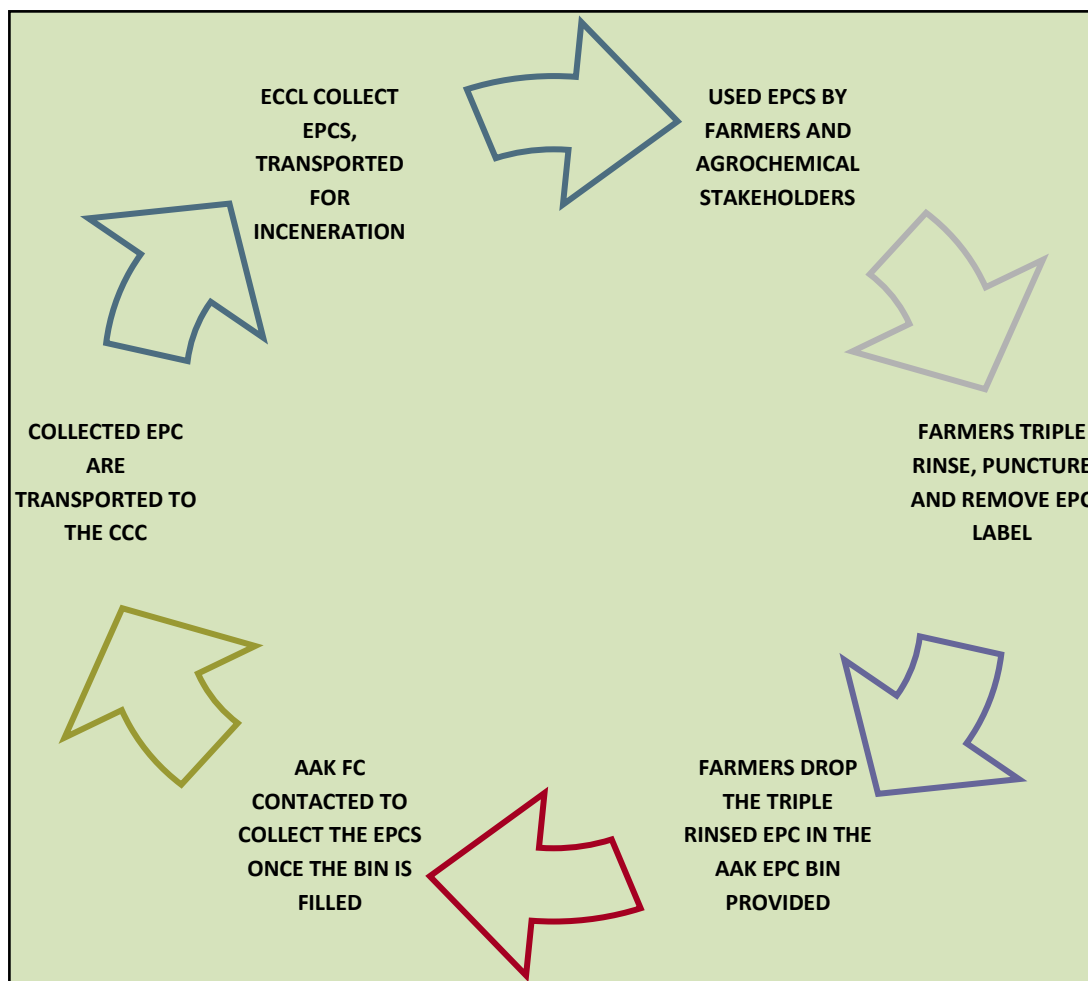


Figure 1: Pictogram Depicting how the farmers are sensitized on the proper ways of handling EPC before final disposal at the CC in their respective counties

In addition to county and farmer sensitization, the FCs also had to plan and implement various sensitization and awareness campaigns in their respective counties, some of which included hosting farmer field days, trainings, setting up publication materials (Safe use and triple rinse posters) and making appearances in agrochemical related activities.

AAK endeavored to reach out to all stakeholders and farmers in the agrochemical sector with bid to ensure maximum sensitization and awareness towards SEPCI was achieved. The approach strategy that proved most successful was as depicted below.

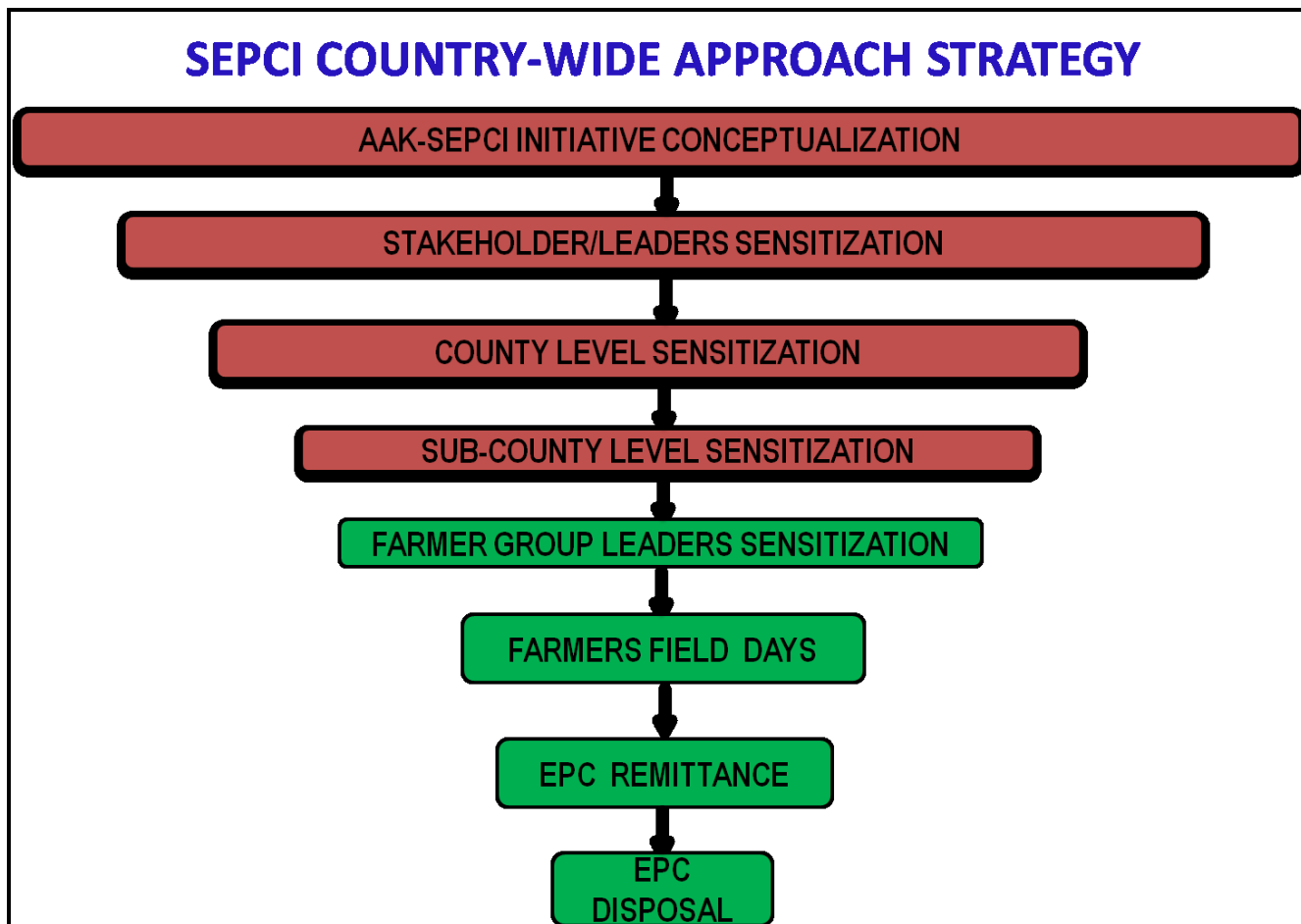


Figure 2: flow charts depicting the AAK approach strategy in sensitization of all stakeholders at the county level towards farmer sensitization to remit EPC.

General objective of SEPCI

The objective of the container management initiative is to establish an environmentally sustainable container management system countrywide that is both commercially viable and environmentally safe.

Specific Objectives of SEPCI

To achieve the above goal, on a more specific note, the SEPCI initiative geared to achieve the following specific objectives:

- Continuous creation of awareness to stakeholders through meetings and/or workshops.
- Planning for EPC management in 10 KAPAP Counties.
- Identification and setting up of 50 agro vets outlets as collection centers in the 10 KAPAP Counties.
- Identification and setup of farmer collection centers in 20 farmer group societies in the 10 Counties
- Setting up 20 central collection sites in the 10 Counties.
- Establish partnership on empty pesticides containers management with Environment and Combustion Consultants Ltd (ECCL), Ministry of Agriculture, Livestock and Fisheries (MOAL&F) - County and Sub-county Agricultural officers and Pest Control Products Board (PCPB).
- Designing and printing 2000 posters on containers management.
- Purchase of 2000 bins to be used in the collection of triple rinsed punctured EPC.
- Sensitization, demo activities and training of County Officer's agro vet outlets 500 farmers 30 agro-dealers and 20 extension officers for each of the 10 counties.
- The project targets to hold 10 farmer field days per county, 1 agro-dealer and County officer's training per county.
- Distribution of bins for collection of EPC to 50 agro vets outlets.
- Transportation of EPC to central collection sites.
- Preparation of EPC for transportation to disposal agents/recyclers.
- Transportation of EPC to disposal agents/recyclers.

EXECUTIVE SUMMERY

The aim of the SEPCI project was the establishment of a safe Empty pesticide container disposal system for the country, the system was to have minimal effects on the environment and be commercially viable to enable sustainability. The project saw the training and sensitization of over 10,000 farmers (more than 6000 males and 4000 females) and county agricultural officers, as well as the setting up of 500 Collection Centers. As a result EPC retrieval, collection and disposal was successfully carried out with a total collection of over 1000 Kgs in the 1st collection of EPC within three months after project inception in March. However the project success came against a backdrop of various challenges some of which include; Late project start, late briefing to CSUs, slow project uptake in the counties, a strong farmer status quo – some farmers never had an EPC disposal system hence found it hard to change the ‘Token Mentality’, unforeseen challenges such as weather changes, poor road infrastructure etc. The SEPCI project achieved impressive results given the short timeframe accorded, penetrating farmer groups and various stakeholders to retrieve the EPC from farms, water sources like rivers, buried containers in an effort to reduce the harmful effects caused. Continuous sensitization is needed to enhance safe use information dissemination and sustained disposal of EPCs in the small-scale growers’ zones.

SECTION ONE

County Activities

The SEPCI Project activities were launched on 19th January 2015 with the first sensitization and awareness creation of the county field coordinators (FCs). The objective of the training was to sensitize the PCPB staff, eleven (11) AAK field coordinators (FC), and ECCL staff on the SEPCI project to be implemented in 10 counties. This was followed by sensitization of counties for Agricultural Offices carried out from 26th Jan to 27th Feb, ensuring they were clear on the SEPCI project and get support from the county on setting the CM project in the county the meeting also involved selecting relevant sub-counties, farmer groups and agro vets to take part in the project. This activity was facilitated by PCPB and AAK. From the month of February Sub-county Agricultural officers, administrator farmer group leaders and agro vet outlets also were sensitized on the CM project, the objectives of the meetings were to get support on how to implement the project in relevant sub-counties and farmer groups. This activity was facilitated by County MOALF coordinator, PCPB and AAK. In most of the counties collection centers were also identified during the meetings.

1. Embu County



Sensitization in Embu County was done to the County ministry officials where they understood the SEPCI project and had selected sub-counties and groups that took part in the. Support was given by the ministry officials. The county sensitization meeting was hosted by AAK.

Sub county training was mainly carried out targeting Farmer group leaders, Agro vets vendors and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan, this was necessary as the AAK FCs would work in close partnership with ward agricultural officers especially during the training and farmer field days.

Each project county was to have at least two farmer field days in each respective sub-county selected. The main theme of the field days was to sensitize farmers on the safe practices in handling pesticides this included purchase, transport, use and disposal, a brief description of the project was also explained the participants including the EPC collection exercise carried out in the project.

The SEPCI farmer field day (FFD) sensitization targeted farmer groups and individual farmers whereby emphasis was placed on the harmful health effects of improper EPC disposal such as; cancers, reproductive complications, deaths through product ingestion, and headaches among other hazardous complications. In addition to the harmful effects, the EPC triple rinsing concept was also encouraged.

SEPCI in Embu County saw the setting up of 54 EPC bins in various sites in the selected sub counties, 2 Central collection centers were also set up to facilitate easy collection and transport of EPCs collected from the collection centers. It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard. Collection in the region was impressive having four rounds of collection from the central collection centers set up.



Mr. Kinyua from the Ministry of Agriculture training farmer group at Kamarandi in Mbeere North.



PCPB Officer Training at Kangai Syklimit Field Day in Ishiara, Mbeere North



Ministry of Agriculture Training Farmers attending a field day at Mbuvari Embu West



Some of Empty Pesticide Containers collected at Kiambindu Irrigation Scheme

2. Homabay County



On 21st Jan 2015, sensitization in Homabay County was done majorly targeting the County ministry officials. They were introduced to the SEPCI project and made the selection of the specific sub counties, groups and the methodology of implementing the project having in mind the project goal and objectives. Support was given by the ministry officials. The county sensitization meeting was hosted by AAK.

On February Sub county training was carried out, mainly carried out targeting Farmer group leaders, Agro vets vendors and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan developed, this was necessary as the AAK FCs would work in close partnership with ward agricultural officers especially during the training and farmer field days.

Each project county was to have at least two farmer field days in each respective sub-county selected. The main aim of the field days was to sensitize farmers on the safe practices in handling pesticides this included purchase, transport, use and disposal, a brief description of the project was also explained the participants including the EPC collection exercise carried out in the project. SEPCI farmer training in Homa bay began on 24th Feb targeting farmer groups and individual farmers. SEPCI in Homa Bay County saw the purchasing of 20 bins for the selected sub counties. It was a pre-requisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard. Collection of EPC wasn't done in Homabay this was due to delay in some activities hence validation is required to ascertain any EPC disposal.

3. Makueni County



Makueni County, formerly known as Makueni District is a county in the former Eastern Province. The largest town center in Makueni is Wote. Makueni has a population of 884,527 (2009 census) and an area of 8,008.9 km².

On 7th Feb sensitization in Makueni County was done to the County ministry official including the County Director of Agriculture where they understood the SEPCI project and had selected sub-counties (Kilome, Kibwezi East, Kibwezi West, Makueni, Kaiti and Mbooni) and groups that would take part in the. Support was given by the ministry officials. The county sensitization meeting was hosted by AAK.



Sub-county training was carried out, mainly carried out targeting selected farmer group leaders, Agro vets vendors and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan developed, this was necessary as the AAK FCs would work in close partnership with ward agricultural officers especially during

the training and farmer field days. Field day activities in Makueni began on February with the first field day held. Each project county was to have at least two farmer field days in each respective sub-county selected. Attendance was varied with the highest attendance recorded at 106 farmer and 28 farmers as the lowest. SEPCI farmer training in Makueni began on the month of Feb targeting farmer groups and individual farmers, there were other stakeholders that also took part in the activity in Makueni i.e USAID-cereal growers association, HCDA, Conservation agriculture and World Relief. In addition to the harmful effects, the EPC triple rinsing concept was also encouraged. Approximately 968 farmers in total receive training on safe disposal of EPCs.

SEPCI in Makueni County saw the setup of 74 collection centers and bins for the selected six sub counties. It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard. Makueni FCs were to set up a central collection center and store collected farmer group EPCs at the CCC, they were then collected by ECCL for disposal.



Field officer-kubende taking farmers through Safe use, Handling and disposal of EPCs.

4. Meru County

On 29th February sensitization in Meru County was done to the County ministry officials where they understood the SEPCI project they also selected sub-counties (Imenti North, Imenti Central, Imenti South, Igembe South and Buuri), groups that would take part in the project. Ministry officials agreed to support the project. Due to the vastness of Meru County and the long distances involved between some Sub counties, this led to the division of the 5 sub counties to a 3:2 ratio between the two FCs in Meru County.



On the month of Feb Meru Sub-county training was carried out, mainly targeting the selected farmer group leaders and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan developed, this was necessary as the AAK FCs would work in close partnership with ward agricultural officers especially during the training , farmer field days and other county related activities. Each project county was to have at least two farmer field days in each respective sub-county selected. The

main aim of the field days was to sensitize farmers on the safe practices in handling pesticides this included purchase, transport, use and disposal, a brief description of the project was also explained the participants including the EPC collection exercise carried out in the project. Attendance was varied with the highest attendance recorded at 221 farmer and 24 farmers as the lowest.

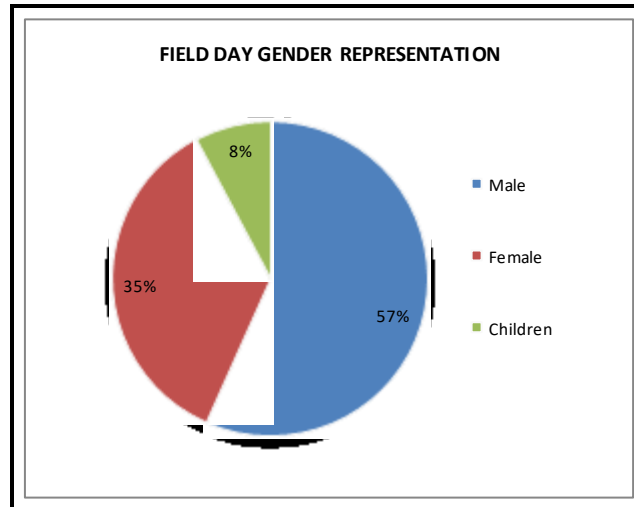
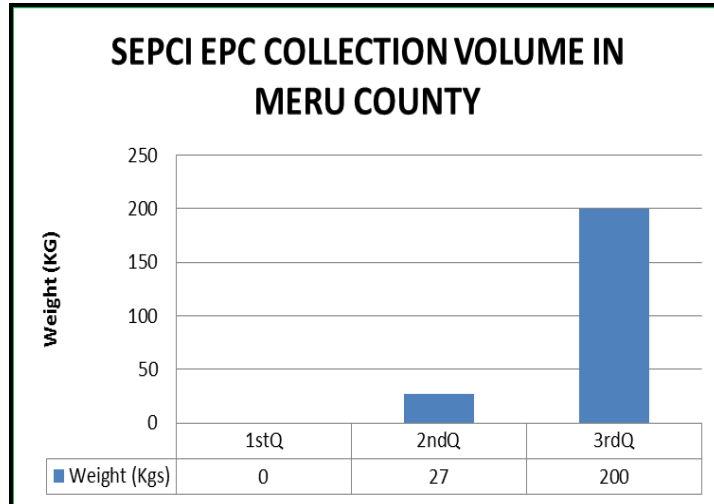


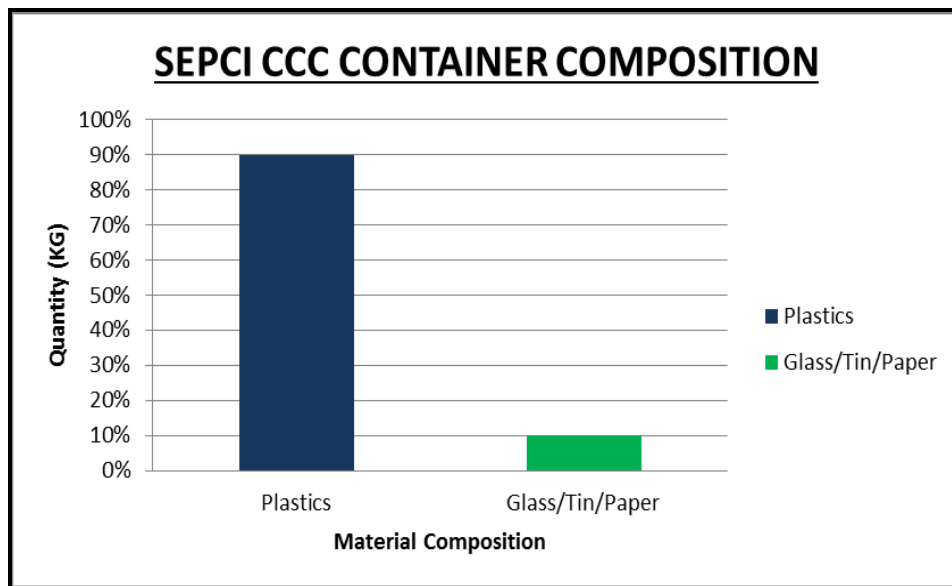
Figure 4: Gender Representation in Meru County during FFD Sensitization and awareness days

SEPCI in Meru County saw the setup of 34 collection centers and bins for the selected five sub counties. It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard.

Meru County FCs set up a central collection center to store the collected EPCs from various farmer groups. Quantity of collected EPC was low in the onset but gradually increased towards the end of the project as farmer sensitization enhanced SEPCI reception in the county.



In Meru County one round of collection was carried out where 197Kgs worth of EPCs was collected from both collection centers in Meru Central and Buuri. Most of the collected EPCs were plastic as shown below:

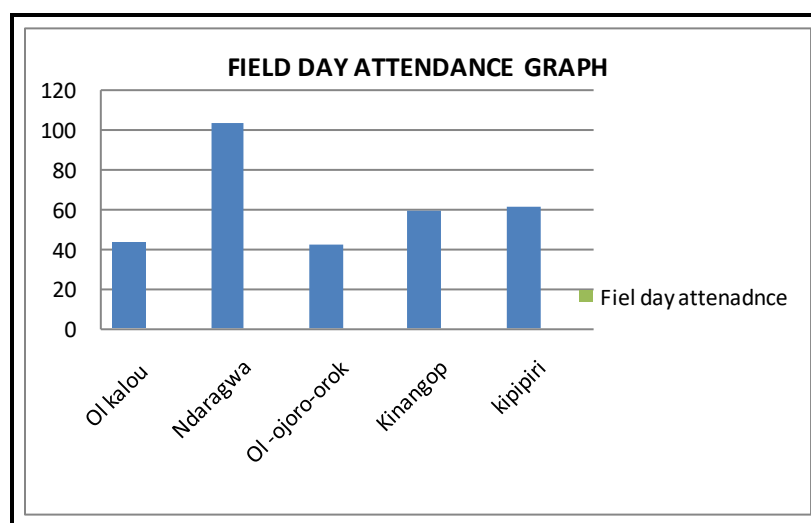


5. Nyandarua County

Sensitization in Nyandarua was done targeting the County ministry officials; the county officials understood the SEPCI project as well as selecting the sub-counties (Ol Kalou, Ndaragwa, Ol-ojoro-orok, Kipipiri and Kinagop) and groups that took part in the project. Ministry officials agreed to support the project. In the month of February, Nyandarua Sub-county



training was carried out, mainly targeting the selected Agro vet vendors, farmer group leaders, local administration officers and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan developed, this was necessary as the AAK FCs would work in close partnership with ward agricultural officers especially during the training , farmer field days and other county related activities. Attendance was recorded as 480 farmers (256 Male, 224 Female farmers).



SEPCI farmer training in Nyandarua mainly targeted farmer groups and individual farmers; emphasizing on the harmful effects of improper EPC disposal such as, Cancer, reproductive complication, headaches among others. In addition to the harmful effects,

the EPC triple rinsing concept was also encouraged. It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard. Nyandarua County FCs were to set up a central collection center and store collected farmer group EPCs at the CCC, they were then to coordinate collection by ECCL.



6. Nyeri County

Sensitization in Nyeri was done targeting the County ministry officials; the county officials understood the SEPCI project as well as selecting the sub-counties and groups that took part in the project. Ministry officials agreed to support the project. The leaders/stakeholders sensitization fora



were conducted from the 5th of February to the 20th of February. The total number of stakeholders sensitized was 170 and they included leaders in the following:-



Nyeri CDA Mr. Mwangi and AAK Staff addressing Horticultural group leaders In Hombe Sub-location In Sagana during a sensitization session

The farmer field days were conducted progressively in four sub-counties:

- a) Mathira East
- b) Mathira West
- c) Kieni West
- d) Kieni East



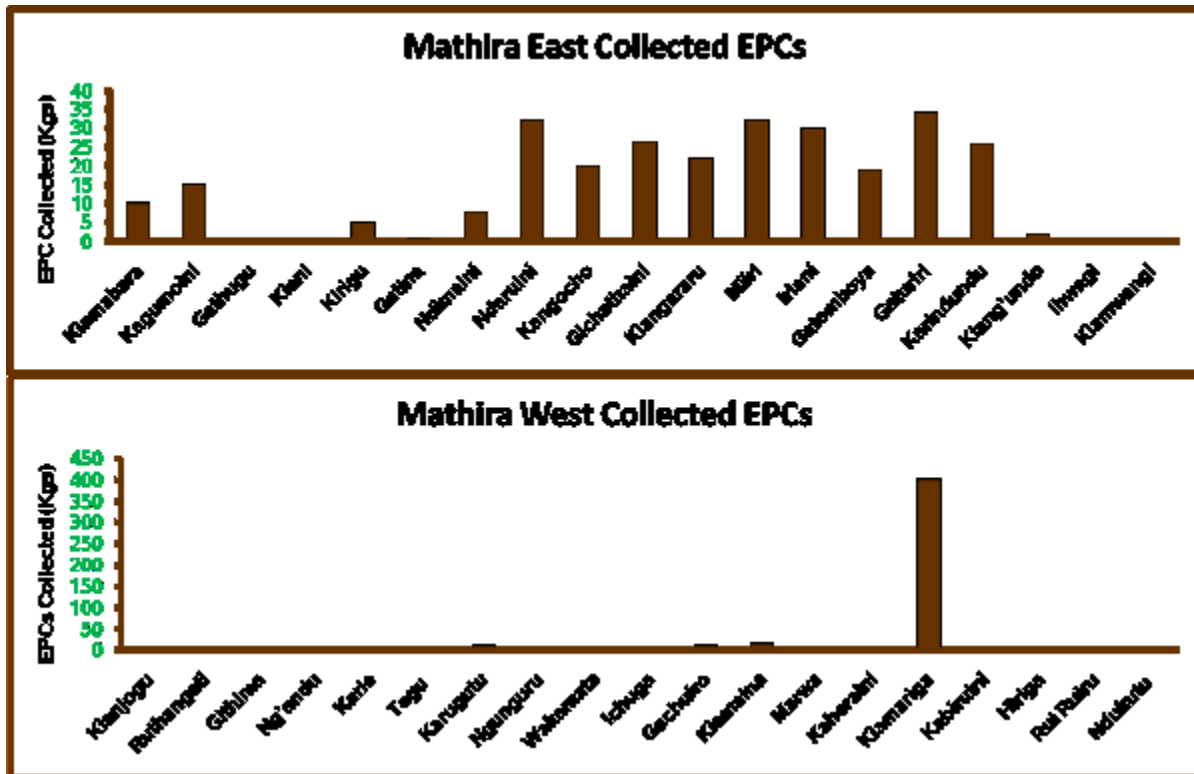
30th June AAK-SEPCI Farmer's Field Day at Mahiga Village in Kieni West.

It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard. The primary success of the field days was pegged on the inclusive efforts and support from the ministry of Agriculture staff via their SCAOs who assisted in identifying, mobilizing and announcing the intended activities to the grass root level. They ministry officials also closely liaised with the administrative staff (national and county officials) in mobilizing the community towards participation in the AAK-SEPCI initiative. To achieve a wholesome approach in community penetration, it was imperative to always to collaborate with different members of the community as participants in the sensitizations. The following notables were observed while executing the field days:

The first EPC collection in Nyeri County was carried out on the 1st and 2nd of Nyeri County.



This initial collection was carried out in only two of the sub-counties, namely; Mathira East and West and their respective collections were as follows.



7. Nakuru County

Nakuru County is a vast agricultural based area with a lot of intensive agriculture being the backbone of the economy.

Sensitization in Nakuru County was carried out targeting the County ministry officials, in attendance was the CDA. The county officials understood the SEPCI project goals as well as having selected the four sub-counties (; Njoro, Molo, Bahati and Subukia) and groups that would take part in the project. Ministry officials agreed to support the project. The county sensitization meeting was hosted by AAK



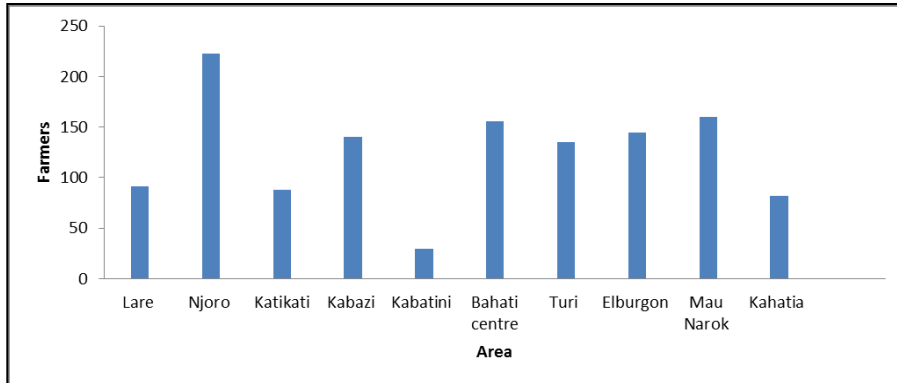
Sub-county training in Nakuru was carried out, mainly targeting the selected Agro vet vendors, farmer group leaders, local administration officers and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan developed, this was necessary as the AAK FCs would work in close partnership with the ward agricultural officers especially during the training , farmer field days and other county related activities.

Each project county was to have at least two farmer field days in each respective sub-county selected. The main aim of the field days was to sensitize farmers on the safe practices in handling pesticides this included purchase, transport, use and disposal, a brief description of the project was also explained the participants including the EPC collection exercise carried out in the project.



Agricultural officers addressing farmers during field day and collection of EPC in Nakuru county

Attendance was recorded as 1250 farmers and 75 students (256 Male, 224 Female farmers).



SEPCI farmer training in Nakuru mainly targeted farmer groups and individual farmers; emphasizing on the harmful effects

of improper EPC disposal such as, Cancer, reproductive complication, headaches among others. In addition to the harmful effects, the EPC triple rinsing concept was also encouraged.

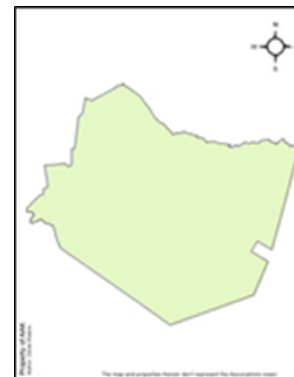
It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard.

Nakuru County FCs were to set up a central collection center and store collected farmer group EPCs at the CCC, they were then to coordinate collection by ECCL.

The project was well received in Nakuru County and farmers appreciated the initiative. However, the collection of the EPC had a very slow start probably due to the time lag between the trainings and field days and the actual EPC collection period. The collected EPCs need to be picked from the collection points and central collection centers and disposed.

8. Taita Taveta County

Sensitization in Taita Taveta County was carried out targeting the County ministry officials. The county officials understood the SEPCI project goals as well as having selected the sub-counties and groups that would take part in the project. Ministry officials agreed to support the project. The county sensitization meeting was hosted by AAK



The farmer field days, following the milestone for the project was 10 which were to be conducted in two chosen stretches and that were project's area of operations. Taveta Sub County conducted three field days. The first field day was conducted at Mghambonyi-Chief's camp on 25th March, 2015 where it had 70 farmers. On 31st March, 2015 at Chala chief's camp where the attendance was 75 farmers attended the farmer training event. Others who attended were the Sub county, ward administrator, county coordinator, ward agricultural officers Sub chiefs and farmers. The training on safe use of pesticide, disposal of empty pesticide containers was the key training on that farmer field day event. The methods of disposal was trained on - methods of triple rinsing, puncturing and removal of the label. Other methods of pesticide handling were trained on that is safe purchase, pictograms, post harvesting intervals of different pesticide, safe transport, the right protection clothing when mixing pesticide and in actual spraying.

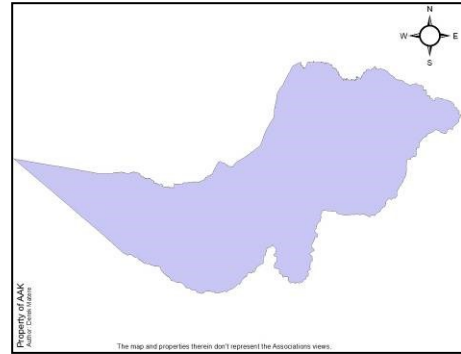
SEPCI farmer training in Taita Taveta was mainly targeting farmer groups and individual farmers; emphasizing on the harmful effects of improper EPC disposal such as, health complications including Cancer, reproductive complication, and headaches among others. In addition to the harmful effects, the EPC triple rinsing concept was also encouraged.



It was a prerequisite that both collection and central collection centers be secure and meet PCPBs safety and storage standard. Taita Taveta County FCs were to set up a central collection center and store collected farmer group EPCs at the CCC, they were then to coordinate collection by ECCL.

9. Kakamega County

Sensitization in Kakamega County was carried out targeting the County ministry officials. The county officials understood the SEPCI project goals as well as having selected the sub-counties, a select agro vets and farmer groups were also chosen who would take part in the project. Ministry officials agreed to support the project. The county sensitization meeting was hosted by AAK.



Two Farmer Field Days (Rounds) were held per Sub-county during the 6 Months period of the SEPCI project in Kakamega County.



Pic s. Ongoing Collection of EPCs (IB Agro vet) Eshisiru, Lurambi Sub-County

During the “1st Round” of the Farmer field days, the Target (i.e. 80 Farmers per Field Day) was missed on 2 occasions (i.e. In Ikolomani-55 and Lurambi-60).

During the “2nd Round” of the Farmer field days, the Target (i.e. 80 Farmers per Field Day) was missed on 3 occasions (i.e. In Ikolomani-64, Lurambi-60 and Lugari-68).

The Average (i.e. 80 Targeted Farmers) combined total per Sub-county would yield 400 Farmers as the overall Target at any given Round of farmer field day.

During the “1st Round”, this target was surpassed by a combined total of 434 Farmers turning out for the field day; (Averaging 86.8 or an equivalent of 87 farmers per field day per given sub-county).

During the “2nd Round”, this target was surpassed by a combined total of 444 Farmers turning out for the field day; (Averaging 88.8 or an equivalent of 89 farmers per field day per given sub-county).

It is also noted that the combined number of farmers increased by 10 Heads (i.e. from 434 in the Previous Round to 444) in the Final Round of Farmer field day.



Pic t. Ongoing Collection of EPCs (Shianda Agro vet) Shianda, Mumias East Sub-County

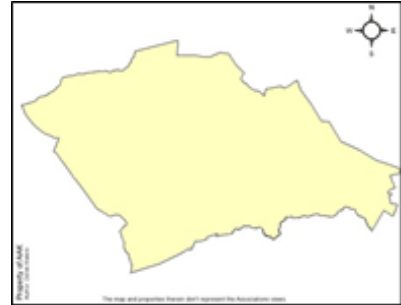
The Project kicked off successfully during its initiation in the County, though it was hampered by challenges on its course, causing it to slightly lose momentum. This included:

- Some Agro vet Outlets pulled off from the Project due to personal reasons while others required to be remunerated in order to participate.
- Some farmers required some form of compensation in order to deliver the EPCs at the Collection Centres.
- At one particular time, some activities were put on hold (egg. Some Farmer field days had to be called off and rescheduled) due Financial constraints; as funds delayed to trickle from the project donor.

In order to avoid stalling and stagnating of the Project, counter measures were formulated and deployed to keep the Project on motion. At the time of compilation of this report, the project was still going on, with the collection of EPCs looking promising as time goes by.

10. Trans Nzoia County

Sensitization in Trans Nzoia was carried out in Kitale targeting the County ministry officials, in attendance was the CDA. By the end of the session the county officials had understood the SEPCI project goals as well as having selected the sub-counties (Trans Nzoia East, Trans Nzoia West, Endebess, Kwanza and Kiminini), and groups that would take part in the project.



Sub-county training in Trans Nzoia was carried out, mainly targeting the selected Agro vet vendors, farmer group leaders, local administration officers and MOA field staff (WAO) from the sub county agricultural officers (SCAO) department. The meetings were convened to share the project goals and the implementation plan developed, this was necessary as the AAK FCs would work in close partnership with the ward agricultural officers especially during the training , farmer field days and other county related activities..

Attendance was varied with the highest attendance recorded at 367 farmer and 32 farmers as the lowest.

SECTION 2: PERFORMANCE AND OUTPUTS

1. Nyeri County

Attendance and Gender statistics

Total attendance and sensitized population achieved in Nyeri county was at 1657 farmers through the implementation of 22 FFDs and farmers groups sensitizations. The total farmers mobilized in the four sub-counties came to 1069 and 618 for the males and females, respectively, as depicted in the figure below.

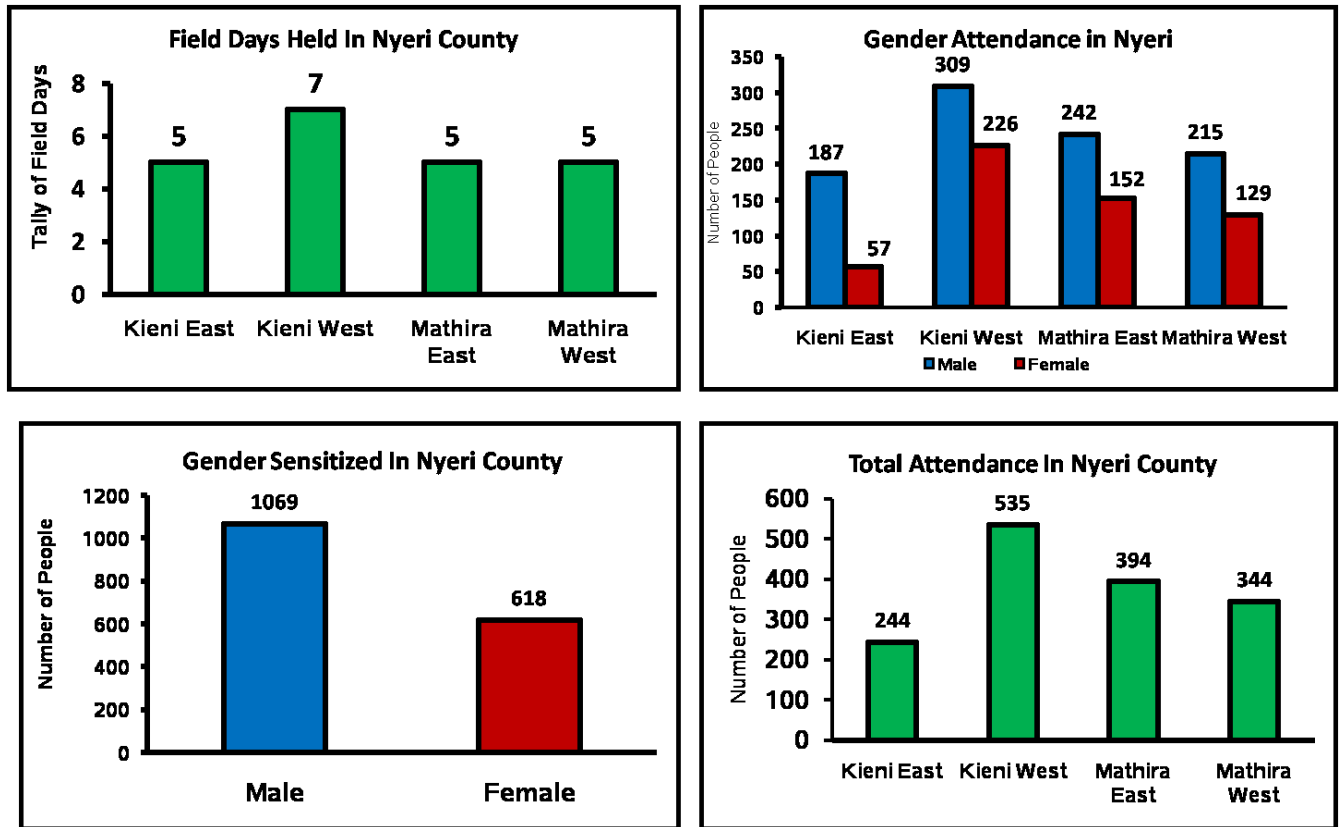
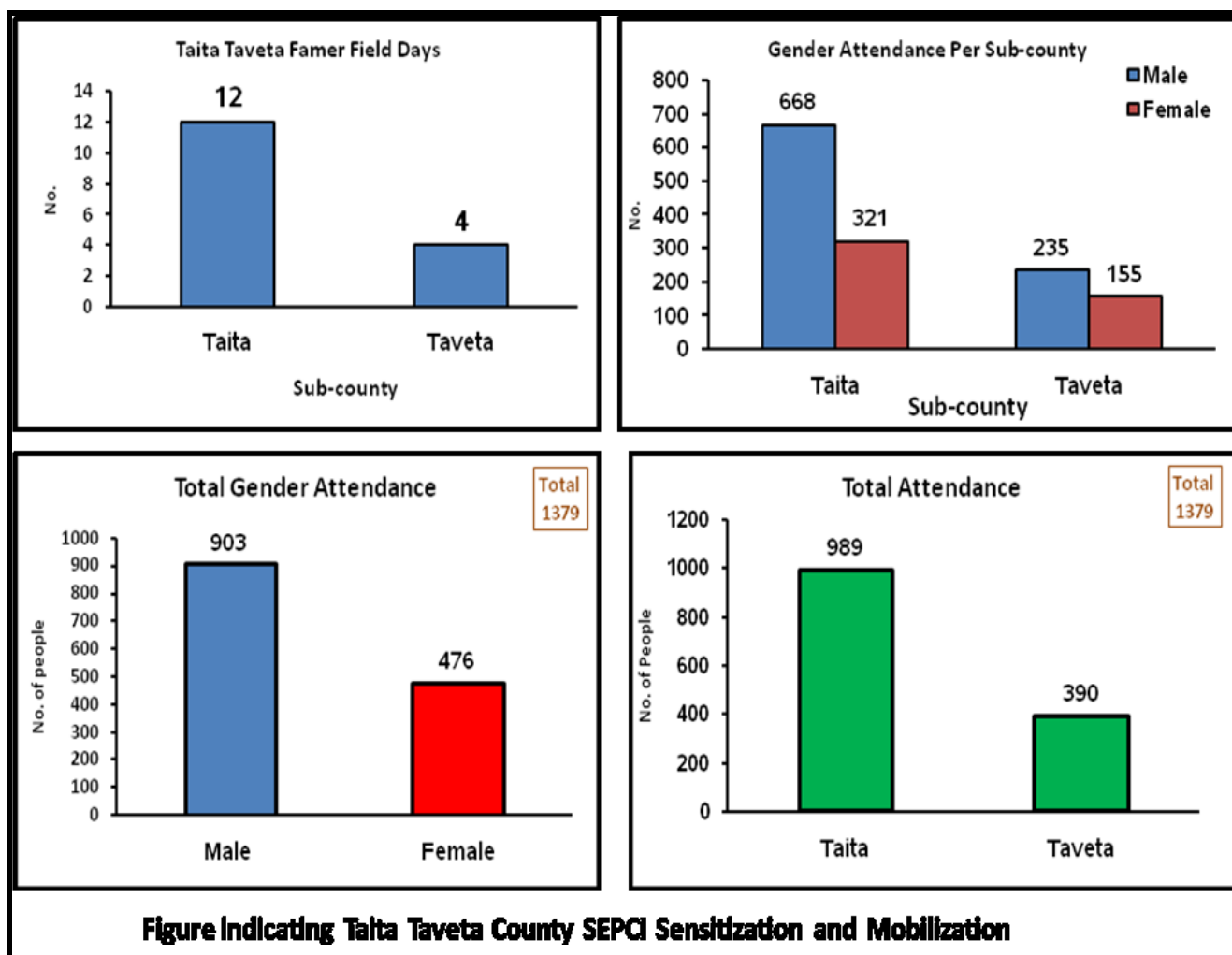


Figure indicating Nyeri County SEPCI Sensitization and Mobilization

2. Taita Taveta County

Attendance and Gender statistics

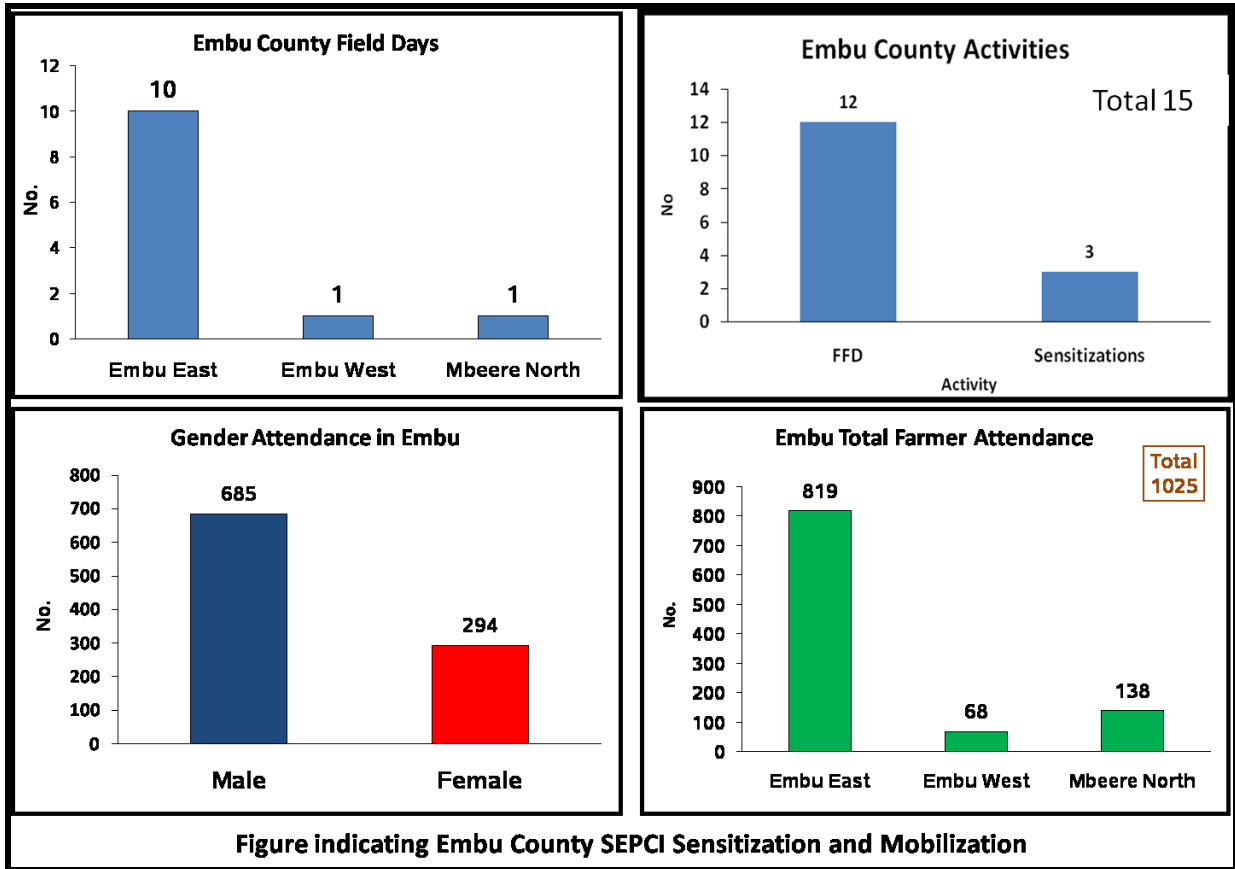
Total attendance and sensitized population achieved in Taita Taveta county was at 1379 farmers through the implementation of 16 FFDs and farmers groups sensitizations. The total farmers mobilized in the two sub-counties came to 903 and 476 for the males and females, respectively, as depicted in the figure below.



3. Embu County

Attendance and Gender statistics

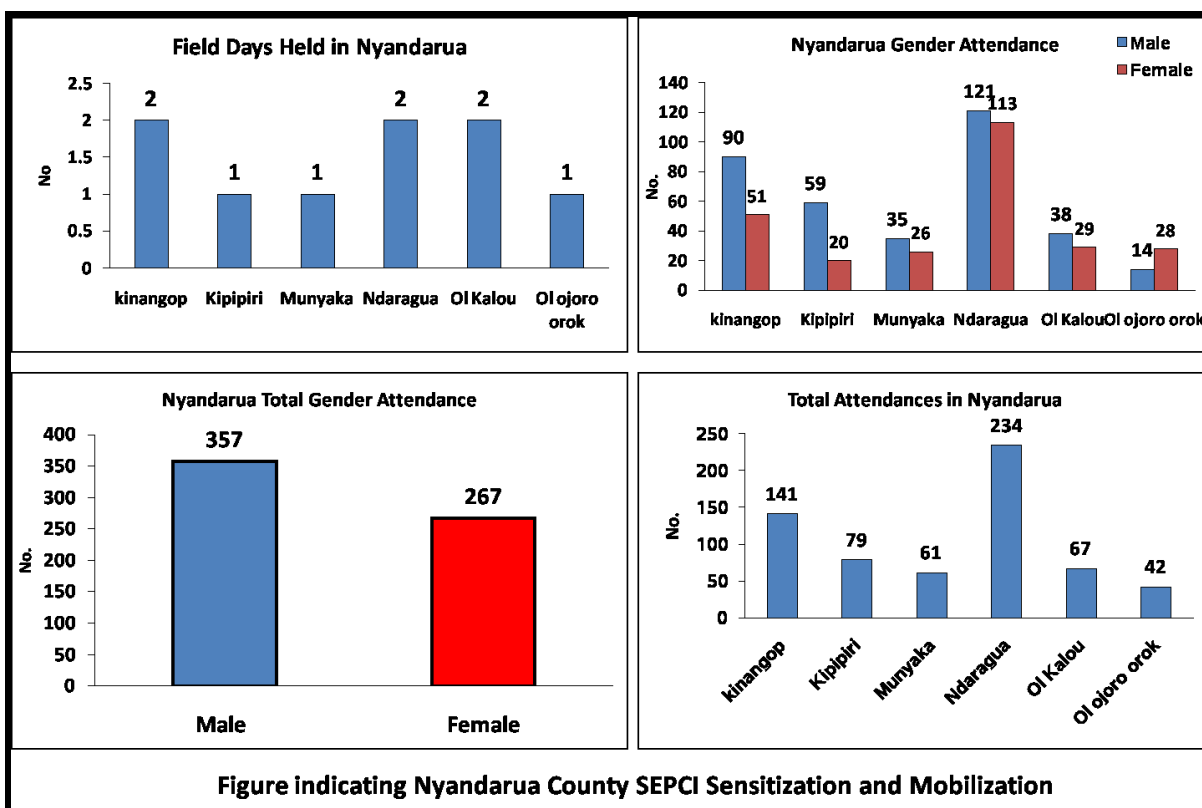
Total attendance and sensitized population achieved in Embu County was at 1029 farmers through the implementation of 12 FFDs and farmer groups sensitizations. The total farmers mobilized in the three sub-counties came to 685 and 295 for the males and females, respectively, as depicted in the figure below.



4. Nyandarua County

Attendance and Gender statistics

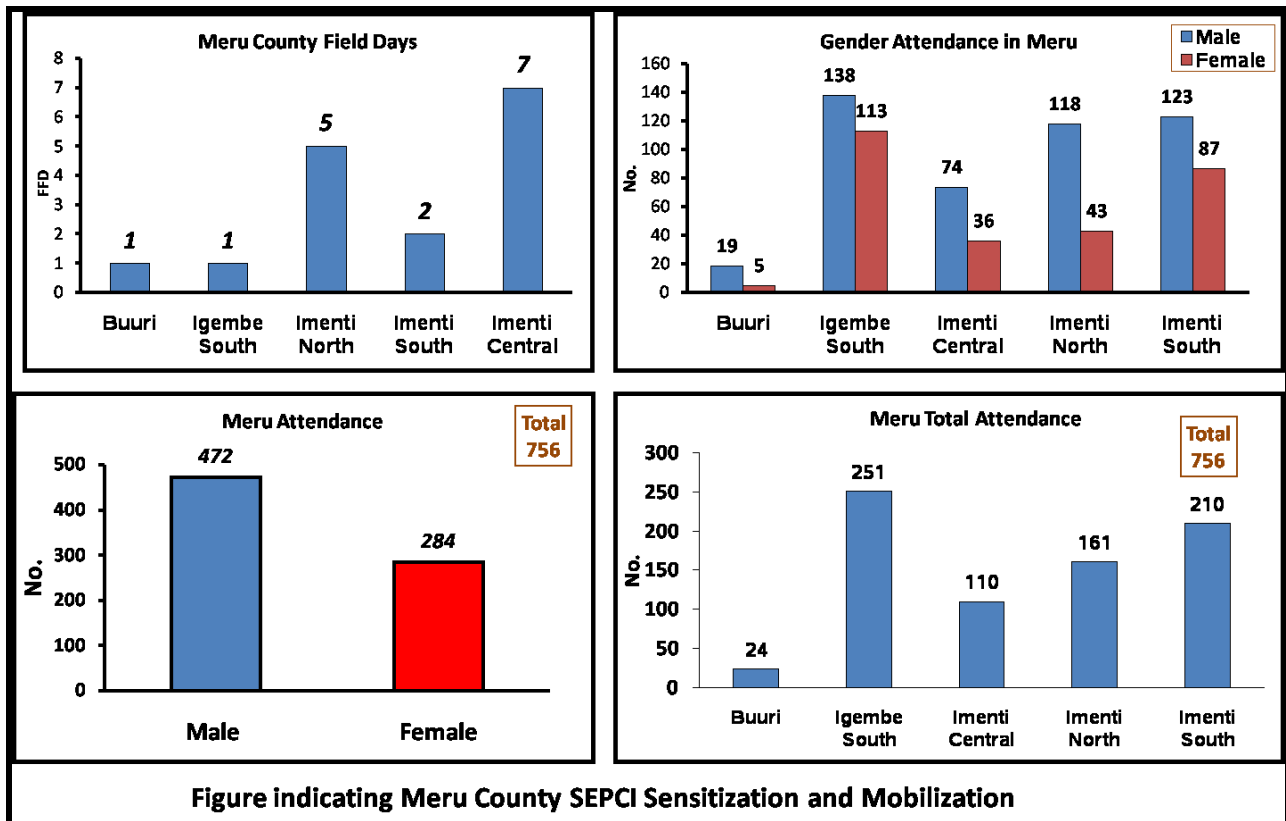
Total attendance and sensitized population achieved in *Nyandarua County* was at 624 farmers through the implementation of 10 FFDs and farmer groups sensitizations. The total farmers mobilized in the six sub-counties came to 357 and 267 for the males and females, respectively, as depicted in the figure below.



5. Meru County

Attendance and Gender statistics

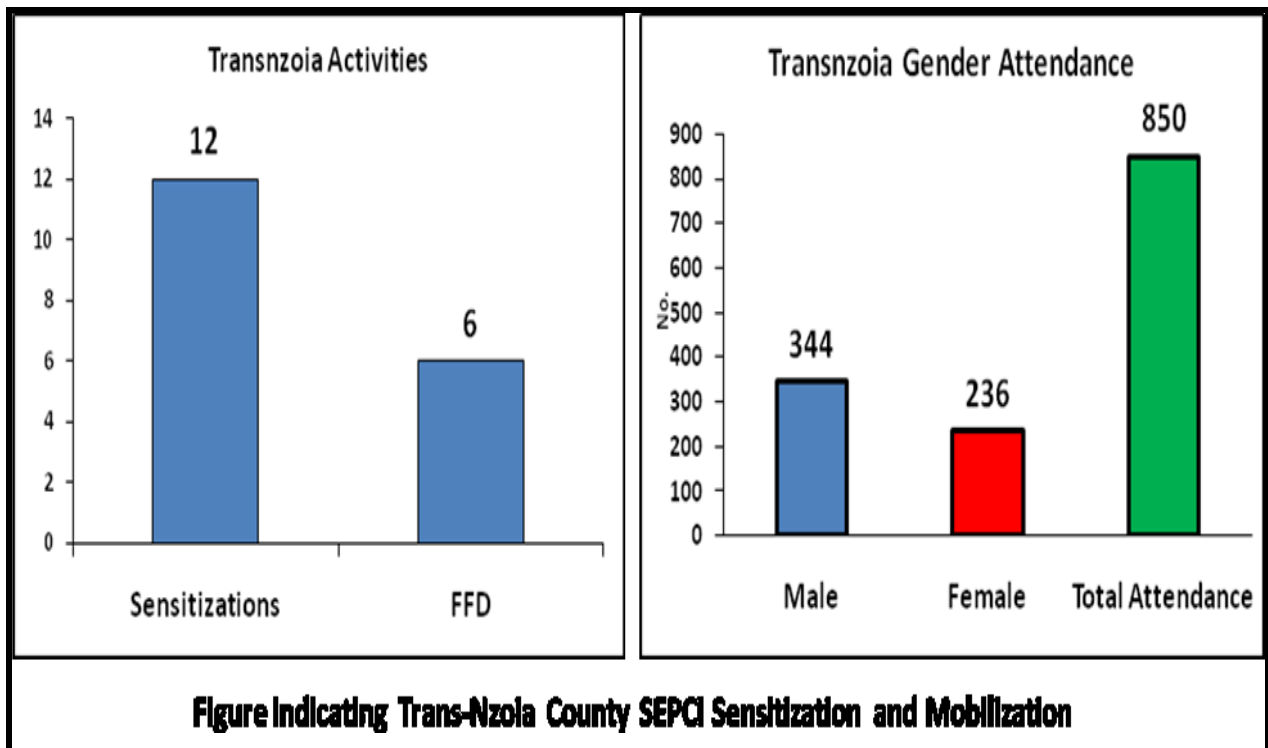
Total attendance and sensitized population achieved in *Meru County* was 756 farmers through the implementation of 16 FFDs and farmer groups sensitizations. The total farmers mobilized in the 5 sub-counties came to 476 and 284 for the males and females, respectively, as depicted in the figure below.



6. Trans Nzoia County

Attendance and Gender statistics

Total attendance and sensitized population achieved in *Trans-Nzoia County* was at 850 farmers through the implementation of 18 FFDs and farmer groups sensitizations. The total farmers mobilized came to 344 and 236 for the males and females, respectively, as depicted in the figure below.



7. Nakuru County

Attendance and Gender statistics

Total attendance and sensitized population achieved in *Nakuru County* was at 1375 farmers through the implementation of 11 FFDs and farmer groups sensitizations. The total farmers mobilized came to 725 and 650 for the males and females, respectively, as depicted in the figure below.

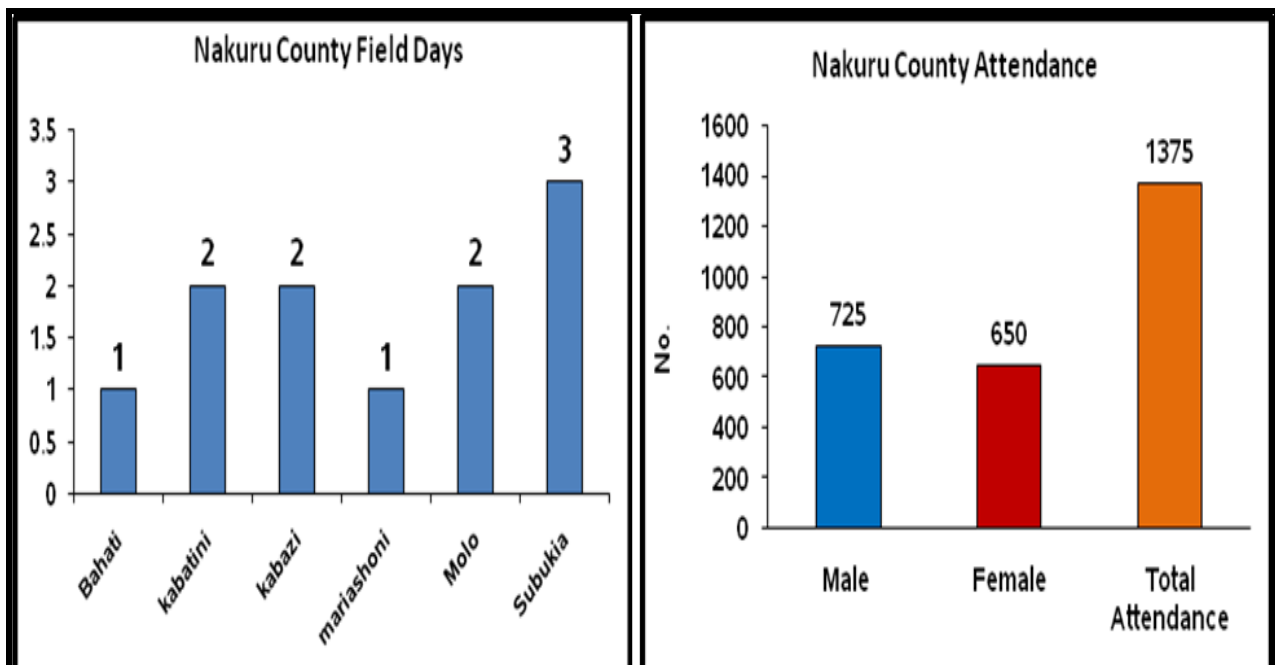
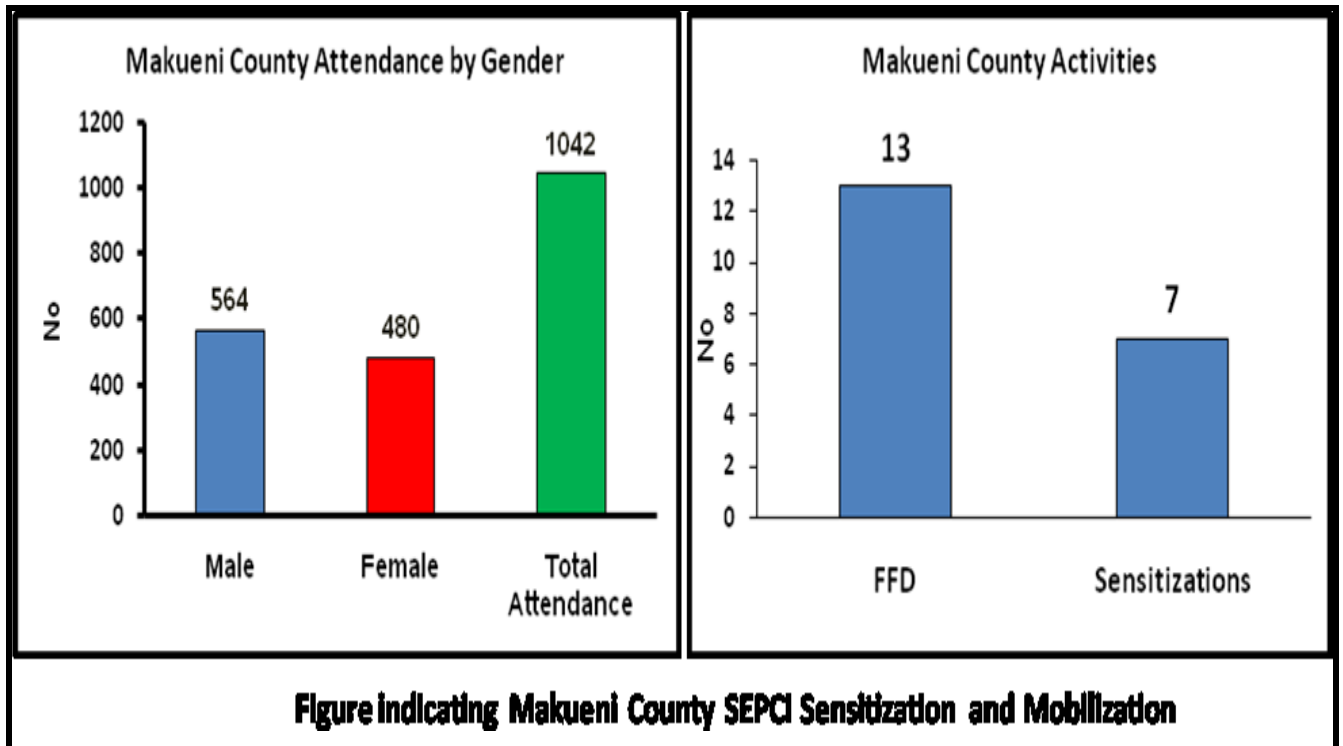


Figure indicating Nakuru County SEPCI Sensitization and Mobilization

8. Makueni County

Attendance and Gender statistics

Total attendance and sensitized population achieved in *Makueni County* was at 1042 farmers through the implementation of 20 FFDs and farmer groups sensitizations. The total farmers mobilized came to 564 and 480 for the males and females, respectively, as depicted in the figure below.



9. Homabay County

Attendance and Gender statistics

Total attendance and sensitized population achieved in *Homabay County* was at 999 farmers through the implementation of 15 FFDs and farmer groups sensitizations. The total farmers mobilized in the five sub-counties came to 592 and 324 for the males and females, respectively, as depicted in the figure below.

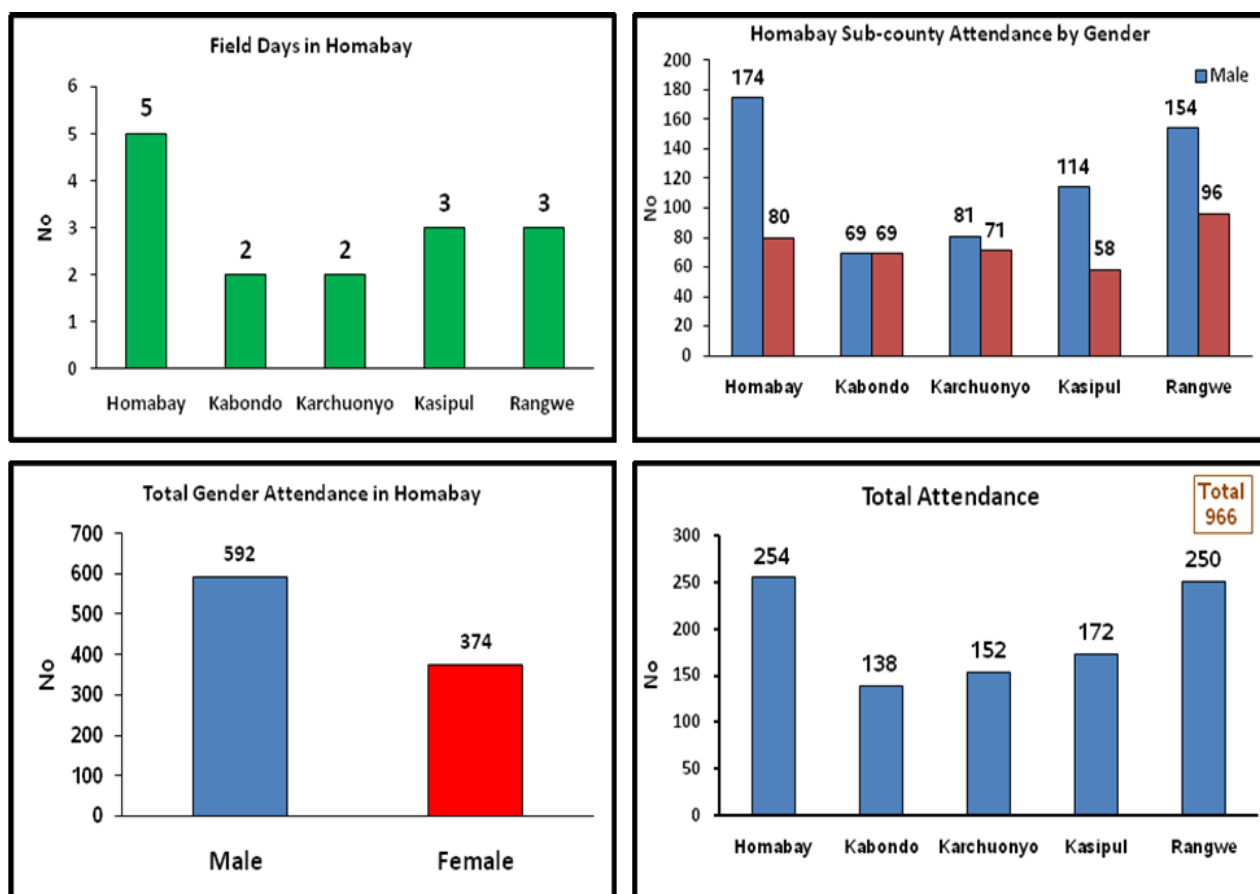


Figure Indicating Homabay County SEPCI Sensitization and Mobilization

10. Kakamega County

Attendance and Gender statistics

Total attendance and sensitized population achieved in *Kakamega County* was at 1091 farmers through the implementation of 17 FFDs and farmer groups sensitizations. The total farmers mobilized in the six sub-counties came to 612 and 479 for the males and females, respectively, as depicted in the figure below.

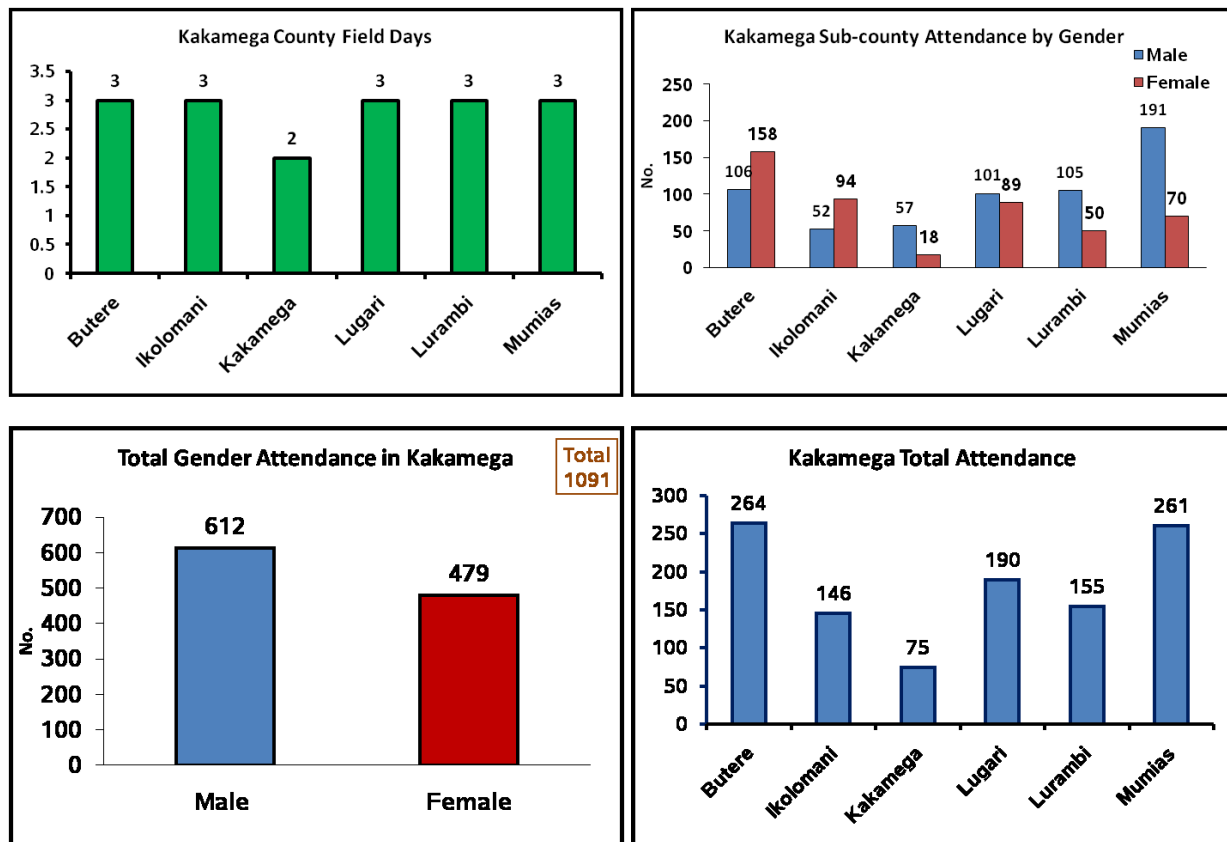


Figure indicating Kakamega County SEPCI Sensitization and Mobilization

COUNTRY SEPCI PERFORMANCE

1. Attendance and Gender statistics

Total attendance and sensitized population achieved in *Kenya from February to June 2015* was at 10,828 farmers through the implementation of its FFDs and farmer groups sensitizations. The total farmers mobilized in the 10 Counties came to 6356 and 4158 for the males and females, respectively, as depicted in the figure below.

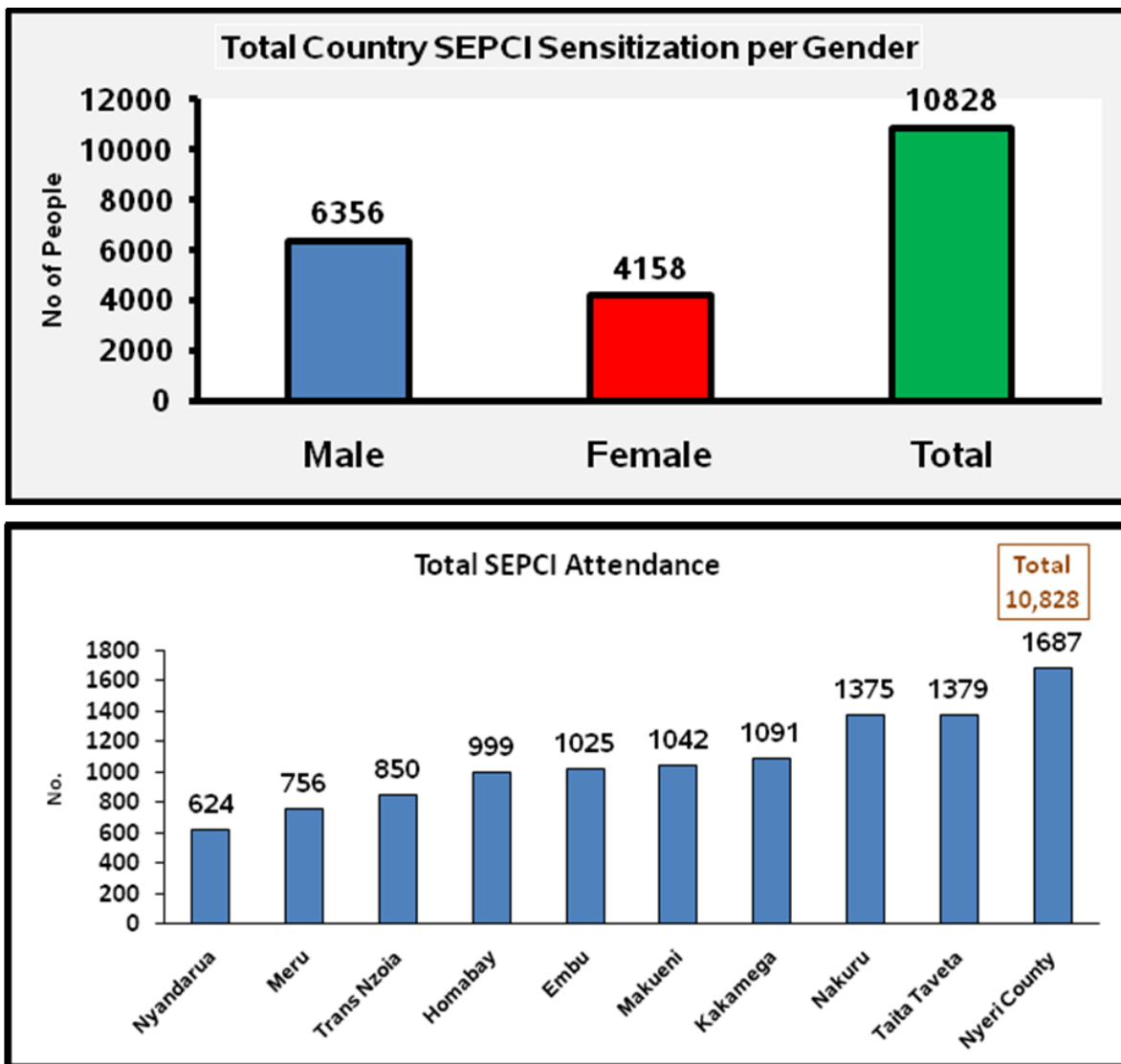
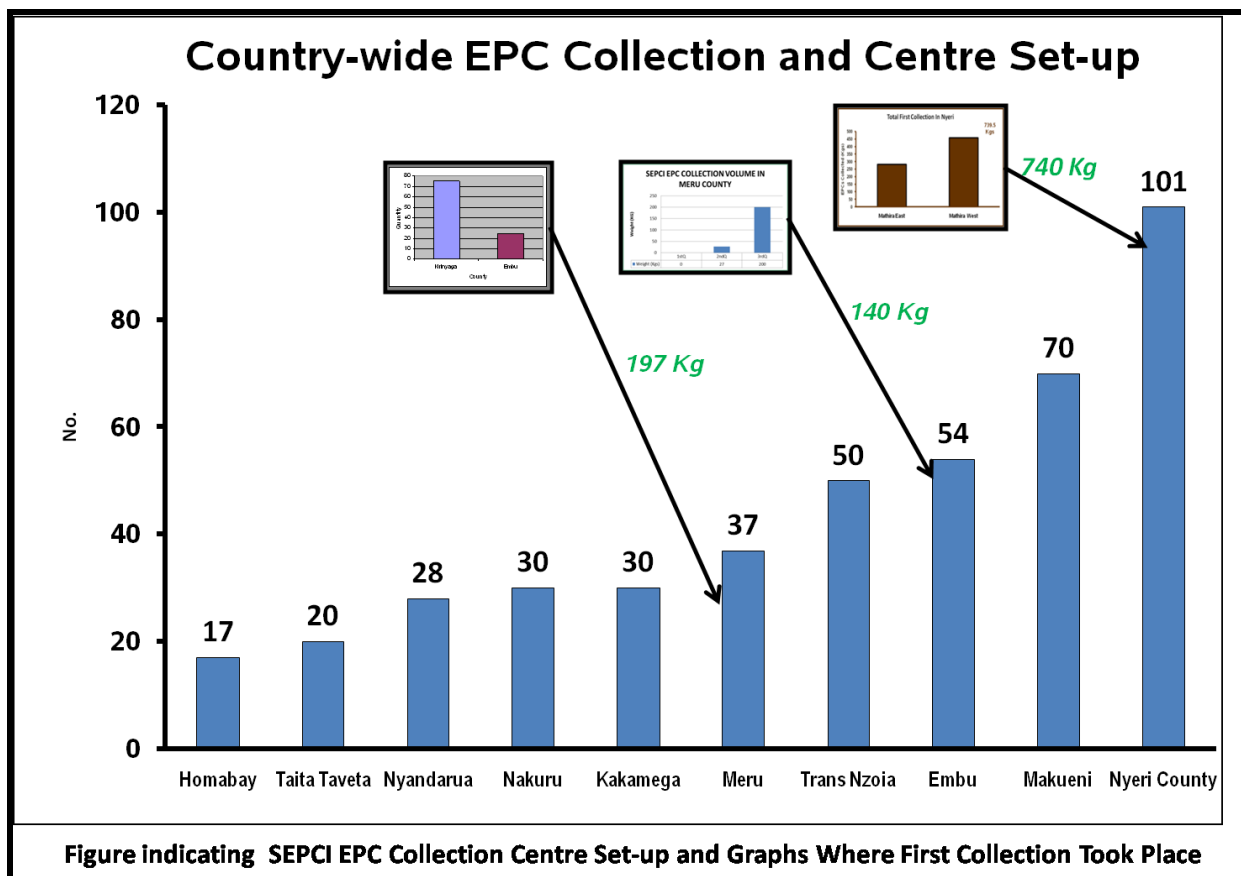


Figure Indicating County SEPCI Sensitization and Mobilization

2. Collection Centre Set-up and First EPC Collection Quantity in April.

Total EPC collection achieved in the first round in March was conducted in Nyeri, Embu and Meru Counties. These counties yielded a total quantity of 1,077 Kg of EPC (197 Kg from Meru, 140 Kg from Embu and 740 Kg from Nyeri). This collection was from only a period of three months from project commencement and farmer sensitizations. The figures portrayed are representative of only the 1st round of EPC collection from just 3 out of the 10 Counties and thus it is expected during the second round of collection in August the quantity will be significantly higher.



3. EPC Collection Centre Distribution per respective county size.

Total SEPCI EPC bags in the Country are 437 in total that are active (as indicated in the table below) and over 500 considering those that are yet to start being active in collection.

County	EPC CC	Size (Km²)
Homabay	17	3155
Taita Taveta	20	17084
Nyandarua	28	3108
Nakuru	30	7508
Kakamega	30	3033
Meru	37	6936
Trans Nzoia	50	2471
Embu	54	2818
Makueni	70	8008
Nyeri	101	2362

Table Indicating active SEPCI EPC collection centre and approx. county coverage area

SECTION 3

Project achievements

CONTAINER MANAGEMENT PROJECT MILESTONES					
<u>ACTIVITY</u>	<u>START DATE</u>	<u>END DATE</u>	<u>RESPONSIBLE</u>	<u>DELIVERABLES</u>	<u>REMARKS</u>
Training for Field coordinators (FC), PCPB, CSU	19th January 2015	19th January 2015	Evelyn	Training and sensitization on the project to PCPB, CSU, FC, Ensure all are clear on their responsibilities, all are clear on the CM project	Done
Meeting with County Heads	26th January 2015	6th February 2015	RS, EL, FC, with assistance from CSU, PCPB,	Training and sensitization on the project to 10 county officials Ensure all are clear on the CM project, get support from the county on setting the CM project in the county, Select relevant sub-counties, farmer groups and agro vets to take part in the project	Done
Meeting Sub-county officials, farmer group leaders, Agrovets, local administration	9th February 2015	20th February	RS, EL, FC, with assistance from CSU, PCPB, County coordinator	Training and awareness to selected sub-counties, farmer groups, agro vets and local administration. Get support on how to implement the project in relevant sub-counties and farmer groups. Identify central collection	Done

				centers	
Identification and setting up of agro vets outlets or farmer group centers as collection centers.	9th February 2015	20th February	FC, county coordinator, CSU	5 agro vets outlets or farmer group centers as collection centers in each of the 10 Counties	Done
Farmer Training and awareness, mobilization and preparation	9th February 2015	27th February	FC, with assistance from CSU, PCPB, County coordinator	conduct at least 1 farmer field day in each county before the end of February targeting at least 80 farmers.	Done
END OF FIRST QUARTER					
Farmer Training and awareness, mobilization and preparation	2nd March 2015	27th March 2015	FC, with assistance from CSU, PCPB, County coordinator	conduct at least 2 farmer field days in each county before the end of March targeting at least 80 farmers.	Done
Purchase of bins to be used in the collection of triple rinsed punctured EPC.	2nd March	13th March	FC	purchase bins for agrovet outlets and/or bags for farmers societies	Done

Distribution of bins and bags to selected farmer society offices and agrovet outlets	2nd March	13th March	FC	Ensure all centers have bins and or bags for collection	Done
Setting up of central collection centers	16th March	20th March	FC, county coordinator, CSU	central collection store/centers for all containers identified and set	Done
END OF SECOND QUARTER					
Farmer Training and awareness, mobilization and preparation	1st April	30th June	FC, with assistance from CSU, PCPB, County coordinator	conduct at least 5 farmer field days in each county before the end of April targeting at least 80 farmers.	Done
Transportation of EPC from farmer societies, agro vets to central collection centers (CCC)	1st May	30th June	FC, county coordinator	1st batch of EPC transported to CCC	Done
Safe-guarding and Preparation of EPC at CCC for transportation and data collection	1st May	30th June	FC, county coordinator	EPC safe guarded and prepared ready for transportation	Done
Data collection of EPC at CCC	1st May	30th June	FC, county coordinator	data collected on no, size and type of EPC received at each CCC	Done

Transportation of EPC from central collection centers to disposal site	1st May	30th June	FC, county coordinator, ECCL	Transport all EPC to disposal site	Done
---	---------	-----------	------------------------------	------------------------------------	------



SECTION 4

Project challenges

Despite the project success in the selected project areas, a few challenges were experienced, some of which fell within the scope of the unforeseen challenges. Some of these challenges include;

1. **Late project inception:** The project did not start as had been anticipated (Early December) as the funding came later than expected when the office had closed down for the End of year. This led to having activities planned for December being carried out from January. It was also noted that the project will end in June and not September as anticipated. For this reason, the milestones had to be adjusted to suit the time frame.
2. **CSU Miscommunication:** Involving the KAPAP CSU's has not been easy. This can be attributed to lack of initial briefing on the project both from AAK and from KAPAP head office. Most CSU's were not aware of the project and of the collaboration with AAK. They also found it a challenge to be part of the SEPCI activities as it was not included in their programs.

To remedy this, it was agreed that AAK field coordinators give a brief to all CSU's in their office and write updated reports to the CSU. It was also agreed that AAK field coordinators invite the KAPAP CSU to all activities in the field.

3. **Scope Creep:** There are more collection centers being set up in the counties as opposed to 5 and 2 main centre because of the convenience. This was noted from all the county leadership meetings. In all the counties, it was felt that to get maximum impact and because of the need and agricultural activities the sub-counties to be involved in the project needed to be increased and that translated to increase in the number of collection centers which translated to an impact on the budget. It should however be noted that the difference will be accommodated in the main budget. The additional centers will not have a big impact on the budget; this is because the project has made savings to accommodate the additional centers through combining some activities with others, for example, county/sub-county sensitization meetings being combined with setting up of

collection centers and setting up of central collection centers. The project will eventually work within the set budgets and will strive to ensure more field activities to the farmers will take priority.

4. **Farmer Token Mentality:** Farmers asking for compensation/incentives to return the containers. This can only be solved through intensive campaigns and awareness so that they are aware that the project is there to help them and that no financial gain will be obtained from the containers being collected.
5. **Not triple rinsing:** It was noted during the course of project implementation; despite sensitization farmers did not fully practice the triple rinsing concept as well as puncturing and removing the label. This would only be solved through continued sensitization to the farmers on the reason as to why triple rinsing is beneficial.
6. **Disposal System Sustainability:** An issue of great concern to stakeholders was the continuity of the system set up by the SEPCI project considering farmers have been sensitized on the proper disposal via the EPC bins from AAK.
7. **Fund constraints:** There was some project sites that project implementation could not have been carried out due to constraints in funds.
8. **Farmer Illiteracy:** there was a high case of farmer illiteracy noted, in some cases farmers had to be sensitized in their local language so as to pass on the message clearly.
9. **FC Logistical troubles:** Some AAK field coordinators had a challenge navigating through the various project sites due to poor road networks and in some cases lack of transport facilities. This was majorly attributed to the fact that most FCs relied a lot on the Ministry of Agriculture official vehicle which had a very erratic schedule.

SECTION 5

Conclusions

Despite the delayed start of the project, commendable gains were achieved throughout the implementation counties. As much as the original plan and budget accommodated for awareness campaigns and sensitizations to the public, it was felt that the project should use the FM stations and the media to create awareness of the need to return EPC back to collection centers.

Recommendations

1. Sensitization on triple rinsing should be enhanced to make EPC management sustainable for the small scale farmer.
2. Project sites that enjoyed exceptional response to the project like Nyeri should start considering sustainability of the established system. The stakeholders involved in this phase of the project can partner to come up with a sustainable approach to the CM sustainability.
3. Encourage and explore alternative sensitization methods. More diverse approaches should be encouraged in carrying out sensitization activities.
4. Continued sensitization of the farmers will see a cancelation to the token mentality that is so deeply rooted in them and the adoption of proper disposal practices.
5. AAK should strongly consider partnerships with organizations that carry out similar activities. This will contribute to the commercial viability goal of the project.
6. Project logistical assessment. Before implementation knowledge on the project site would assist in planning and flexibility for unforeseen challenges.
7. Project monitoring. An effective monitoring system should be adopted to monitor project progress and map project adaptability, technological tools are available for this purpose some of which include Epi Collect plus, Fulcrum, ODK e.t.c

REFERENCES

- Kenya National profile
- SEPCI County Field Coordinators weekly and activity reports and county reports
- Guidelines for the safe and effective use of crop protection products (Guideline 1)
- Guidelines for personal protection when using crop protection products in hot climates (Guideline 2)
- Guidelines for the safe warehousing of crop protection products (Guideline 3)
- Guidelines for the avoidance, limitation and disposal of crop protection product waste on the farm (Guideline 5)
- Guidelines for the safe formulation and packaging of crop protection products (Guideline 6)
- Guidelines for emergency measures in cases of crop protection product poisoning (Guideline 7).
- Quality Control of Crop Protection Products.
- Disposal of unwanted pesticide stocks - Guidance on the selection of practical options.

APPENDICES

APPENDIX 1: SEPCI TRAINING CURRICULUM

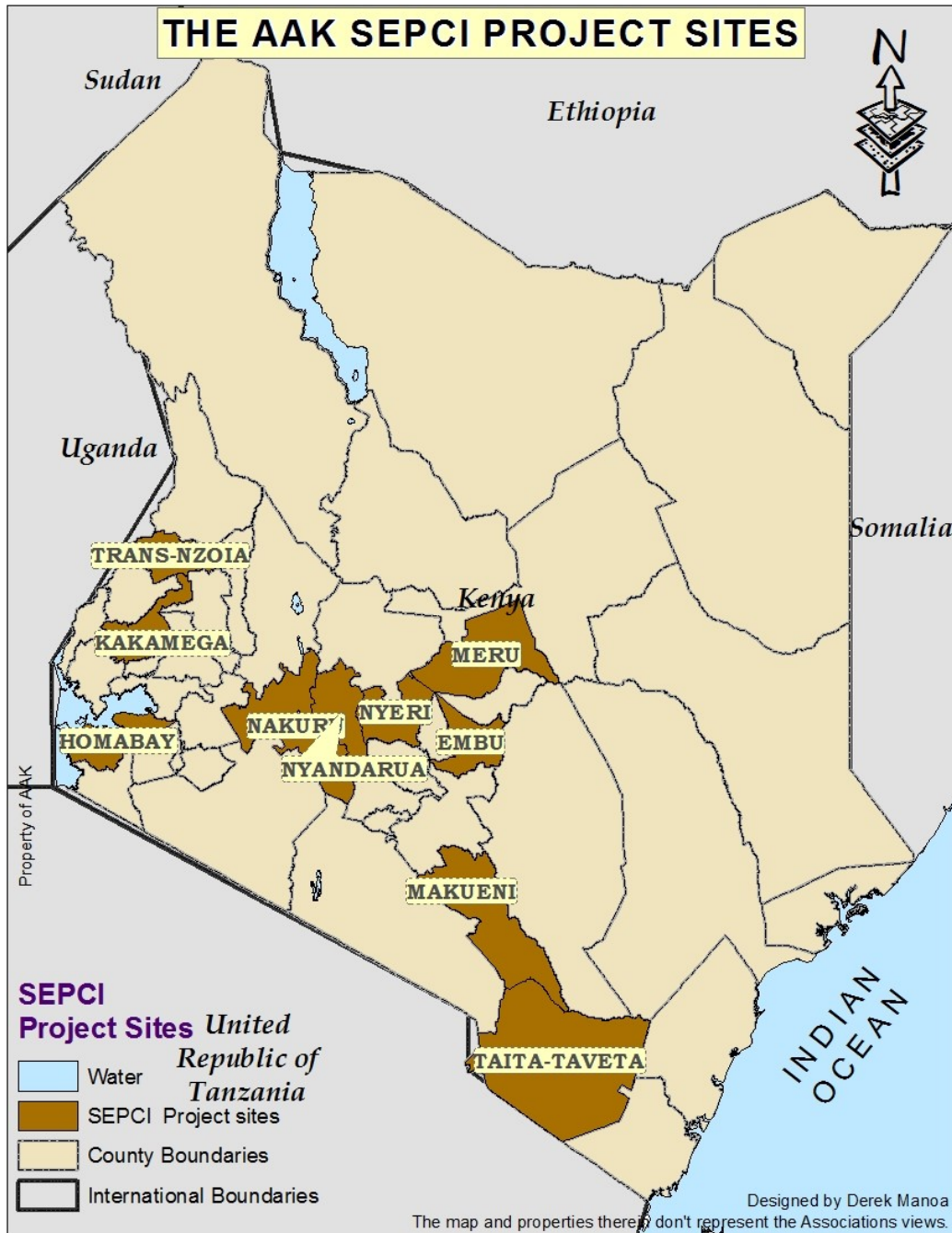
Introduction and Welcoming of all the farmers to the Farmers field day

- Station 1: Registration.**
- Station 2: Brief about Agrochemicals Association of Kenya.**
- Station 3: Introduction to field day.**
- Station 4: Introduction to pests and diseases.**
- Station 5: Introduction to pesticides.**
- Station 6: Labels and pictograms.**
- Station 7: Safe handling of pesticides (purchase, transport, storage, use and disposal).**
- Station 8: Sprayers, spraying skills, and protective clothing.**
- Station 9: First Aid and Disposal**
- Station 10: Container Management project**

Final Baraza - Social affairs and community affairs and Final Closure

The method of training usually applied was usually a practical demonstration. Trainers were allocated different stations and equipped with relevant teaching aids. As the farmers arrived, they were directed to each station in a systematic manner as indicated by the curriculum and they moved systematically until the last station whereby they all converged for the Final Baraza which incorporates all matters that affect the division including social issues. The trainers aided by posters, dummies, specimens, sprayers and protective clothing usually trained the farmers in Swahili, or common/local dialect of the area while practically demonstrating each topic. Both the literate and illiterate farmers easily understood this approach.

APPENDIX 2: SEPCI Project site maps



Map of Indicating SEPCI Operation Counties in Kenya

APPENDIX 3: Agrochemicals Association of Kenya Posters Used in The Training/Sensitization Curriculum



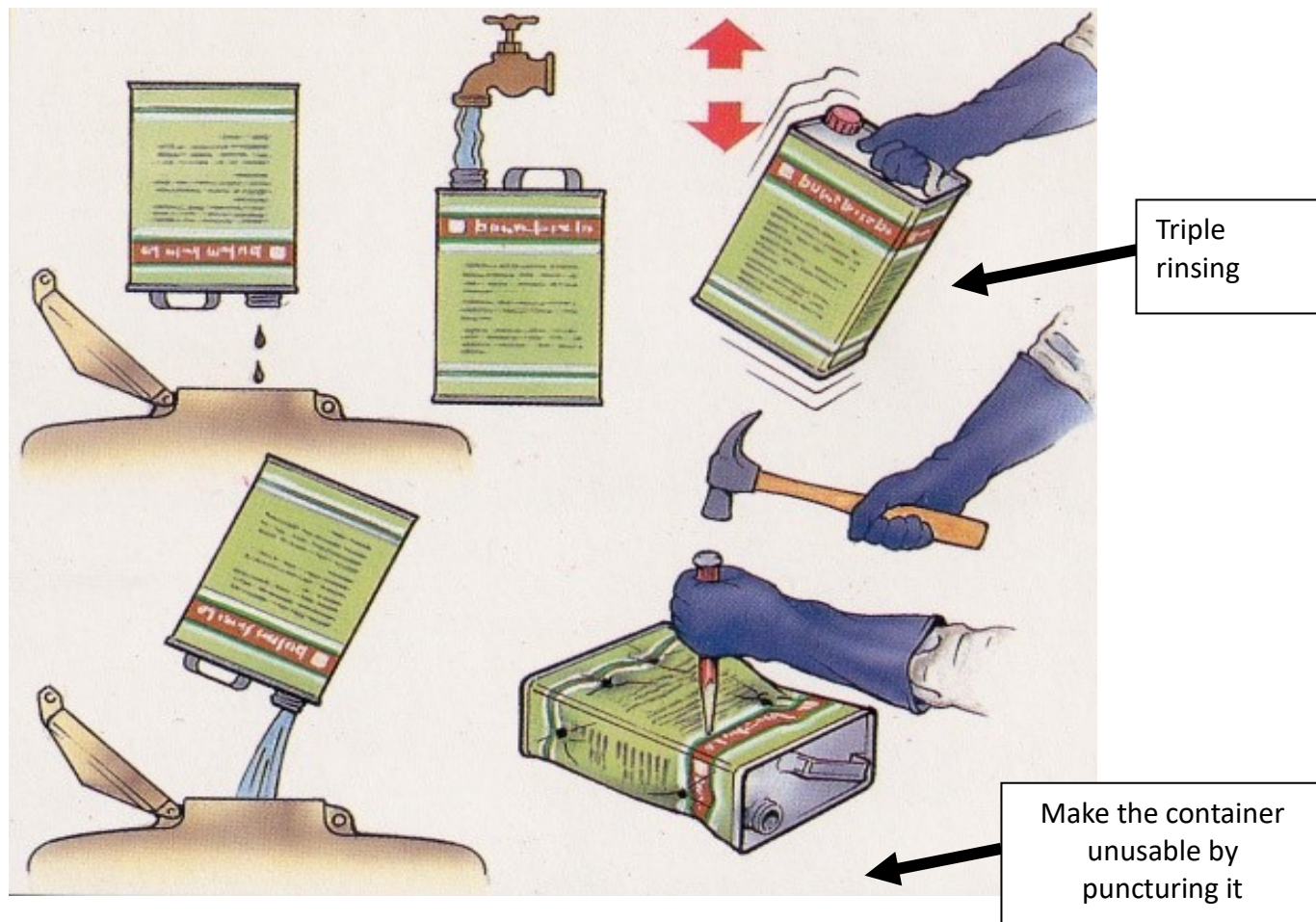
AAK SEPCI Training Posters

APPENDIX 4: Agrochemicals Association of Kenya EPC Management Poster Used at the EPC Collection Centres



AAK EPC CONTAINER MANAGEMENT POSTER

APPENDIX 5: Agrochemicals Association of Kenya Posters Used in The Training/Sensitization Curriculum



Appendix 6: Potential & Future Collaborators with the AAK on the SEPCI and Safe Use Programmes in Kenya

- 1. Kenya Tea Development Authority (KTDA).*
- 2. Agribusiness Farmers Association of Kenya (AFA).*
- 3. Farm Concern Kenya*
- 4. Department of Meteorological Services in Kenya (MET).*
- 5. Horticultural Crops Development Authority*
- 6. United States Agency for International Development.*
- 7. Conservation Africa.*
- 8. World Relief.*
- 9. Farmer Group and Associations in Kenya*