



Republic of Kenya

**Environmental and Social Management Framework
for Kenya Agricultural Productivity and Agribusiness
Project (KAPAP)**

February 2009

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ACRONYMS AND ABBREVIATIONS

ASAL	Arid and Semi-Arid Lands
ATIRI	Agricultural Technology and Information Response Initiative
AGOA	African Growth Opportunity Act
BMP	Best Management Practices
BP	Bank Procedure
CAP	Community Action Plan
CAS	Country Assistance Strategy
CBS	Central Bureau of Statistics
CBO	Community Based Organization
CIG	Common Interest Group
CWG	Community Working Group
CGIAR	Consultative Group on International Agricultural Research
CMS	Convention on Migratory Species of Wild Animals
KS	KAPAP Secretariat
DDO	District Development Officer
DEO	District Environment Officer
DEC	District Environment Committee
DRSRS	Department of Resource Survey and Remote Sensing
DSC	District Steering Committee
DSDO	District Social Development Officer
RSU	Regional Service Unit
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Co-ordination Act
ERS	Economic Recovery Strategy for Wealth and Employment Creation
EMP	Environmental Management Plan
ESA	Environmental and Social Assessment
ESMF	Environmental and Social Management Framework
FFS	Farmer Field Schools
GEF	Global Environment Facility
GHGs	Greenhouse Gases
GMP	Good Management Practices
GMT	Good Management Technologies
GOK	Government of Kenya
IBA	Important Bird Area
ICC	Inter-Ministerial Coordinating Committee
ICM	Integrated Crop Management
ICRAF	International Council for Research on Agroforestry
IDA	International Development Association
ISC	Inter-Ministerial Steering Committee
IMCE	Inter-Ministerial Committee on Environment
IPs	Indigenous Peoples
IPO	Indigenous Peoples Organization
IPP	Indigenous Peoples Plan

IPM	Integrated Pest Management
KAPAP	Kenya Agricultural Productivity and Agribusiness Project
KARI	Kenya Agricultural Research Institute
KEMRI	Kenya Medical Research Institute
KMFRI	Kenya Marine and Fisheries Research Institute
KEFRI	Kenya Forestry Research Institute
KWS	Kenya Wildlife Service
M&E	Monitoring and Evaluation
MG & SS	Ministry of Gender and Social Services
MoA	Ministry of Agriculture
MoH	Ministry of Health
NALEP	National Agricultural and Livestock Extension Project
NEMA	National Environment Management Authority
NGO	Non Governmental Organization
OAC	Operation Area Coordinator
PEO	Provincial Environment Officer
PMP	Pest Management Plan
PRSP	Poverty Reduction Strategy Paper
PRA	Participatory Rural Appraisal
RAP	Resettlement Action Plan
SC	Steering Committee
SRA	Strategy for Revitalizing Agriculture
TOR	Terms of Reference
TN	Total Nitrogen
TP	Total Phosphorus
UNFCC	United Nations Framework Convention on Climate Change
UNEP	United Nations Environment Programme
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
VFF	Village Farmers Forum
WHO	World Health Organization

EXECUTIVE SUMMARY

Kenya Agricultural Productivity and Agri- business Project (KAPAP) will contribute to the revitalization of agriculture by:

- a) Making resources available and strengthen the capacity of agricultural producers and other resource users to: (i) adopt good practices and technologies to mitigate land degradation and achieve greater productivity of crops, trees and livestock; and (ii) adopt sustainable alternative livelihood options to diversify and increase income, and reduce the pressure on the natural resources.
- b) Enhancing the institutional capacity of all relevant stakeholders to promote sustainable land management practices and alternative livelihood strategies based on participatory and demand-driven approaches.
- c) Evaluating the impact of existing policies affecting the management of natural resources and contribute to the removal of barriers hindering the widespread adoption of SLM practices.
- d) Facilitating the exchange of information on best practices in sustainable land management among farmers, communities, extension agents, researchers, development partners, and policy makers.

The project corresponds with the fundamental features of the Government's strategies for development and poverty alleviation as specified in the Kenya Vision 2030 and in the Agricultural Sector Development Strategy (ASDS) which has specifically identified five critical areas requiring public action in the modernization process of the sector. The project was designed to fund agricultural policy processes and activities including small-scale, community-based sub-projects that were identified and planned by the communities, with the support of project-financed extension teams. This study is expected to produce an ESMF for the KAPAP activities.

The purpose of the ESMF is to provide a strategic guide for the integration of environmental and social considerations in the planning and implementation of the activities to be implemented within the framework of Kenya Agricultural Productivity and Agribusiness Project. ESMF has been prepared as a guide for initial screening of the sub-projects for negative impacts which would require attention prior to their implementation.

The objectives of the KAPAP ESMF are: to establish clear procedures and methodologies for environmental and social planning, review, approval and implementation of sub-projects to be financed under the project; prescribe project arrangements for the preparation and implementation of sub-projects in order to adequately address World Bank safeguard issues; assess the potential environmental and social impacts of the sub-projects; to propose mitigation measures which will effectively address identified negative impacts; specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to sub-projects; determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; and establish the project funding required to implement the ESMF requirements

The analysis included: an assessment of the potential environmental and social impacts of KAPAP, taking into account the World Bank's relevant safeguard policies as well as Kenya's environmental policies, laws and regulations; a review of various studies on social, economic and biophysical characteristics of the target districts covered by the project and identification of constraints that needs to be taken into account, ascertaining whether the project area contains any environmentally sensitive areas, cultural heritage and vulnerable groups that need to be taken into account during project preparation and implementation; development of screening procedures (including checklists) that will be used as a mechanism in the ESMF for screening potential environmental and social impacts due to sub-project interventions; development of appropriate methods to promote an Integrated Pest Management (IPM) approach that will minimize the need for chemical pesticides during project interventions; a review of national environmental policies, legislation, regulatory and administrative frameworks in conjunction with the World Bank's safeguard policies, and formulation of recommendations in the context of the project as appropriate; a review of the relevant conventions and protocols to which Kenya is a signatory; an evaluation of the existing environmental and social assessment, and management capacity as well as capacity to implement mitigation measures, and formulation of appropriate recommendations, including the institutional structure and the responsible agencies for implementing the framework, a grievance mechanism and monitoring and evaluation (M&E) of potential impacts; an evaluation of capacity building and training needs and their costs; and presentation of an outline on institutional arrangements for environmental management, including environmental assessment procedures, monitoring indicators and mitigation strategies, as appropriate under the project.

The methodology used for developing KAPAP ESMF included: (1) Identification of eight KAPAP districts for the purpose of sampling on the procedures used to identify interventions, planning and implementation of the project (2) Discussion with staff both at the KAPAP Secretariat (KS) at the Headquarters and at the KAPAP RSUs in eight sample districts (3) Conducting focused group discussions with stakeholders at district headquarters on the methodologies used in identifying, planning, approving and monitoring of the projects. (4) Visiting and discussing with at least one Common Interest Group (CIG) members/farmers (5) perusing relevant KAPAP and other relevant documents.

KAPAP covers a period of five years (2009-2013) and focuses on; improving linkages of agricultural research and extension systems to national, local and regional sector priorities through the implementation of ASDS, NASEP and NARS policies, including improved planning, coordination, funding and implementation; the empowerment of producer and other public and private stakeholders and their organizations to plan, design and deliver extension and agribusiness services, aimed at sector transformation/growth, including production and value-addition and linking farmers to input and output markets; and the setting-up of appropriate funding and risk mitigation systems which would lead to the development of on- and off- farm diversification and promote private investment in the sector.

(1) ¹ Covers Eastern Africa.

Prior to implementation of any project it is within the environmental laws (EMCA 1999) that an environmental and social management Framework is developed and applied with a view to conserving the biophysical and social environmental resources.

This Environmental and Social Management Framework (ESMF) has been prepared to fully comply with environmental legislations and procedures in Kenya and with the World Bank's environmental and social safeguard policies. In this chapter, the key safeguard policies that provide the policy context to the ESMF including World Bank policies and Kenya's legal requirements on environmental assessment have been outlined. As part of the ESMF process, proposed sub-projects under the KAPAP will be designed at the local level to ensure that they are screened for potential impacts and that they comply with the requirements set out under World Bank safeguard policies.

The project beneficiaries include the farmers and communities within the operational areas who participate voluntarily in project activities. The key stakeholders include the farmers, communities, CBOs and NGOs, local government, research and environmental management institutions and the relevant sector ministries (agriculture, water, environment, lands).

The KAPAP calls for an ESMF that will include a screening process to assess the potential impacts associated with sub-projects. This is in accordance with part I Section 6 and Part II Section 7 (1) of the EMCA Act. In addition to the OP 4.01, KAPAP has triggered other safeguard policies. Using the screening and review process for sub-project, identification will, therefore, help determine which of the safeguard policies are triggered and what measures will need to be taken to address the potential impacts. The screening and review process will determine how and when a particular sub-project will trigger a safeguard policy, and what mitigation measures will need to be put in place. The screening and review process will also ensure that sub-projects that may have potentially significant impacts will require more detailed study. This will ensure that all concerns related to NEMA and the Bank's safeguard policies are taken into account during the screening of sub-projects for potential impacts, and that the appropriate mitigation measures can be adopted to address them. If a sub-project is categorized under the second schedule of the Act, it will require a separate EA that will comply with the NEMA's and World Bank's disclosure regulations. The screening criteria provided in the ESMF includes relevant questions which will help determine if any other safeguard policies are triggered and the measures needed to be taken into account to mitigate impacts. The screening and review process will identify any sub-projects that may have potentially significant impacts which require more detailed study and the need for a sub-project specific EA.

The project contributes to the revitalization of agricultural sector in Kenya by: facilitating empowerment of farmers to access and adopting profitable and sustainable technologies; laying the groundwork for a pluralistic agricultural extension and learning system; integrating and prioritizing the national agricultural system; and supporting analytical work to inform policy and institutional reform. In this respect no major environmental issues are anticipated for the project. The project beneficiaries include farmers and

communities who participate voluntarily in project activities. The key stakeholders during the second phase include farmers, communities, CBOs and NGOs, local government, environmental management institutions and the relevant sector ministries and departments (agriculture, water, environment, forest and wildlife, lands and communities).

The project is expected to generate many positive social impacts that could lead to improvements in alleviation of poverty, improved food security through better crop and livestock yields, better extension service, diversified agricultural resource base, and improved household income. The project will also result in a multiplier effect on the local economy through development of entrepreneurial activities such as market outlets.

Better managed land and water resources will result in fewer social conflicts. The project is expected to result in increased availability of good quality water for agriculture and livestock. Productive employment opportunities especially for women and the youth are likely to increase. Support to apiculture embraces potential for significant and culturally appropriate benefits for the indigenous peoples. The project will also result in more affordable health care when medicinal plants are produced, processed and used.

On the whole, the project interventions will focus on implementation of specific activities that improve the long-term sustainability of the ecosystem. No major environmental impacts are anticipated from the project; however, potential environmental impacts at local, national and global levels that may be anticipated include pollution and eutrophication of water bodies, interference with wetland and animal ecology (particularly birds and fish), erosion and sedimentation. With regard to the critical habitats that include swamps, wetlands, forests, shrines and grassland fragments in the districts, none will be adversely affected by the project. The project will not be implemented in any protected area.. The project will focus on efficient technology transfer and conservation strategies hence there will be no degradation or conversion of habitats.

Annual environmental and social progress reports will be prepared with the coordination of the KAPAP secretariat. The annual reports will be shared with KAPAP secretariat, RSUs, KARI, the World Bank and other relevant government agencies. The KAPAP secretariat will regularly brief and sensitize the Inter-Ministerial Coordination Committee (ICC). In order to ensure proper implementation of environmental and social screening, and mitigation measures, as well as effective natural resource management, the KAPAP will undertake an intensive program of environmental training and institutional capacity building.

1.0 INTRODUCTION

Despite steady growth in the immediate post independence period, Kenya's economy has performed considerably below its potential in recent years. For the past two decades productivity has declined, competitiveness eroded and international financial support diminished. Poverty and food insecurity have increased. Average GDP growth declined from about 7% in the 1970s to just over 2% in the 1990s. Underlying factors include persistent and pervasive governance problems, poorly implemented reforms, and low, ill targeted investments in social services, infrastructure and economic services including agricultural sector.

Average annual agricultural GDP growth fell from 3.5 percent during the 1980s to 1.0 percent during the 1990s. External factors such as declining global agricultural commodity prices and vulnerability to climatic shocks explain part, but not the entire decline. Domestic policy shortcomings created distortions in input and output markets. Inadequacies in the legal and regulatory framework raised costs of business. Poor infrastructure increased costs of marketing. High incidence of HIV/AIDS contributed to reduced labour productivity. Dysfunctional public support services slowed the renewal of agricultural technology. The end result has been increased rural poverty and food insecurity, decline in competitiveness, and virtual cessation of both private and public investment in the agricultural sector.

Kenya Agricultural Productivity and Agribusiness Project (KAPAP) will contribute to the revitalization of the agricultural sector through: (i) facilitating empowerment of farmers to access and apply profitable and sustainable technologies; (ii) laying the groundwork for a pluralistic agricultural extension and learning system; (iii) integrating and rationalizing the national agricultural research system; and (iv) supporting analytical work to inform policy and institutional reform.

This project corresponds with the fundamental features of the Government's strategy for poverty alleviation as specified in the Poverty Reduction Strategy Paper (PRSP) of 2003, the Economic Recovery Strategy for Wealth and Employment Creation (ERS, 2003-2007), and the Strategy for Revitalizing Agriculture (SRA 2004-2014). The project was designed to fund agricultural policy processes and activities including small-scale, community-based sub-projects that were identified and planned by the communities, with the support of project-financed extension teams. This study is expected to produce an ESMF for the KAPAP activities.

KAPAP covers a wide range of major issues of strategic significance to the economy and food insecurity including; major food crops, industrial crops, livestock enterprises, potential irrigatable land, intensity of agro-business, marketing systems and outlets. This comprehensive and broad based approach is likely to ensure inclusiveness as all the peoples of Kenya are covered under one component or the other. The strategic targeting of fifty nine Districts covered under KAPAP provide implementers with an opportunity to build on lessons learned required to respond to the challenges of food insecurity and economic development which are key to improving livelihood of both to project

beneficiaries. The demand driven capacity building approach for KAPAP will help to identify and equip communities with appropriate technologies, knowledge and skills hence, improving appreciation and ability to protect environment.

1.1 Objectives

The objectives of the KAPAP ESMF are:

- To establish clear procedures and methodologies for environmental and social planning, review, approval and implementation of sub-projects to be financed under the project;
- To prescribe project arrangements for the preparation and implementation of sub-projects in order to adequately address World Bank safeguard issues;
- To assess the potential environmental and social impacts of the sub-projects;
- To propose mitigation measures which will effectively address identified negative impacts;
- To specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to sub-projects;
- To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; and
- To establish the project funding required to implement the ESMF requirements

1.2 Analysis

The analysis includes:

- An assessment of the potential environmental and social impacts of KAPAP, taking into account the World Bank's relevant safeguard policies as well as Kenya's environmental policies, laws and regulations;
- A review of various studies on social, economic and biophysical characteristics of the target districts covered by the project and identification of constraints that needs to be taken into account.
- Ascertaining whether the project area contains any environmentally sensitive areas, cultural heritage and vulnerable groups that need to be taken into account during sub-project preparation and implementation;
- Development of screening procedures (including checklists) that will be used as a mechanism in the ESMF for screening potential environmental and social impacts due to sub-project interventions;
- Development of appropriate methods to promote an Integrated Pest Management (IPM) approach that will minimize the need for chemical pesticides during project interventions;
- Review of national environmental policies, legislation, regulatory and administrative frameworks in conjunction with the World Bank's safeguard

- policies, and formulation of recommendations in the context of the project as appropriate;
- Review of the relevant conventions and protocols to which Kenya is a signatory;
- Evaluation of the existing environmental and social assessment, and management capacity as well as capacity to implement mitigation measures, and formulation of appropriate recommendations, including the institutional structure and the responsible agencies for implementing the framework, a grievance mechanism and monitoring and evaluation (M&E) of potential impacts;
- Evaluation of capacity building and training needs and their costs; and
- Presentation of an outline on institutional arrangements for environmental management, including environmental assessment procedures and monitoring indicators, as appropriate under the project.

1.3 Principles and Methodology

The study will focus on assessment of the ESMF used because the precise details of the sub-projects in terms of location, materials required, key communities, etc. are already known. The ESMF is required to screen for and manage the potential environmental and social impacts of the KAPAP.

The ESMF Methodology will involve:

- Review of previous reports, published and unpublished works on the environment of the study area;
- Identification of gaps existing in the available information;
- Field investigations;
- Collation of baseline data on the environmental conditions of the project area;
- Identification of positive and negative environmental and social impacts;
- Identification of environmental and social mitigation measures;
- Preparation of screening procedures to be used while screening sub-project proposals; and
- Formulation of environmental and social monitoring plans.

1.4 Methodology

The methodology to be used for developing KAPAP ESMF will include: (1) Identification of eight KAPAP districts for the purpose of sampling on the procedures used to identify interventions, planning and implementation of the project (2) Discussion with KAPAP staff both at the KAPAP Secretariat (KS) at the Headquarters and at the KAPAP RSUs in eight sample districts (3) Conduct focused group discussions with stakeholders at district headquarters on the methodologies used in identifying, planning, approving and monitoring of the projects. (4) Visit and discuss with at least one Common Interest Group (CIG) members/farmers (5) peruse relevant KAPAP document.

1.5 Field work and schedules

The field visit was carried out from 11th to 28th November 2008 and covered the following districts: Makueni (Eastern region), Taita Taveta, Kilifi (Coastal region), Nyeri, Meru (central region) and, Homa-Bay (Nyanza region), Kakamega (Western region) Annex 2.

1.6 Methods and material for field work and schedules

The methodology used for developing KAPAP ESMF included: (1) Identification of eight KAPAP districts for the purpose of sampling on the procedures used to identify interventions, planning and implementation of the project (2) Discussion with KAPAP staff both at the KAPAP Secretariat (KS) at the Headquarters and at the KAPAP RSUs in eight sample districts (3) Conduct focused group discussions with stakeholders at district headquarters on the methodologies used in identifying, planning, approving and monitoring of the projects. (4) Visit and discuss with at least one Common Interest Group (CIG) members/farmers (5) peruse relevant KAPAP document.

2.0 DESCRIPTION OF THE PROJECT

The Kenya Agricultural Productivity and Agribusiness Project (KAPAP) is part of a twelve year programme being implemented in three phases from 2004-2012. The project seeks to contribute to the revitalization of agricultural sector in Kenya by: facilitating empowerment of farmers to access and adopting profitable and sustainable technologies; laying the groundwork for a pluralistic agricultural extension and learning system; integrating and prioritizing the national agricultural research system; and supporting analytical work to inform policy and institutional reform.

KAPAP covers a period of five years (2009-2013) and focuses on; improving linkages of agricultural research and extension systems to national, local and regional² sector priorities through the implementation of ASDS, NASEP and NARS policies, including improved planning, coordination, funding and implementation; the empowerment of producer and other public and private stakeholders and their organizations to plan, design and deliver extension and agribusiness services, aimed at sector transformation/growth, including production and value-addition and linking farmers to input and output markets; and the setting-up of appropriate funding and risk mitigation systems which would lead to the development of on- and off- farm diversification and promote private investment in the sector.

The subsequent phase of the programme will focus on consolidating reforms in research, implementing reforms in extension and building the basis for sustainable financing of the entire system. Prior to implementation of any project, it is within the environmental laws (EMCA 1999) that an environmental and social management Framework is developed and applied with a view to conserving the biophysical and social environmental resources and at the same time improve the livelihoods of the local communities.).The development objective of the proposed Programme is that agricultural producers and other natural

(2) ² Covers Eastern Africa.

resource users increasingly adopt profitable and environmentally-sound land management practices and alternative livelihood strategies in the targeted operational areas.

2.1 Project components

Component 1: Policy/Institutional and Project Implementation Support

This component will support activities that will lead to better coordination of the sector with an aim of creating the necessary impetus for sector-wide approach. These activities will be undertaken both at the national and lower levels. At the national level, the Project will support the development of the ASDS investment plan, its implementation, activities that will facilitate harmonization of both Government and donor supported programs, and activities to align them with ASDS.

Component 2: Agricultural Research Systems

Support will be given to NARS institutions with the objective of operationalizing the NARS policy towards increased productivity and value addition through pluralism, decentralization, efficiency, cost effectiveness and impact. This will enhance the interplay of research, extension, education, agricultural and livestock producers and clients in all aspects of research problem identification, research agenda setting, planning, and research service delivery. Further investment will be made to the Kenya agricultural Research Institute (KARI) in order to continue implementing strategic research programs of Institute, in order to support the implementation of its Investment Plan. The support to KARI under the Project will focus on promoting an agricultural innovation approach, which is a clear shift from previous paradigms which focused more on capacity building and institutional strengthening. The research will address client market needs, and focus more on value addition, and impact, as articulated in the NARS framework. Research on Natural Resource Management (NRM) issues will also be supported with a special focus on climate change.

Component 3: Agricultural Extension, Farmer and Service Providers Empowerment

The overall objective of this component is to support the Government to implement the NASEP, focusing on empowering the extension clientele through sharing of information, imparting knowledge, skills and changing attitudes, so that they can efficiently manage their resources for increased productivity, improved incomes and standard of living. In line with the ASDS, KAPAP will strengthen and scale-up its support to extension on the base of the implementation framework of the NASEP, developed by the agricultural sector line Ministries. This reform agenda forms a conducive environment for strengthened PPPs in the sector to fill the gap created by the reduced presence of public sector extension service providers, but also to cater better for diverse needs of extension clientele. Key NASEP elements target the implementation of a pluralistic, participatory, demand driven and market oriented, professional, and decentralized national extension and innovation system.

Component 4: Agribusiness and Market Development

The objective of this component is, therefore, to empower all public and private stakeholders along commodity chains to plan, design and deliver agribusiness services aimed at value-addition, and linking producers to input and output markets. Building on existing experiences, the Project will promote further coordination within the sub-sector with the relevant ministries, the private sector, and involve development partners to enhance synergies with on-going agribusiness activities.

2.2 Institution and implementation arrangements

Implementation Arrangements

KAPAP is being implemented under the framework of Kenya Government Strategy for Revitalizing Agriculture. The inter-ministerial coordination and Policy guidelines for ASDS and other government initiatives will be used in implementing KAPAP. This will include a broad based inter-ministerial Coordinating Committee (SRA-ICC) consisting of permanent secretaries from the seven ministries of Agriculture, Livestock and Fisheries Development, Cooperative Development, Water, Environment and natural Resources, Lands and Local government. It has also a National Forum (NF) consisting of all stakeholders operating the sector.

- (i) The four sector ministries (Agriculture, Livestock Development, Fisheries Development, and Co-operative Development) KARI and KENFAP, will be the implementing agencies.
- (ii) As envisaged during the original design of the KAPP program, the Ministry of Agriculture (MoA) will have fiduciary responsibility for the Project. This will be exercised through the KAPAP Secretariat (KS), which will be mainstreamed in the government ministries.
- (iii) The Inter-ministerial Coordinating Committee (ICC) will continue to be responsible for, *inter alia*, policy matters and providing guidance to address implementation bottlenecks. However, the composition of the ICC will be expanded to reflect all the key implementation agencies.
- (iv) The KAPP Steering Committee from Phase I will be replaced with a sector-wide Agricultural Sector Programs Steering Committee (ASPSC). The previous Steering Committee will be expanded to enable it to offer technical, financial (approval of annual work plans and budgets) and operational guidance and oversight to KAPAP implementation and other programs in the agricultural sector. The finance and audit sub-committees will be maintained and strengthened.
- (v) KAPAP implementation will be mainstreamed into the GOK system, both at national and the local level. Qualified staff will be seconded from the line ministries for the entire period of the Project. GOK staff seconded to the

KAPP Phase I will be retained based on their performance. The capacity of KS will be strengthened to include an Agribusiness Specialist, Accountants and Auditors³ and other support staff.

- (vi) Due to the sub-division of the original KAPP districts, the Regional Service Units (RSUs) will be maintained and converted into Regional Service Units (RSUs). The RSUs will service the original district mandate. A regional programs steering committee will be formed and supported to coordinate KAPAP and other sector programs at each region. The regional steering committee will also facilitate joint work programming and planning for all the districts covered under each region. The composition of the committee will include heads of departments in government sector ministries, KENFAP, District farmer's representative and other stakeholders. The RSU coordinator will be the secretary and convener of steering committee.

Three project organs are funded to carry out the following activities: (i) the KAPAP Secretariat (KS), to provide overall coordination of the program, while overseeing the Monitoring and Evaluation and Information and Communication functions; (ii) the KAPAP Steering Committee; and (iii) Regional Service Units (RSU) to coordinate and implement Agricultural extension, farmer and service providers' empowerment; and Agribusiness and market development component for the first two years will be implemented in the following 59 districts:

Old district	New districts	Old district	New districts
West Pokot	West Pokot, Central Pokot, North P.	Tana River	Tana River, Tana Delta
Nakuru	Nakuru, Molo, Nakuru North Naivasha, Njoro	Kwale	Kwale, Kinango, Msambweni
Trans Nzoia	Trans Nzoia West, Trans Nzoia East, Kwana	Garissa	Garissa, Fafi, Lagdera
Nyandarua	Nyandarua North, Nyandarua Central, Nyandarua South, Kipipiri	Wajir	Wajir East, Wajir South, Wajir North, Wajir West
Nyeri	Nyeri South, Nyeri North, Nyeri Central, Nyeri East	Meru Central	Meru Central, Imenti North, Buuri Imenti South
Homa Bay	Homa Bay, Ndhiwa	Makueni	Makueni, Mbooni, Kibwezi, Nzani
Gucha	Gucha, Gucha South	Embu	Embu
Siaya	Siaya, Ugenya	Kakamega	Kakamega North, K. Central, Kakamega South, Kakamega East

(1)³ KARI staff working with the KS under Phase I will be seconded to the KAPAP Secretariat to ensure continuity in implementation.

Taita - Taveta	Taita, Taveta	Busia	Busia, Samia, Bunyala
Kilifi	Kilifi, Kaloleni	Butere-Mumias	Butere, Mumias

The 59 districts cover the geographical area covered by the 20 districts where KAPP phase I was being implemented. The increase in number of districts is as a result of sub-division. The District coverage will be reviewed during mid-term evaluation. However, the geographical catchment of the agri-business and market development activities may naturally spill over beyond the focal district boundaries and some of them will have a national coverage.

The project implementation structures include Secretariat (KS), Regional Service Units (RSU), Financing Models (FMs) (who pays the service providers), the service providers, service provider fora, Farmer fora, Common interest groups (CIG) and Community Working Groups (CWGs). The KAPAP secretariat provide overall coordination at national level and a KAPAP Steering Committee with a national multi-stakeholder membership, has been advising and reviewing the project functions, and also facilitating access to technical resources needed to support KAPAP activities. The RSUs will be implementing KAPAP activities at district level.

3.0 ENVIRONMENTAL AND SOCIO REQUIREMENTS

According to the World Bank, KAPAP has an environmental rating of C and a social rating of S3. KAPAP aims to strengthen Kenya’s agricultural research and extension system in ways that contribute to environmentally and socially sustainable growth and resource management. The project has been proactive, and following best practice, a sectoral environmental and social assessment (SESA) will be established for effective response to environmental and social sustainability considerations in a reformed agricultural technology system. Environment issues identified in KAPAP include: (a) loss of natural habitat; (b) use of inappropriate farming practices; (c) agriculture/wildlife conflicts; (d) agro-processing pollution; (e) misuse of pesticides; and (f) proneness to climatic fluctuations (especially drought).

Social issues identified under KAPAP phase one include: (a) resource poor farmers inability to access extension services and inputs; (b) inappropriate technology and thus poor adoption; (c) inadequate access and control of production functions for women; (d) HIV/AIDS impact production systems and livelihoods, and; (e) it was envisaged that KAPAP activities may have a longer term impacts on indigenous peoples indirectly affected by project activities (e.g through change in diet, livestock related activities).

Safeguard screening procedures

This Environmental and Social Management Framework (ESMF) has been prepared to fully comply with environmental legislations and procedures in Kenya and with the World Bank’s environmental and social safeguard policies. In this chapter, the key

safeguard policies that provide the policy context to the ESMF including World Bank policies and Kenya's legal requirements on environmental assessment have been outlined.

3.1 World Bank Safeguard Policies

As part of the ESMF process, proposed sub-Projects under the KAPAP will be designed at the local level to ensure that they are screened for potential impacts and that they comply with the requirements set out under World Bank safeguard policies. The KAPAP is an environmentally oriented project that proposes to promote technologies for the sustainable management of land and related natural resources. No major negative environmental issues are anticipated for the project. The project beneficiaries include the farmers and communities within the operational areas who participate voluntarily in project activities. The key stakeholders include the farmers, communities, CBOs and NGOs, local government, research and environmental management institutions and the relevant sector ministries (agriculture, water, environment, lands).

Since this project seeks to affect land use changes, it has been categorized under the second schedule of the Act (EMCA, 1999) and category C of the world bank. The ESMF has been developed based on the inputs generated during workshops and consultations with all stakeholders and has formulated appropriate processes for screening for environmental and social safeguards in sub-projects. The capacity development component of the project includes relevant training for the different levels of stakeholders to address capacity constraints for environmental and social screening of micro-projects.

The KAPAP calls for an ESMF that will include a screening process to assess the potential impacts associated with sub-projects. This is in accordance with part I Section 6 and Part II Section 7 (1) of the EMCA. In addition to the OP 4.01, KAPAP has triggered other safeguard policies as indicated in Table 1 below. Using the screening and review process for sub-project identification will therefore, help determine which of the safeguard policies are triggered and what measures will need to be taken to address the potential impacts. The screening and review process will determine how and when a particular sub-project will trigger a safeguard policy, and what mitigation measures will need to be put in place. The screening and review process will also ensure that sub-projects that may have potentially significant impacts will require a more detailed study. If a sub-project is categorized under the second schedule of the Act, it will require a separate EA that will comply with the NEMA's and World Bank's disclosure regulations.

Table 1. The World Bank Safeguard Policies

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment (OP/BP/GP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[X]	[]
Pest Management (OP 4.09)	[X]	[]
Cultural Property (OPN 11.03, being revised as OP 4.11)	[]	[X]
Involuntary Resettlement (OP/BP 4.12)	[]	[X]
Indigenous Peoples (OP 4.10)	[X]	[]
Forests (OP/BP 4.36)	[]	[X]
Safety of Dams (OP/BP 4.37)	[]	[]
Projects in Disputed Areas (OP/BP/GP 7.60)	[]	[X]
Projects on International Waterways (OP/BP/GP 7.50)	[]	[X]

3.1.1 Environmental Assessment (OP 4.01)

This OP 4.01 has been triggered because there is potential that the implementation of the KAPAP may lead to some negative environmental impacts. There are no potential large-scale, significant or irreversible environmental impacts associated with the project. Programme interventions will focus on implementation of specific activities that improve the long-term sustainability of the ecosystem. Although some land management activities may require assessment and mitigation, it is anticipated that few of the expected activities will have negative environmental impacts and they will thus undergo the screening and review procedure s. Should the screening and review process identify sub-projects that may have potentially significant impacts, more detailed study will be carried out. Such sub-projects may require specific EIA and this will be determined by the screening and review process.

3.1.2 Natural Habitats (OP 4.04)

There are a number of critical habitats in the program areas. However, none will be adversely affected by the project. The project will not be implemented in any protected area and is not envisaged to target natural habitats ecosystems such as wetlands (swamps, marshes, wells, rice paddies, springs, mangroves and coastal beaches), forests and grassland fragments. Other program activities are also not expected to negatively impact critical habitats directly. The ESMF provides communities and extension teams with the appropriate checklist tools, resource sheets and planning methods to identify any potential impacts of sub-projects on natural habitats, reserves, or protected areas, and to develop appropriate mitigation measures to minimize or avoid damage, or compensate for it. Those activities that are not addressed by the ESMF and may have impacts on natural

habitats will be identified using the screening and review procedures as outlined in Chapter 6.

3.1.3 Pest Management (OP 4.09)

The KAPAP will make resources available and strengthen the capacity of agricultural producers and other resource users to: (i) adopt Soil and Land Management (SLM) practices and technologies to mitigate land degradation and achieve greater productivity of crops, trees and livestock; and (ii) adopt sustainable alternative livelihood options to diversify and increase income, and reduce the pressure on the natural resources. A number of sub-projects such as small-scale irrigation may result in the introduction or expansion of pest management activities in certain areas. The ESMF includes a brief IPM as a decision-making process for the selection, implementation, and evaluation of pest management practices. Those activities that are not addressed by the ESMF and may use pesticides that are likely to have impacts on the environment will be identified using the screening and review procedures as outlined in section 6.3.

However, KAPAP sub projects should adopt integrated pests management strategies (IPM). This will comprise soil pests, weeds, field and post harvest pests and pest diseases management. Use of certified seeds or seed dressing protects them from soil borne pests. Weed control could either be manual or use of appropriate herbicides. There are pre germination and post germination herbicides. However, Extreme care is needed in the use of herbicides in that any wrong or uninformed use is likely to cause total loss of the crops or environmental pollution of water and soil. As a rule farmers should observe strict surveillance of their crop and observe high levels of crop hygiene as a first step to manage the pests and diseases in the field. These include removal and destruction of affected plants and then preventive control of the identified problem. Post harvest pests are managed even before harvesting by cleaning the stores and destroying the residues from previous harvest. Use of recommended pesticides on the harvested crop before storage contributes immensely to the preservation of the harvested crop against attacks by pests.

3.1.4 Indigenous Peoples (OP 4.10)

This policy is triggered since one group is found in the Enoosupukia forest southwest of Maiella in the larger Nakuru district and the Sengwer in the Cherangany Hills, Trans Nzoia District are the marginalised and social discriminated peoples in their respective areas and an Indigenous Peoples Plan (IPP) prepared for KAPSLM will be used (Kai 2006). These indigenous peoples face similar problems whether they are hunter-gatherers or semi-pastoralists.

The main objective of the hunter-gatherers documented in their numerous publications and in the IPP of the KAPSLM is as follows: They want to live in peace with their neighbours, on a piece of land big enough to carry out agriculture and graze some livestock, have access to forests to gather honey for consumption and commercial use, practice their culture, have equal access to social infrastructure and technical services and

be equally represented in all decision making bodies at local, regional and national levels. They don't request special treatment, but equal opportunities. To achieve this, the following key issues have to be addressed:

Equal access to land: In order to have equal opportunities for self-determined development, the Ogiek and Sengwer need land to settle, to farm and to graze their small herds on;

Equal access to security: As a result of their social discrimination, the IPs legal titles are often not respected by their neighbours. The Ogiek and Sengwer need the support of the security forces to protect their properties and lives;

Equal access to traditional sources of livelihood: The Ogiek and Sengwer need more than any other people in Kenya legal access to forests and forest products (honey etc.), as these two are their traditional sources of livelihood; and

Equal access to decision making processes: In order to participate fully in the development process, voice their concerns and needs, and to guarantee that their rights, livelihoods and cultures are not negatively affected, the IPs need to be represented in all relevant decision making bodies (county councils, local consultative meetings).

3.2 Mainstreaming Safeguard Compliance into Sub-project Screening

The screening criteria provided in the ESMF includes relevant questions which will help determine if any other safeguard policies are triggered and the measures needed to be taken into account to mitigate impacts. The screening and review process will identify any sub-projects that may have potentially significant impacts which require more detailed study and the need for a sub-project specific EA. This will ensure that all concerns related to NEMA and the Bank's safeguard policies are taken into account during the screening of sub-projects for potential impacts, and that the appropriate mitigation measures can be adopted to address them.

3.3 Kenya's Environmental Legislation

The Government has embraced for proper environmental management of "land use without destruction of the resource base". For instance, sessional paper No. 10 of 1965 commonly known as "African Socialism and its application to planning in Kenya" the Government stated that;

"While many of our domestic resources are not fully utilized, still others are being dissipated, wasted and in some cases destroyed-----"

As such, the Government continued with its concern for environmental conservation and protection. Thus, in response to United Nations General Assembly Resolution No. 2393 (XXIII) of 1971, the Kenya Government took steps to enjoin itself with the World Community in search for a global approach towards environmental protection and

participated in the first United Nations Conference on Human Environment in Stockholm, Sweden in 1972. This conference saw the birth of the United Nations Environmental Program (UNEP), which was charged with the task of spearheading, encouraging and coordinating sound environmental practices globally in order to; enhance a healthy and qualitative environment for mankind. The Kenya Government proudly hosts this important environmental UN body in Nairobi and wholly supports this program.

Later in 1974 the Government formed the National Environment Secretariat charged with the responsibility of coordination and catalyzing environmental activities in the Country. It is charged with ensuring that environmental considerations are harmonized with land use objectives so that development is proceeded within an orderly manner without destroying, depleting or degrading the natural resources on which much development critically depends and thus ensuring a good quality of life for all Kenyans.

Despite all these endeavors, there are many sector-specific policies in areas such as Water, Land use, Forestry, Agriculture, Mining, Wildlife, Marine resources, Industry, Population, etc. – all which are invariably backed by sectoral laws and regulations administered by different Ministries or departments and other bodies in a rather fragmented and uncoordinated manner and without a holistic approach to environmental protection. Thus given the varied and critical issues related to land use and environment it is opportune to have a formal explicit environmental policy to harmonize these issues.

The Environmental Management and Coordination Act (1999) provides for establishment of an appropriate legal and institutional framework for the management of all environment issues in Kenya (Wamukoya and Situma 2000). The Act enshrines the principles of public participation and provides the necessary mechanisms for implementations of programmes. The Act under section 7 has made provisions of the establishment of the National Environmental Management Authority (NEMA), which has the statutory mandate to supervise and coordinate all environmental activities in Kenya. There is need to enforce this Act at all levels of preparation of Environmental action Plans.

The preparation of this ESMF has taken into account the requirements for environmental assessment under Kenyan law, mainly under Section 58 of the Environmental Management and Co-ordination Act, 1999. The section also requires project proponents to obtain an EA License from NEMA before the implementation of a project. The Act as well as the Environmental (Impact Assessment and Audit) Regulations 2003, Kenya Gazette Supplement No. 56 of 13th June 2003, requires that the project proponent submits a project report to the NEMA to determine whether the project will adversely affect the environment.

3.4 Sub-Project Screening under Kenyan Law

With the above requirements in mind, for those sub-projects which require an EA, as determined under the screening and review process, a copy of the EA report will be submitted to the National Environment Management Authority (NEMA) for approval. NEMA will review and comment on the EA before the sub-project can be appraised.

3.5 International Conventions and Treaties

The objectives of the convention are to conserve biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the utilization of the genetic resources including the access to the genetic resources and by appropriate transfer of the relevant technologies, taking into account all rights over those resources and to technologies and by appropriate funding (Alitsi 2002). Kenya is party to a number of treaties and other such agreements and will, certainly, continue to accept such instruments (Wamukoya and Situma 2000). Some of the environmental treaties to which Kenya is a party include:

3.5.1 African Convention on the Conservation of Nature and Natural Resources:

The African Convention of Nature and Natural Resources emphasizes the need for conservation, utilization and development of natural resources in Africa in accordance with the scientific principles and with due regard to the best interest of the people. It requires parties to establish land use plans based on scientific investigations when implementing agricultural practices and agrarian reforms. The proposed programme is to utilize agricultural scientific knowledge and interventions in the conservation, utilization and development of natural resources.

3.5.2. Convention for the protection management and development of the marine and coastal environment of the eastern African region

The convention is a comprehensive, umbrella agreement for the protection, management and development of the Marine and coastal environment of the Eastern African Region. It lists the sources of pollution, which require control; pollution from ships, dumping, and land based resources and seabed activities. The convention has two additional protocols namely; the protocol concerning protected areas and wild fauna and flora in the Eastern Africa region and the protocol concerning co-operation in combating marine pollution in cases of emergency in the Eastern African region. Under the convention no body can become a contracting party without also becoming a party to at least one protocol. The project is expected to conserve the coastal environment by safeguarding against pollutions from agricultural technologies.

3.5.3 Convention on Biological Diversity (1992)

The Convention on Biological Diversity adopts a broad approach to conservation (Alistsi 2002). It requires Parties to the Convention to adopt national strategies, plans and programs for the conservation of biological diversity, and to integrate the conservation and sustainable use of biological diversity into relevant sectoral and cross-sectoral plans, programs and policies. The proposed programme is expected to conserve biodiversity, especially the rare and endangered species in the project area and its environs.

3.5.4 United Nations Convention to Combat Desertification in those countries experiencing serious drought and /or desertification particularly in Africa (1996).

The United Nations convention to combat desertification (UNCCD) was adopted in 1994 and came into force in December 1996. The objective UNCCD is to combat desertification and mitigate the effects of drought in seriously affected countries, especially those in Africa, Latin America, the Caribbean, Asia, and Northern Mediterranean. It seeks to achieve this objective through integrated approaches to development, supported by international cooperation and partnership arrangements, in the affected areas. It lays emphasis on long-term strategies that focus on improved productivity of land and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level. The proposed programme is designed to implement the requirements of the UNCCD.

3.5.5 United Nations Framework convention on Climate Change (1992)

The United Nations Framework Convention on Climate Change (UNFCCC) was signed in 1992 at UNCED and it seeks to regulate levels of greenhouse gases (GHGs) concentration in the atmosphere, so as to avoid the occurrence of climate change at levels that would harm economic development, or that would impede food production activities. The Convention is founded on the principle that contracting parties should take courses of action, in respect of their economic and social activities, and with regard to the Convention's specific requirements, that will protect the climate system for present and future generations. The proposed programme will assist in the implementation of the specific requirements of the Convention.

3.5.6 Ramsar Convention on Wetlands of International Importance especially as waterfowl habitat (1971)

The Ramsar Convention on Wetlands is primarily concerned with the conservation and management of wetlands and their flora and fauna especially waterfowl by combining far sighted national policies with co-ordinate international action. It was signed at Ramsar, Iran on 2nd February 1971 and amended by the protocol of 3rd December 1982 and the amendments of the 28th May 1987. Parties to the Convention are also required to promote the wise use of wetlands in their territories and to take measures for their conservation by

establishing nature reserves in wetlands, whether they are included in the Ramsar list or not. Kenya ratified the Ramsar Convention in June 1990. The proposed Programme is expected to adhere to the Ramsar Convention's principles of wise use of wetlands in the project area.

3.5.7 Convention on the Conservation of Migratory species

The Convention on Migratory Species (CMS) was adopted to conserve migratory species of wild animals given that migratory species are seen as an international resource. Such species may be terrestrial or marine. The State Members of the Convention endeavor to conclude agreements for the protection and management of migratory species whose conservation status is unfavorable and of those whose conservation status would substantially benefit from international cooperation deriving from an agreement. The Convention's Agreement on the Conservation of African-Eurasian Migratory Water birds is specific on the need to protect the migratory water birds' feeding, breeding and wintering habitats, the main ones being wetlands and open water bodies.

3.5.8 Important Bird Areas

The Eastern Arc Mountains (Taita Hills), Kikuyu Escarpment Forest (Kikuyu/Kinale), Lake Baringo (Tugen Hills), Cherangany Forest (Cherangany) and Lake Victoria (Yala Catchment) have been identified as Important Bird Areas (IBAs) of Kenya (BirdLife International, 2003). The Important Bird Areas Programme is a worldwide initiative working for the conservation of biological diversity and the sustainability of human use of natural resources. The project is expected to recognize these IBAs and to protect them where they occur in the project area or in the environs.

3.5.9 The Nile Treaties

There are about eleven treaties dealing with the consumptive use of the waters of River Nile and Lake Victoria. The riparian countries are under limited obligations under general international law to permit the lower riparian States an equitable share of the water, but then the exact modalities would be subject to fresh negotiations. The Nile Basin Initiative is currently addressing the issue of equitable utilization of the common Nile Basin water resources.

The Nile Basin Initiative seeks to harness the tremendous potential of the Nile for the benefit of the people of the Basin, both for now and for generations to come. This becomes a major challenge because as economic development accelerates, population increases and demand for water grows. NBI's Shared Vision puts economic development at its centre. The Shared Vision is: "To achieve sustainable socio-economic development through the equitable utilization of, and benefits from, the common Nile Basin water resources" or in short "Sustainable development of the River Nile for the benefit of all".

4.0 BASELINE INFORMATION

4.1 Some Biophysical and socio-economic factors of KAPAP districts

The project covers fifty nine districts in the country. The socio-economic diversity and agro-ecological variation of the country were considered as fundamental in choosing the districts. In developing the criteria for the selection of the districts, a number of factors were considered and evaluated based on factual information and available data. Some of the major considerations included environmental management and conservation, resource endowment, food security, prevalence of service providers, agro-ecological potential, and coverage of agricultural development projects e.g. NALEP, ALSMP and ATIRI initiative in the districts. The current coverage of the districts by agricultural projects was considered, and among the chosen districts, 60% had a high number of projects while 40% had relatively fewer. The potential risk of damage to the environment (deforestation, destruction of water catchment areas, soil erosion and unsafe use of pesticides) as a result of the current activities and level of available technologies. Agro-ecological potentiality (High Medium and Low) of the district was also considered with the objective of being representative in the range of districts. Consideration of major issues of strategic significance to the economy and food insecurity (major food crops, industrial crops, livestock enterprises, potential irrigatable land, intensity of agro-business, marketing systems and outlets) and the density of established agricultural service providers (public,private,CBOs and NGOs).

Table 2 shows some selected Socio-economic and biophysical characteristics of some selected KAPAP districts.

Table 2. Selected Socio and biophysical characteristics of some selected KAPAP districts.

Districts	Mean annual rainfall	AEZs	Population below poverty level (%)	Land tenure	Main Issues	Main soil and water conservation measures	Population density per km	Average land size (ha) per household	Main crops grown	Livestock activities
Embu	700-2000	TA ,UH LM and UM	47	Free hold and trust land	Natural resources degradation	Terraces, trash lines, mulching, ridging agro forestry etc	132	2.3	Maize,beans,c offee, tea and vegetables	Improved dairy animals and small stock
Meru Central		UH,LM and UM	61	Freehold and trust land	Lack of effective irrigation technologies to improve productivity	Terraces, trash lines, mulching, ridging agro forestry etc	167			Improved dairy and beef animals and small stock
Makueni	560-900	LM2, LM3, UM4, LM5, LM6, UM5, UM6,	52	Freehold and trust land	Rainwater harvesting and ranching	Terraces, trash lines, mulching, ridging, agro forestry etc	100	2.5	Maize, Pigeon pea, Sorghum Beans, fruit trees and vegetables	
Tana River		CL3,4,5,6		Trust land and communal and freehold	Large potential for irrigated agriculture, especially cotton production.	Terraces, trash lines, mulching, ridging, agro forestry etc	5			
Kilifi		L3,4,5,	72	Freehold , leashold and trust land	Cashew nut industry and ecotourism		114		Sweet potatoes maize, cowpeas, sisal , coconut cashow nut and groundnut cassava	

Garissa		AEZ 5,6		Trust land and communal	Ranching Opportunities with good outlets for animals.	Pastorolism, cambered bends. Ridges etc	9		Maize stoves, dried cassava tubers	
Wajir		AEZ6		Trust land and communal	Appropriate irrigation and drainage in seasonal rivers for ranching.	Pastorolism, cambered bends. Ridges etc	6			Beef animals and small stock
Nyeri	900-1700	TA ,UH LM and UM	51	Freehold , and trust land		Terraces, trash lines, mulching, ridging, agro forestry etc	253	1.8	Maize, beans, coffee, tea and vegetables	Improved dairy and beef animals and small stock
Nyandarua	750-1500	LH2, LH4, LH5, UM4, UM5, LM5, UM6	56	Freehold and trust land	Dairy and infrastructure.	Terraces, trash lines, mulching, ridging, agro forestry etc	145	2.33	Maize ,beans, pyrethrum, wheat, barley, potatoes, cabbages,	Improved dairy and beef animals and small stock
Nakuru	900-1200	LH2, LH4, LH5, UM4, UM5, LM5, UM6	39	Freehold, trust land and leasehold	Small cereals production.	Terraces, trash lines, mulching, ridging, agro forestry etc	164	4.63	Maize, wheat, barley, beans, cabbages,	Improved dairy and local cattle and small stock
West Pokot	900-1300	UH1-2, LH3, UM4 -5, UH2, LH4, LM5-6, LM	53	Communal and trust land and freehold	Large potential for ranching and beef production.	Terraces, trash lines, mulching, ridging, agro forestry and rotational grazing	34	34	Maize, beans, sorghum, millet.	Improved dairy and local cattle and small stock
Trans-nzoia	970- 1300	LH3, LH4, LM4, UM1	48	Freehold and trust land	Small and large grains, and seed production.	Terraces, trash lines, mulching, ridging, agro forestry etc	231	3.36	Maize, beans, wheat, barley, beans and cabbages	Improved dairy and local cattle and small stock

Siaya	864-1800	LM1,2,3,4,5	64	Freehold and trust land	Irrigation and drainage development	Terraces, trash lines, mulching, ridging, agro forestry etc	316	2.14	Maize, beans, ground nuts, sunflower, onions, coffee, cassava, sugar cane and bananas	Improved dairy and local cattle and small stock
Gucha	1600-2000	UM1, UM2, LH2	61	Freehold and trust land and leasehold	Good environment and potential to increase millet, maize, and dairy productivity.	Terraces, trash lines, mulching, ridging, agro forestry etc	698	1.3	Maize, beans, cabbages, tomatoes, pineapples, sorghum, bananas etc	Improved dairy and local breeds of cattle and small stock
Homabay	813-1400	UM1, 3, LM1, LM2, LM3, LM4,	71	Freehold and trust land and leasehold	Sodic soils and water hyacinth	Terraces, trash lines, mulching, ridging, agro forestry etc	249	3.38	Maize, barley, beans, cabbages	Improved dairy and local breeds of cattle and small stock
Kakamega	1100-2100	UM1-2, UM4, LM1 and LM2	63	Freehold, trust land and leasehold	Soil fertility management and drainage.	Terraces, trash lines, mulching, ridging, agro forestry etc	433	2	Maize, beans, wheat, barley, sugar cane, beans and cabbages	Improved dairy and beef cattle and small stock
Butere-Mumias		LH3, LH4, LM4, UM1	61	Freehold, trust land and leasehold		Terraces, trash lines, mulching, ridging, agro forestry etc	508		Maize, beans, barley and sugar cane	Improved dairy and local breeds of cattle and small stock
Busia	925-1766	UM1, UM2, LH2	67	Freehold, trust land and leasehold	Low soil fertility and water logging.	Terraces, trash lines, mulching, ridging, agro forestry etc	330	2.7	Sugar cane, sunflower, cotton, Cassava, maize, beans, sorghum, sweet potatoes and ground nut	Livestock local Livestock breeds and cross breeds.

Taita Taveta	500-1200	LH2, UM3, UM4, LM4, LM6, L6	58%	Freehold, trust land and leasehold	Wildlife/agriculture conflict, eco-tourism and cross border trade.	Terraces, trash lines, mulching, ridging, agro forestry etc	82	2	Maize, beans, onions, coffee, tea and vegetables	Dairy, Beef animals and small stock
Kwale				Freehold, trust land and leasehold	Eco-tourism markets a target for well developed agriculture.	Terraces, trash lines, mulching, ridging, agro forestry etc				

Sources: Nandwa et al 2000, De Jager et al 2005. Jaetzold and Schmidt, 1983 a&b, CBS, 2001, FURP, 1987, Gachimbi et al, 2005

5.0 GUIDANCE ON POTENTIAL IMPACTS

5.1 Overall Environmental and Social Impacts and Indicators in Agriculture

The project contributes to the revitalization of the agricultural sector in Kenya by: facilitating empowerment of farmers to access and adopting profitable and sustainable technologies; laying the groundwork for a pluralistic agricultural extension and learning system; integrating and prioritizing the national agricultural system; and supporting analytical work to inform policy and institutional reform. In this respect, no major environmental issues are anticipated for the project. The project beneficiaries include farmers and communities who are mobilized and participate voluntarily in project activities. The key stakeholders include farmers, communities, CBOs and NGOs, local government, environmental management institutions and the relevant sector ministries and departments (agriculture, water, environment, forest and wildlife, lands and communities).

KAPAP will involve direct interventions in the biophysical and human environments. The potential environmental impacts can be categorized as biophysical, and social. These impacts can occur at various stages of project development and can be positive or negative, temporary or permanent, and cumulative. On balance, the potential positive impacts of the project outweigh the negative impacts. Therefore, the KAPAP has the potential to make a significant contribution to Kenya's policies to protect and preserve the environment while reducing poverty in rural areas.

In the absence of adequate capacity for environmental and social screening, potential environmental impacts at local, national and global levels may include pollution and eutrophication of water bodies, interference with wetland and animal ecology (particularly birds and fish), erosion and sedimentation. Alternative livelihoods (eg ecotourism or herbal medicine) and intensification of agricultural production (including emerging livestock) which may result in community well-being, may also lead to an increase in areas brought under cultivation and overall numbers of livestock units which may increase demand on natural resources or degrade the surrounding environment. The stakeholders will be provided with an opportunity to build their capacity in environmental and social screening by learning how to avoid or mitigate localized impacts from sub-projects.

Table 3. Environmental issues, impacts and indicators in agriculture

Environmental Issues	Impact	Mitigation strategies	Indicator
<ul style="list-style-type: none"> • Loss of habitat, through: • Conversion of land to agriculture • Overstocking/overgrazing • Illegal forest/road reserve and river encroachment 	<ul style="list-style-type: none"> • Loss of vegetative cover • Loss of biodiversity • Impaired catchments function • Increased soil erosion and sedimentation • Increased pressure for fuel wood from remaining forest areas 	<ul style="list-style-type: none"> • Agroforestry • Zero grazing • Alternative agriculture e.g. fish farming, aloe Vera farming etc. • Conservation agriculture • Terracing and maintenance of the same. <p>Land and water conservation</p>	<ul style="list-style-type: none"> • % tree cover • Presence/population density of key species • Erosion/sedimentation rates, water quality, quantity and flow rates • Encroachment, density of rural roads • Energy/ Fuel-wood consumption per household
<ul style="list-style-type: none"> • Use of inappropriate farming practices and technologies: • Cultivation on steep slopes • Overuse of pesticides/biocides/ other agrochemicals • Overstocking of marginal lands • Cultivation of crops unsuited to an agro-ecological zone (particularly in marginal districts) • Monoculture (sugar cane, maize and tea) • Encroachment into forest areas, protected areas, etc 	<ul style="list-style-type: none"> • Loss of vegetative cover • Loss of agro -biodiversity • Impaired catchment function • Inadequate water for crops • Water logging/flooding/land slides • Increased soil erosion and sedimentation • Declining soil productivity (soil and nutrient loss) • Salinity, soil sealing/hard pans • Pollution of surface and groundwater • Soil contamination • Risks to human health. • Contamination of water sources by livestock 	<ul style="list-style-type: none"> • Terracing • Land and water conservation • Law enforcement • Crop diversification and intensification • Zero grazing • Alternative agriculture- fish farming, aloe farming • Water catchment protection • Appropriate livestock breeds and locally adapted crops 	<ul style="list-style-type: none"> • % tree cover • Presence/population density of key species • Erosion/sedimentation rates, water quality and flow rates • Water availability • Rates of erosion and sedimentation • Soil fertility-soil nutrient deficiency • Water quality • Public health indicators • Erosion/sedimentation rates, water quality
<ul style="list-style-type: none"> • Development of agro-processing: • Large-scale agro-industry • Small-scale value-added operations at household/farm/community level • Middle level processing operations 	<ul style="list-style-type: none"> • Pollution of air, soil and water resources • Health of the neighboring population • Worker health and safety • Increased energy requirement, potentially for fuel wood at small scale • Depletion of water resources by water-intensive industries • Land use changes, and increased monoculture, to meet raw material needs of agro-industries 	<ul style="list-style-type: none"> • Value addition of mangoes and other crops or dairy products 	<ul style="list-style-type: none"> • Environmental quality indicators for air, soil and water • Public health indicators • Industrial health & safety indicators • Energy consumption (including fuel wood) • Water availability for beneficial uses • Land use classification, % land area under different crops

Environmental Issues	Impact	Mitigation strategies	Indicator
<ul style="list-style-type: none"> • Agriculture – wildlife conflicts: • Conflict for food/water/other resources between livestock, wildlife and humans • Crop-raiding/stealing 	<ul style="list-style-type: none"> • Reduction in populations of key wildlife species • Risk of death or injury to farmers/pastoralists 	<ul style="list-style-type: none"> • Negotiation support, conflict resolutions, set penalties, fast compensation and benefit sharing with the neighboring communities. • Eco-tourism opportunities • Fodder conservation for livestock 	<ul style="list-style-type: none"> • Presence/population density of key species • Crop-raiding incidents, human injuries and fatalities
<ul style="list-style-type: none"> • Crop-specific impacts: • Nutrient mining • Reduced genetic material • Application of fungicides and pesticides/excess fertilizer 	<ul style="list-style-type: none"> • Reduced agro-biodiversity value • Reduced ecological function (e.g. catchment function) • Pollution from agrochemicals (e.g. pesticides on cotton) 	<ul style="list-style-type: none"> • Use of recommended organic and inorganic fertilizers for soil fertility improvement • Biodiversity conservation and selection • Pollution control through flashing with excess water 	<ul style="list-style-type: none"> • % tree cover, presence/population density of key species • Erosion/sedimentation rates, water quality and availability • Soil fertility, water quality, human health indicators
<ul style="list-style-type: none"> • Proneness to climatic fluctuation (especially drought): • Crop failure • Overgrazing • Flooding • Land slides 	<ul style="list-style-type: none"> • Loss of vegetative cover • Impaired catchment function • Increased soil erosion and sedimentation • Water stress • Increased pressure on forest areas for fuel wood 	<ul style="list-style-type: none"> • Soil and water conservation techniques • Water harvesting for crop production-ridging, pitting, conservation agriculture • Check dams, planting deep rooted trees. • Agro forestry practices • Crop diversification i.e. fruit trees , alternative agriculture- fish farming, ecotourism, herbal medicine • Law enforcement 	<ul style="list-style-type: none"> • % tree cover • Erosion/sedimentation rates, water quality and flow rates • Erosion/sedimentation rates • Water availability, seasonal variations • Fuel wood consumption

Note: 1. See list of acronyms prefacing in the report

Table 4. Social issues their impacts and indicators in Kenyan agriculture

Socio issue	Impact	Mitigation strategies	Indicator
<ul style="list-style-type: none"> • Resource poor farmers not able to access extension services and agricultural inputs : • Cost of extension service too high • Lack of credit and micro- enterprise services • Lack of farm inputs • Lack of sufficient service providers • Distance to service provider 	<ul style="list-style-type: none"> • Food insecurity at household level • Poverty 	<ul style="list-style-type: none"> • Use of contract service providers • Subsidy on farm inputs by the government • Use radios, TV and internet services and mobile SMS in passing messages • Group demonstration of technologies, use participatory methods of technology transfer 	<ul style="list-style-type: none"> • The number of small scale farmers adopting agriculture technology through extension services providers
<ul style="list-style-type: none"> • Developed agricultural research technologies are not monitored for adoption, impacts on people's livelihoods and environmental management. 	<ul style="list-style-type: none"> • Research fails to transform livelihood of the poor • Poor adaptation and utilization of agriculture technology • Inability to scale-up best practices 	<ul style="list-style-type: none"> • Use of contract service providers • Subsidy on farm inputs by the government • Use radios, TV and internet services and mobile SMS in passing messages • Group demonstration of technologies, use participatory methods of technology transfer 	<ul style="list-style-type: none"> • Number of agriculture technology initiatives that are farmer demand driven • Adequate community representation in all consultative foray
<ul style="list-style-type: none"> • Women have inadequate access to and control of production resources even though they play a critical role in agriculture. • No ownership of land • No control of production or access to markets • No voice in decision-making regarding agricultural technologies and policies at farm level • Lack of access to credit facilities • Cultural gender biases 	<ul style="list-style-type: none"> • Poor adoption of agriculture technology • Increased household food insecurity. • Lack of control to productive resources and reduced productivity 	<ul style="list-style-type: none"> • Change land use policy • Gender mainstreaming through training 	<ul style="list-style-type: none"> • % Of women participating in decision making and consultative fora (50% women representation) • % Of women accessing extension services and controlling benefits accrued from agriculture

Socio issue	Impact	Mitigation strategies	Indicator
<ul style="list-style-type: none"> • AIDS/drugs continue to present a major challenge to the agriculture sector. An estimate of 72 % of the 2.5 million Kenyan adults infected with HIV live in areas where agriculture is the key source of livelihood. 	<ul style="list-style-type: none"> • Decrease in household crop production • Challenge to meet demand for high nutrition required by people living with AIDS and orphan children • Increase incidences of malnutrition, morbidity and child mortality. • Shortage of labor leading to high cost of food production • Increased incidences of child abuse and child labor as orphans and vulnerable children step in to supplement family income. 	<ul style="list-style-type: none"> • Awareness creation • Contract labour • Diversify feeding habits to shift from traditional feeding to liberal feeding. • Capacity building • Health nutrition 	<ul style="list-style-type: none"> • Number of projects that integrate HIV/AIDS with extension services • HIV/AIDS responses in new agriculture policy
<p>Indigenous people (e.g. Ogieks, Njemps) marginalized and without effective land security and access to appropriate agricultural extension services</p>	<ul style="list-style-type: none"> • Poverty • Livelihood insecurity 	<ul style="list-style-type: none"> • Change land use policy • Gender mainstreaming through training • 	<ul style="list-style-type: none"> • Number of projects that target benefits for indigenous peoples

5.2 KAPAP Potential Positive Impacts

The KAPAP projects are expected to generate many positive social impacts that could lead to improvements in alleviation of poverty, improved food security through better crop yields, better extension service, diversified agricultural resource base, and improved household income. The project will also result in a multiplier effect on the local economy through development of entrepreneurial activities such as access to market outlets. Better managed land and water resources will result in fewer social conflicts. The project is expected to result in increased availability of water for agriculture and livestock and aquaculture. Productive employment opportunities especially for women and the youth are likely to increase. Support to apiculture embraces potential for significant and culturally appropriate benefits for the indigenous peoples. The project will also result in more affordable health care when medicinal plants are used. The effective management and reversal of degradation of natural habitats through soil and water conservation

techniques will lead to conservation of natural habitats and biodiversity. This will result in increased quantities and diversity of goods and services provided by the ecosystems.

At the national, provincial, district levels and community levels, the project will promote rural development strategies that integrate ecosystem concerns. The project will contribute to the decentralization process through community management of natural resources and integrated ecosystem management decision-making processes. At the global level, the project will contribute to the reduction of soil degradation, improvement of crop production and sequestration of above and below ground carbon, and reduced siltation, and nutrient runoff to rivers systems draining into aquatic ecosystems. International waters of Lakes Victoria, Jipe, Chala and their influent tributaries will be protected from sedimentation through restoration of river bank vegetation. The project will also contribute to the commitments made under several global conventions and treaties, in particular, Convention on Biological Diversity, Convention on Wetlands, UN Framework on Climate Change, and Convention to Combat Desertification.

Pressure on natural habitats (remnant forests, riparian areas, wetlands, etc.) will be decreased through improved on-farm and off-farm biodiversity. All in all, KAPAP has the potential to make a significant contribution to Kenya's policies to protect and conserve the environment while reducing poverty in rural areas.

5.3 KAPAP Sub projects Potential negative impacts

On the whole, the project interventions will focus on implementation of specific activities that improve the long-term sustainability of the ecosystem. No major environmental impacts are anticipated from the project; however, potential environmental impacts at local, national and global levels that may be anticipated include pollution and eutrophication of water bodies, interference with wetland and animal ecology (particularly birds and fish), erosion and sedimentation.

With regard to the critical habitats that include swamps, wetlands, forests, shrines and grassland fragments in the district catchment areas, none will be adversely affected by the project. The project will not be implemented in any protected area. The project will focus on efficient technology transfer and conservation strategies hence there will be no degradation or conversion of habitats.

The potential negative impacts at local, national and global levels that may be anticipated include:

- ❑ Localized pollution and eutrophication of water bodies, and interference with wetland and animal ecology particularly birds and fish.
- ❑ Alternative livelihoods eg, aquaculture, ecotourism, Aloe vera farming and intensification of agricultural production including livestock may lead to an increase in areas brought under cultivation and overall numbers of livestock units which may increase demand on natural resources or degrade the surrounding environment.
- ❑ Soil erosion may occur after removing vegetation cover for land clearing, exposing the soil to water and wind erosion.

- ❑ Localized agro-chemical pollution and reduction of water quality from agro-chemical use are likely to occur. Handling of pesticides and disposal of empty chemical containers requires serious attention.
- ❑ Human-wildlife conflicts are likely to increase.
- ❑ Increased production may promote internal migration leading to more pressure on land.
- ❑ As the indigenous peoples (IP) are marginalized there is a high risk, that the project does not work with them, that they do not benefit from the project and even lose their access to resource.
- ❑ Indigenous People's rights to land and resources may not be recognized and the IPs not represented in decision making bodies, thereby, displacing them physically and economically, and increasing their social discrimination and marginalization
- ❑ As indigenous peoples are not normally involved in the decision making process is it likely that their rights, livelihoods and needs are not included in the capacity building exercise.
- ❑ Many people may not readily adopt the use of medicinal and aromatic plants for health care.
- ❑ The local people particularly the vulnerable (women, disabled) and the marginalized may not have the capacity to participate in the project.
- ❑ Differential impacts of the KAPAP capacity building efforts and investments (according to gender, wealth status, or livelihood strategy) may result in some groups relying to a greater extent than others on unsustainable use of natural resources.

Table 5 below sets out the factors contributing to these risks and the features of the project design that will mitigate the risks.

Table 5. KAPAPs risks requiring mitigation

<i>Risk</i>	<i>Explanation</i>	<i>KAPAP approach</i>
Rural livelihoods and environments are often complex, unpredictable and fragile (e.g. rural communities are highly subdivided along clan and ethnic lines), and achieving effective participation may not be easy.	Rural livelihoods are diverse and complex in nature hence it is people living in a particular local area who understand the local environment, interactions within their society, and their economy more than outside intervening parties.	KAPAP is based on a full-participatory demand-driven approach containing direct funding for community initiated sub-projects and providing for mobilization of local resources through income generation activities.

<i>Risk</i>	<i>Explanation</i>	<i>KAPAP approach</i>
Lack of adequate capacity for environmental and social screening of small-scale activities may exacerbate existing environmental and social issues affecting communities within the target areas.	Kenya lacks adequate qualified staff and mechanisms for the screening and mitigation of impacts induced from sub-project activities. This is especially important since sub-projects will be community driven where such expertise may be lacking. This may exacerbate current environmental stress.	The project includes a component for training and capacity building for community groups and associations to prioritize their needs and manage the environmental and social aspects of the sub-projects; local government officials and other service providers to assist communities in preparation of sub-project proposals, and to appraise, approve and supervise implementation of sub-projects.
Differential impacts of the KAPAP training and investments (according to gender, wealth status, or livelihood strategy) may result in some interest groups capturing benefits.	Some sub-categories of the population which stands to gain like the elite groups may capture some of the intended village investments, whereas more disadvantaged groups may be forced to rely on an unsustainable use of their natural resource base.	Special attention will need to be paid to poverty targeting approaches within villages to ensure that investments in support activities and sub-projects are identified and implemented so as not to lead to unsustainable use or impacts on natural resources.
Alternative livelihoods like fish farming, bee keeping, intensification of agricultural production may result in improved well-being and may also lead to an increase in areas brought under cultivation and overall numbers of livestock.	Improved access to markets may increase incentives to increase areas under production or increase animal numbers.	Although alternative livelihood?? strategies will seek to strengthen and add value to existing systems, the project need to call for an integrated systems to ensure counter measures to secure the natural resources base .
Rapid institutional and governance change in the formal national, provincial and community systems for governing natural resource areas may create competing or ineffective institutions within government.	Recent changes or trends in Kenya include the move towards decentralization with the accompanying risk of ineffective restructuring, training and empowerment to ensure a successful transition.	KAPAP support for institutional change will be monitored carefully, in full view of political sensitivities between the different systems, and be carried out with regular consultations with the affected parties.

<i>Risk</i>	<i>Explanation</i>	<i>KAPAP approach</i>
There are a significant number of NGOs and development agency-financed projects in the catchment operational areas with considerable rural development experience, which may be undermined by the financial weight of the KAPAP if they are not effectively included in the process.	The financial size and scope of the KAPAP is significant in comparison to the smaller scale NGO and bilaterally-funded development projects in rural areas. This may have implications for the relation between government administrations and NGOs, between existing projects, and communities, and among staff of government and NGOs.	KAPAP will work to build capacity within national, provincial, and community administrations, and continue the collaborative approach; and consider making use of NGOs and stockists as service providers, in addition to private sector contractors where appropriate.
Rising population pressures, deteriorating resource base and intensification of the traditional production systems have led to an increase in the number of land-related conflicts, and introduction of investments in such areas may attract outside migrants that will increase pressure on existing resources.	KAPAP investments may serve to bring back those who had migrated out in search of income earning alternatives into the recipient communities and they will also seek to benefit from the improvements. This could lead to friction or conflict and put additional pressure on limited resources.	KAPAP will continue to work carefully with communities to devise measures to support sustainable investments and ensure the inclusion of migrants into their communities.

5.4 Environmental Issues in National Agricultural Research

Most of environment issues in agricultural research vary across centers due to the different commodity research being undertaken. This means that each station has its needs, activities, products and unique services specific to the needs of the clientel it serves. For example plant pathology under the crop protection section needs “Disaster Preparedness” in case of fire as requiring urgent attention. Since the sections have laboratories using flammable chemicals and thus the need for adequate management measures to be put in place. The soil chemistry laboratories, Entomology and IDRP sections needs similar management.

In the weed science and soil chemistry lab (CP) disposal of used and obsolete lab chemicals is a priority since they do not have a proper disposal method for already used herbicides. The soil chemistry lab stores expired chemicals on their shelves since they lack safely disposal procedures for them. A lot of papers and files in the centers contribute to a lot of pollution when disposing off the same. Various programmes in the research centres have either a direct or indirect impact on the environment. There 6 environmental issues which need to be observed:

- Environmental awareness: this refers to the extent to which the research institutions staff members have knowledge about environmental management and its importance as well as familiarity in general information on environmental issues.
- Cost saving opportunities: Has to do with what activities have been put in place to ensure cost reduction in the respective areas. e.g. lighting, recycling paper and water use /re-use
- Disposal of used lab or obsolete laboratory chemical: This refers to ensuring that the status and mechanisms for disposing of such chemicals are in line with NEMA as stipulated in the law. (EMCA2000).
- Disaster preparedness-Refers to the ability of the centre to adequately control and manage any emergencies that would occur in the course of running the institution.
- Environmental aesthetics: Involves the continuous maintenance of the centre compound especially the landscaping, cleanliness, ornamentals and maintenance of buildings.
- Waste Disposal: Is the method used by the institution to dispose of various wastes which includes; solid materials, fuel, obsolete chemicals and management of sewerage wastes from residential and office buildings.

5.4.1 Environmental Awareness

General information on environmental management systems: In many sections of Research Institutions, there is poor and inadequate awareness and information dissemination on issues related to the environment. As a result, there is poor environmental management thus a need for developing an environmental management system. Creation of an environmental awareness programme thus is required to ensure all staff members are well enlightened on what environmental conservation entails. It should also be noted that this is very important as it contributes to KARI for instance as a whole by adhering to EMCA, 2000 requirements which will ultimately be verified by an EIA&A undertaken in the future. Failure to undertake or adhere to the EIA&A may lead to prosecution and stoppage of ongoing projects by NEMA.

5.4.2 Occupational Safety

First aid kits: Some working areas like laboratories should have first aid kits to be used in case of injuries of the workers. In some sections like Entomology section has first aid kits but they should be regularly checked to ensure that all the necessary items are there.

Laboratory gas fume chambers: These should be regularly serviced to ensure that they function efficiently. In sections where this equipment is used like the labs the fume chambers need to service regularly and as it may endanger the health of staff working in the labs.

5.4.3 Waste Disposal

All disposal methods should adhere to the Environmental Management and Co-ordination (waste management) regulation act of 2006.

Solid materials: Large quantities of solid materials like laboratory glass wares, metal and plastic chemical containers should not be dumped in the open pit as this produces toxic fumes when burned or when it reacts with other compounds in the environment unlike other wastes for example paper. Sorting of wastes should be encouraged as this enables the recyclable wastes to be identified and re-used and the non-recyclable wastes be disposed of safely.

Liquid materials: A research centre can also subscribe to NEMA and the municipal council licensed to dispose of all the hazardous chemical waste from all the sections that produce them. From the cafeteria all the domestic liquid waste facilities should be connected to the electromechanical system. As along term project the centre can install an effluent treatment plant to treat waste water to acceptable environmental standards before discharge to the environment.

Gaseous emissions: It's common practice to burn waste materials which are collected while cleaning the centre. This activity increases carbon dioxide in the atmosphere which negatively affects the climate. The incinerator should be used to burn any substance with hazardous chemicals especially from the lab. Therefore all waste from the lab should be sorted out before disposal.

5.4.4 Disaster Preparedness

It's important for the centers to identify possible sources of disasters and put in place measures to mitigate these potential sources. These were identified and they include:

Fires: Fire outbreaks could occur in any part of an institute's infrastructure. In a research centre, some areas are high risk as they are more fire prone compared to others and these are for example the laboratories using the flammable chemicals as opposed to the administration section. In most of the sections participants noted that there's limited awareness as to the usage of several of fire fighting extinguishers. Different types of fires require different fire extinguishers and staff should be properly trained on how and when to use the available equipment. There's also need to conduct regular fire drills maybe once a year to enhance awareness and response in the event of a disaster. The centers should upgrade the fire fighting equipment at all the sections especially sensitive areas like the laboratory. Maintenance of these should also be improved.

5.4.5 Used and Obsolete micro project waste or laboratory Chemicals

The by-products from the laboratories or even from the district sub projects can be disposed in a way that causes no or less harm to the environment. Decontamination of laboratories can be used to reduce toxicity of these substances. To reduce the water pollution levels of water discharged from the laboratories, the following can be done before water is discharged into the drainage system:

- Sedimentation of the effluence to remove the suspended solids.
- Chemical treatment of effluence to precipitate heavy metals.
- Physical treatment of the chemical solutions by filtration to remove the solids.

6.0 REPORTING AND RESPONSIBILITIES FOR THE ESMF

This chapter sets out the reporting systems and responsibilities of the officers in implementing the ESMF. The chapter commences with details of the issues that will be addressed by the ESMF, and the specific steps to be taken to ensure adherence to the ESMF. It then describes the various elements of the ESMF including:

- flowchart for reporting and advice;
- screening checklist for sub-projects;
- annual environmental and social progress report format; and
- description of roles.

6.1 Key Environmental Issues and Proposed Actions for Implementation of ESMF

Box 1 and Table 6 outline the proposed actions and measures to address them. These are:

Box 1. Actions for Implementation of ESMF

- **Service providers (SPs, CBOs, NGOs extension workers), will work with communities to identify and fill out sub-project applications/proposals by conducting environmental and social analysis. This will be done by using the screening checklist in the ESMF, the table on potential environmental and social impacts and mitigation measures, as well as the resources sheets.**
- The application for the sub-projects will clearly state the environmental and social mitigation measures. If a sub-project requires a separate EMP for specific mitigation measures, then the sub-project application will also have an EMP along with it.
- All these are sent to the review and vetting committee under the KAPAP-RSU at the local level, which will have environmental and social expertise (e.g. DEOs, OACs.).
- Once review is complete, the reviewers will sign off and forward to the approval committee –KAPAP Secretariat.
- At the national level, the KAPAP Secretariat will provide lead coordination and ensure that the results meet the targets set by the project.
- Day-to-day coordination of project activities will be handled by the RSU and the KAPAP-Secretariat

- The RSU will link up with provincial and district development and environment committees and officers (PDO, DDO, PEO, DEO, and DSDO) in order to implement broader program activities.
- An end phase environmental and social progress report will be prepared under KS coordination. This audit report will be shared with, KAPAP Secretariat, KARI, the World Bank and other relevant government agencies. The KAPAP Secretariat will regularly brief the KAPAP Steering Committee who will in turn sensitize the Inter-Ministerial Coordination Committee (ICC).
- Consultancy inputs will assist in the training of key staff and the transfer of essential technical expertise in such areas as Integrated Pest Management, best management practices and best management technologies.

Table 6. Issues Addressed by ESMF

Issue	Mainstreaming of Mitigation Measures	Responsibility for Action
1. Requirements for mainstreaming of the ESMF	a. Appoint RSUs b. Annual environmental and social progress report.	a. KAPAP Secretariat b. Independent consultant
2. Weak capacity for environmental and social management at district levels	a. Develop partnerships with NGOs and SPs for environmental and social management; b. Stimulate the operation of VFF and DFF.	a. KAPAP Secretariat and RSU b. RSU c. Contract service providers
3. Opportunity to contribute to positive impact on natural resource management	a. Assign sufficient budget for support to program activities	a. KAPAP Secretariat
4. Mainstreaming WB safeguard policies in the operational areas	a. Provide sufficient training and support to OACs to understand and apply WB safeguard policies	a. KAPAP Secretariat
5. Requirements for land tenure strengthening, and promoting decentralized governance	a. Engage community leaders and community associations, farmer fora and stimulate thinking towards appropriate models for relation of communities with government	a. KAPAP Secretariat
6. Cumulative impacts on some environmental resources	a. Carry out assessments of cumulative impacts on groundwater, surface water resources, pastoral resources and biodiversity. b. Sensitize communities on the issues of cumulative impacts.	a. SPs
7. Optimum integration of technical advice with a demand-driven, participatory approach	a. Sensitize communities to the range of technical advice available, and their responsibility to choose which technical advice they require.	a. RSUs b. Extension Agents c. SPs

8. Need to provide advice on relevant environmental laws to communities	a. Provide information on relevant environmental laws to communities	a. KAPAP Secretariat and RSU
9. Opportunities for positive environmental sub-projects	a. Develop potential list of positive environmental sub-projects and raise awareness of communities on the sub-projects.	a. KAPAP Secretariat and RSU b. Extension Agents c. Communities

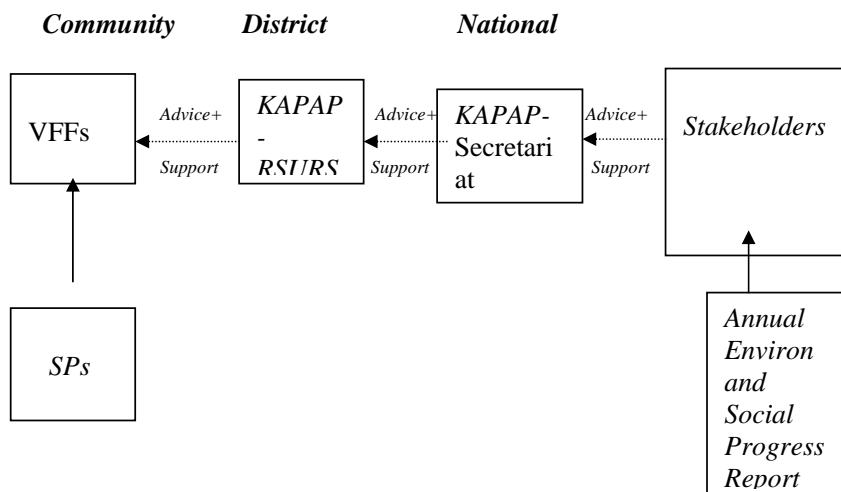
6.2 Flowchart for Reporting and Advice

The proposed reporting lines and advisory and support mechanisms that will be used in the ESMF are depicted in Figure 1, while Box 2 provides the summary.

Box 2. Proposed Reporting Lines and Support Mechanisms

- OACs and Contract Service Providers (SPs) will work with communities to provide guidance and advice on potential environmental and social sub-projects, potential negative environmental impacts and appropriate mitigation measures;
- In turn RSU and SPs will receive technical advice and support from KAPAP-SC.
- An independent team will prepare an annual environmental and social progress report and advice to both KAPAP and RSU. This audit report will be shared with stakeholders' e. g KAPAP-Secretariat, NEMA, KARI, WB and other relevant government agencies.

Figure 1: Flowchart of Reporting and Advice



6.3 Screening for Sub-projects

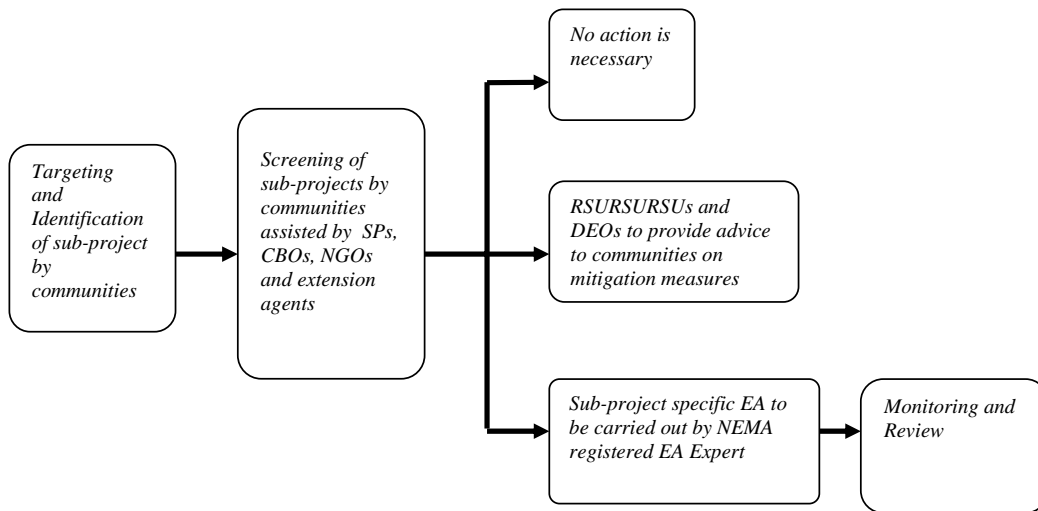
This ESMF includes a screening process to assess the potential environmental and social impacts associated with sub-projects. The KAPAP will be an integrated project with the objective of assisting agricultural producers and other natural resource users increasingly adopt profitable and environmentally-sound practices. No major negative environmental issues are anticipated for the project. The project is also expected to produce net benefits in terms of natural resource management and conservation and, therefore, certain project activities may have environmental or social impacts that require mitigation. The purpose of the ESMF is to cover the unknowns. Using the screening and review process for sub-project identification presented here will, therefore, help determine which of the safeguard policies are triggered and what measures will need to be taken to address the potential impacts.

In addition to the World Bank's OP 4.01 on Environmental Assessment, the KAPAP SubProjects has triggered OP 4.10 on Indigenous Peoples; OP 4.09 on Pest Management, and OP 4.04 on Natural Habitats. This screening and review process will determine how and when a particular sub-project will trigger a safeguard policy, and what mitigation measures will need to be put in place. It will also ensure that sub-projects that may have potentially significant impacts will be studied in greater detail. The need for sub-project specific EAs will also be identified by this screening and review process. The RSUs and their teams (environmental committees, SPs, CBOs and NGOs) will work with communities in preparing sub-project applications to avoid or minimize adverse environmental and social impacts. They will use a checklist (Format 6.1) together with information on typical project impacts and mitigation measures. The checklist contains a certification by the community and extension team that the application includes all measures required to avoid or minimize adverse environmental and social impacts. The sub-projects will be given an environmental rating. This ESMF has included a suggested format for EA in case the need arises where a sub-project is of environmental category A in nature. The RSUs will be responsible for ensuring that the environmental and social impacts screening and review system set out in this Environmental and Social Management Framework (ESMF) is integrated into the sub-projects cycles.

In order to ensure proper implementation of environmental and social screening, and mitigation measures, the KAPAP project will undertake an intensive program of environmental training and institutional capacity building. Environmental training and sensitization will be required at all levels including community workers, VFFs, DFFs, KAPAP-SC and RSU. The KAPAP Secretariat, RSU, SPs and additional experts will provide a diverse range of technical training on environmental issues to these groups. The screening criteria outlined in this ESMF includes relevant questions which will help determine if any other safeguard policies are triggered and the measures need to be taken to mitigate impacts. This will ensure that sub-projects that may have potentially significant impacts and require more detailed study receive national level approval as well as district level approval. Where an EA has to be carried out, this will be done by a NEMA registered EA expert. Figure 2 depicts the process that the RSUs and the

extension team (SPs, CBOs and NGOs) will apply in working with the communities to avoid or mitigate negative environmental impacts for community sub-projects.

Figure 2: Process of Screening for Community Sub-projects



Communities will identify sub-projects with the assistance of the extension teams (SPs, CBOs and NGOs) and RSUs. The proposed sub-projects will subsequently be checked against the screening checklist (Format 6.1). RSUs and SPs will encourage communities to carry out this task themselves possibly with the help of the facilitators, extension agents, health workers or other literate members of the community. The checklist is a simple yes/no form culminating in whether specific advice to the community on environmental mitigation is required. SPs will give this advice, or in special cases, will call upon the DEOs for specific technical advice. The Screening forms will be reviewed quarterly at KAPAP-SC meetings.

Format 6.1. Baseline information on the development of ESMF for the proposed KAPAP Sub-projects (Screening Checklist)

Background information

-
- Name of district
 - Name of RSU/Monitoring officer
 - Sub-project location
 - Name of CBO
 - Sub-project name
 - Estimated cost (KShs.)
 - Approximate size of land area available for the sub-project
 - Activities/enterprises undertaken
 - How was the sub-project chosen?

Environmental Issues

Will the sub-project:	Yes	No
Create a risk of increased soil degradation or erosion?	<input type="checkbox"/>	<input type="checkbox"/>
Affect soil salinity and alkalinity?	<input type="checkbox"/>	<input type="checkbox"/>
Divert the water resource from its natural course/location?	<input type="checkbox"/>	<input type="checkbox"/>
Cause pollution of aquatic ecosystems by sedimentation and agro-chemicals?	<input type="checkbox"/>	<input type="checkbox"/>
Introduce exotic plants or animals?	<input type="checkbox"/>	<input type="checkbox"/>
Involve drainage of wetlands or other permanently flooded areas?	<input type="checkbox"/>	<input type="checkbox"/>
Cause poor water drainage and increase the risk of water-related diseases such as malaria?	<input type="checkbox"/>	<input type="checkbox"/>
Reduce the quantity of water for the downstream users?	<input type="checkbox"/>	<input type="checkbox"/>
Result in the lowering of groundwater level or depletion of groundwater?	<input type="checkbox"/>	<input type="checkbox"/>
Create waste that could adversely affect local soils, vegetation, rivers and streams or groundwater?	<input type="checkbox"/>	<input type="checkbox"/>
Reduce various types of livestock production?	<input type="checkbox"/>	<input type="checkbox"/>

If the answers to any of the above is 'yes', please include an EMP with sub-project application.

Socio-economic Issues

Will the sub-project:	Yes	No
Displace people from their current settlement?	<input type="checkbox"/>	<input type="checkbox"/>
Interfere with the normal health and safety of the worker/employee?	<input type="checkbox"/>	<input type="checkbox"/>
Reduce the employment opportunities for the surrounding communities?	<input type="checkbox"/>	<input type="checkbox"/>
Reduce settlement?	<input type="checkbox"/>	<input type="checkbox"/>
Reduce income for the local communities?	<input type="checkbox"/>	<input type="checkbox"/>
Increase insecurity due to introduction of the project?	<input type="checkbox"/>	<input type="checkbox"/>
Increase exposure of the community to HIV/AIDS?	<input type="checkbox"/>	<input type="checkbox"/>

Natural Habitats

Will the sub-project:	Yes	No
Be located within or near environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?	<input type="checkbox"/>	<input type="checkbox"/>
Adversely affect environmentally sensitive areas or critical habitats?	<input type="checkbox"/>	<input type="checkbox"/>
Affect the indigenous biodiversity (Flora and fauna)?	<input type="checkbox"/>	<input type="checkbox"/>
Cause any loss or degradation of any natural habitats, either directly (through project works) or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>

Does the project affect the aesthetic quality of the landscape?	<input type="checkbox"/>	<input type="checkbox"/>
Does the sub-project reduce people's access to the pasture, water, public services or other resources that they depend on?	<input type="checkbox"/>	<input type="checkbox"/>
Increase human-wildlife conflicts?	<input type="checkbox"/>	<input type="checkbox"/>

If the answers to any of the above is 'yes', please include an EMP with sub-project application.

Pesticides and Agricultural Chemicals

Will the sub-project:		
Involve the use of pesticides or other agricultural chemicals, or increase existing use?	<input type="checkbox"/>	<input type="checkbox"/>
Cause contamination of watercourses by chemicals and pesticides?	<input type="checkbox"/>	<input type="checkbox"/>
Cause contamination of soil by agrochemicals and pesticides?	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to the above is 'yes', please consult the IPM that has been prepared for the project.

Indigenous Peoples

Are there:		
Indigenous groups living within the boundaries of, or near the project?	<input type="checkbox"/>	<input type="checkbox"/>
Members of these indigenous groups in the area who could benefit from the project?	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to any of the above is 'yes', please consult the IPP that has been prepared for the project.

Land Acquisition and Access to Resources

Will the sub-project:	Yes	No
Require that land (public or private) be acquired (temporarily or permanently) for its development?	<input type="checkbox"/>	<input type="checkbox"/>
Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)	<input type="checkbox"/>	<input type="checkbox"/>
Displace individuals, families or businesses?	<input type="checkbox"/>	<input type="checkbox"/>
Result in temporary or permanent loss of crops and fruit trees?	<input type="checkbox"/>	<input type="checkbox"/>
Adversely affect small communal cultural property such as funeral and burial sites, or sacred groves?	<input type="checkbox"/>	<input type="checkbox"/>
Result in involuntary restriction of access by people to legally designated parks and protected areas?	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to any of the above is ‘yes’, please consult the mitigation measures in the ESMF, and if needed prepare a RAP.

Proposed action

Summarize the above:

All the above answers are ‘No’

There is at least one ‘Yes’

Guidance

- If all the above answers are ‘No’, there is no need for further action;
- If there is at least one ‘Yes’, please describe your recommended course of action (see below).

Recommended Course of Action

If there is at least one ‘Yes’, which course of action do you recommend?

RSUs and DEOs will provide detailed guidance on mitigation measures as outlined in the ESMF; and

Specific advice is required from DEOs and RSUs regarding sub-project specific EA(s) and also in the following area(s)

[type here]

All sub-project applications/proposals MUST include a completed ESMF checklist. The KAPAP-RSU will review the sub-project applications/proposals and the DEOs will sign off;

The proposals will then be submitted to KAPAP-Secretariat for clearance for implementation through RSUs.

Expert Advice

The Government of Kenya through the Department of Monuments and Sites of the National Museums of Kenya can assist in identifying and, mapping of monuments and archaeological sites; and

Sub-project specific EAs, if recommended, must be carried out by experts registered with NEMA and be followed by monitoring and review. During the process of conducting an EA the proponent shall seek views of persons who may be affected by the sub-project. The WB policy set out in OP 4.01 requires consultation of sub-project affected groups and disclosure of EA’s conclusions. In seeking views of the public after the approval of the sub-project, the proponent shall avail the draft EA report at a public place accessible to project-affected groups and local NGOs.

Completed by: [type here]

Name: [type here]

Position / Community: [type here]

Date: [type here]

Field Appraisal Officer (DEO): [type here]

Signature: []

Date: [type here]

Figure 3: Rationale for the Design of Screening Checklist

-
- There will be many sub-projects supported by the KAPAP. Therefore, a system that is streamlined is required, and as far as possible, communities must be responsible for completion of screening;
 - In most cases, communities will have very little knowledge of environmental and social screening, hence the need for SPs, CBOs, NGOs and extension workers assistance in using the screening forms;
 - The screening prompts a list of yes/no answers in relation to questions on the location of the sub-project and the anticipated impacts; if there are 'yes' answers to any of these questions, then the RSUs, SPs and extension workers are obliged to recommend a course of action;
 - This action can be for the community itself to manage or avoid impacts; RSUs and SPs, CBOs and NGOs to provide specific advice; or if necessary, technical advice can be sought from elsewhere;
 - Sub-project specific EAs, if recommended, can only be carried out by a NEMA registered EA Expert;
 - The forms will be reviewed by the KAPAP-RSU, signed off by DEOs and approved at the quarterly KAPAP-SC meetings before operations begin.
-

6.4 Annual Environmental and Social Audit Report Format

The format for completion of the annual environmental and social progress report is set out in Box 3 below. The objectives of annual reviews of ESMF implementation are: (a) to assess the project performance in complying with ESMF procedures, learn lessons, and improve future performance; (b) assess the occurrence of, and potential for, cumulative impacts due to project funded activities. These reports will be the main source of information for the World Bank supervision missions and national environmental management authority when needed.

Box 3 Annual Environmental and Social Progress Report Format

1. Introduction;
2. Acronyms
3. Objective;
4. Community sub-projects approved;
5. Key environmental and social issues identified from sub-project screening;
6. Mitigation actions undertaken;
7. Capacity building programs implemented (training sessions held, venues, attendance and training modules);
8. Results of EAs and other required safeguard management plans (e.g., EMP, RAP, PMP, and IPP);
9. Collaboration with NGOs, SPs, and Government line agencies;

10. Conclusions (Is the KAPAP contributing to sustainable land use and community development) Explain;
 11. Lessons learnt; and
 12. Recommendations that can be implemented for sub-projects that will be implemented the following year.
 13. Annexes
-

6.5 Description of Roles and responsibility in the KAPAP Structure

The roles proposed under this ESMF are summarized as follows:

- The KAPAP Steering Committee (KAPAP-SC) will provide lead coordination at the national level and ensure that the results meet the targets set by the project;
- The functional responsibility for project implementation will be carried out by a multi sectoral technical unit, KAPAP-Secretariat ;
- The RSUs will handle day-to-day coordination of project activities at the districts;
- The extension teams (SPs, CBOs and NGOs) and RSUs will be responsible for ensuring that the environmental and social screening and review systems set out in this chapter are integrated into the sub-projects cycle and that it is implemented;
- Sensitization of VFFs, DFFs, SPs to environmental and social issues will be a significant part of ensuring this integration, as will partnerships with government officers associated with the project;
- The RSUs will draw on the technical advice of government officers in other departments, DEOs, SPs, CBOs and NGOs or upon traditional technical knowledge particularly of natural resource management, land tenure practices, livestock management and the use of indigenous plant and animal resources;
- The DEOs will provide backstopping technical advice in environmental and social screening of sub-projects and sign off sub-project proposals and applications before they are submitted to KAPAP –Secretariat for approval;
- The RSUs will coordinate inputs from VFFs, DFFs, SPs, CBOs, NGOs, DEOs, KAPAP-RSU and provide the key link between the District sub-projects and KAPAP-Secretariat;
- The implementation of the IPP and the communication between the project and the Ogiek and Sengwer will be governed by an IPP steering committee, which should meet once a year. The IPP steering committee will consist of a KAPAP Officer and representatives from the ministries of agriculture, livestock and fisheries development, water and irrigation, environment and natural resources, lands, home affairs, planning and national development, education/gender/sports/culture and social affairs, special programmes, tourism, Forestry and wildlife, justice, and the offices of the president, and Kenya national commission for human rights and an Officer from the Kenya National Federation of Agricultural Producers (KENFAP). In addition the following will be members of the IPP steering Committee: one representative from each of the 3 districts (Nakuru Trans Nzoia and West Pokot) in

which KAPAP interacts with indigenous peoples, 2 representatives from the IPOs (one for each group [Ogiek, Sengwer,]).

- At district level, a district IPP-committee will link up the KAPAP, the indigenous peoples and the district administration. It will meet twice a year and work as focal point for all IPP related issues at district level. It will be informed about all kinds of KAPAP activities and communicate relevant information through the indigenous peoples' representatives to the indigenous peoples' communities. It will also gather information and feedback from the indigenous peoples' communities to channel them to the relevant governmental structures, the KAPAP Steering committee and/or the KAPAP Secretariat. It will consist of the RSU Coordinator and representatives from the District departmental heads of agriculture, livestock, forestry, lands, security (police), development, social affairs, KENFAP and 10 elected representatives from the indigenous peoples' communities.
- An independent team will prepare an end phase social and environmental audit report for submission to KAPAP-RSU, KAPAP-Secretariat and the KAPAP-Steering Committee. This audit report will be shared with KARI, NEMA, the World Bank and other relevant government and non Governmental agencies.

6.6 Monitoring and Evaluation

Two strategies are used to build a simple system for monitoring of environmental and social impacts:

- The KAPAP-Secretariat, RSU, DEOs and other stakeholders will consider the environmental and social criteria that require measurement (e.g. sediment levels). A list of initial proposals is given below; and
- Using this list of criteria, a set of indicators will be integrated into recording forms to be used in a participatory approach to environmental monitoring and evaluation.

6.6.1 Initial Proposals

The key issues to be considered in the KAPAP include monitoring of water quality, biodiversity, soil fertility, agricultural production, income generation and population dynamics. The goals of monitoring will be to measure the success rate of the project, determine whether interventions have resulted in dealing with negative impacts, and whether further interventions are needed or monitoring is to be extended in some areas. Monitoring indicators will very much be dependent on specific project contexts. Monitoring and surveillance of the KAPAP sub-projects will take place on a "sample" basis as it would be impossible to monitor all the sub-projects. It is not recommended to collect large amounts of data, but rather to base monitoring on observations by project officers and stakeholders to determine trends of the indicators.

6.6.2 Monitoring of the Participation Process

The following are selected indicators for monitoring the participation process involved in the KAPAP activities:

- Number and percentage of affected households consulted during the planning stage;
- Number of households participating in implementation of micro-projects
- Levels of decision-making of affected people;
- Levels of understanding of sub-projects impacts and mitigation;

Effectiveness of local authorities to make decisions;

- Frequency and quality of meetings; and
- Degree of involvement of women or disadvantaged groups in discussions.

6.6.3 Monitoring Indicators

Monitoring the Implementation of Mitigation Measures.

Tables 7 and 8 list the recommended socio and environmental, indicators resulting from the implementation of sub projects.

Table 7: Indicators for Environmental Monitoring the KAPAP

Environmental Indicator	Methods	Responsibility	Frequency
Water quantity	River gauging station records	Extension teams (SPs, CBOs, NGOs)	Daily continuous recording
Water quality	Sample collection and analyses	Extension teams (SPs, CBOs, NGOs)	Quarterly
Water table level	Borehole depth records	Extension teams (SPs, CBOs, NGOs)	Monthly
Sediment load	Sediment analysis	Extension teams (SPs, CBOs, NGOs)	Quarterly
Soil organic content	Organic content determination	Extension teams (SPs, CBOs, NGOs)	Once/year
Soil salinity	Salinity measurement	Extension teams (SPs, CBOs, NGOs)	Once/year
Deforestation/de-vegetation	Vegetation cover determination	SPs	Once/year
Biodiversity richness	Floral and faunal composition surveys	SPs	Once/year
Size of wetlands	Visual observation and measurements of wetland size/	SPs	Once/year
Wildlife species	Census of animals, reports from inhabitants	SPs	Twice/year

Weed infestation	Field observation, questionnaire survey	Extension teams (SPs, CBOs, NGOs)	Once/year
Migratory pests	Field observation, questionnaire survey	Extension teams (SPs, CBOs, NGOs)	Once/year
Water-related disease vectors	Vector catches and identification	SPS	Twice/year

Table 8: Indicators for Social Monitoring of the KAPAP

Social Indicator	Methods	Responsibility	Frequency
Demography	Census of inhabitants	Extension teams (SPs, CBOs, NGOs)	Once/year
No. of farmers trained on environmental issues in the district	Training records	SPs	Twice/year
% of community in planning meetings	Planning meetings records	Extension teams (SPs, CBOs, NGOs)	Twice/year
Number of sub project a funded	Project records	RSUs, KAPAP-Secretariat	Twice/year
Number of sub projects implemented	Field survey	RSUs and SPs	Monthly
% of communities adopting environmental conservation measure	Field survey	Extension teams (SPs, CBOs, NGOs)	Twice/year
Relative increase in income from crops and livestock	Household survey	Extension teams (SPs, CBOs, NGOs)	Twice/year
Vulnerable groups involved in identified alternative livelihood practices	Household survey	Extension teams (SPs, CBOs, NGOs)	Twice/year
Number of training sessions held on use of fertilizers and chemicals and IPM	Training records	RSUs	Monthly
Number of social categories represented in the training sessions	Training records	RSUs	Monthly
Number of indigenous people attending the trainings	Training records	RSU	Monthly
Number of trained of staff from KAPAP, relevant governmental structures and Ministries and IPOs on IPP approaches	Training records	KAPAP IPOs	Monthly
% of beneficiaries of IPP training able to implement the IPP	Field survey	KAPAP	Twice/year
Number of participatory impact monitoring (PIM) activities carried out at district level.	Project records	KAPAP-SC and RSU	Twice/year

% of IP settlements with community forest titles	Project records	KAPAP- SC and IPOs	Once/year
% of IP settlements implementing income generating activities initiated by KAPAP	Project records	KAPAP, IPOs	Twice/year
Reported cases of killing, looting and cattle rustling in IP settlements	IPP District Committee records	KAPAP	Twice/year
% of IP settlements where at least one development activity has been implemented	Project records	KAPAP	Twice/year
Number of IPs newly employed in relevant jobs where applicable	Field survey	RSUs, IPOs	Twice/year
Number of justified IP complains about social discrimination etc.	Project records	RSUs, IPOs, SPs	Quarterly
Number of community members with a general understanding of environmental issues and management strategies	Sensitization meetings records	RSUs	Twice/year

7.0 CAPACITY BUILDING AND TRAINING REQUIREMENTS

7.1 Environmental training and sensitization

In order to ensure proper implementation of environmental and social screening, and mitigation measures, as well as effective natural resource management, the KAPAP will undertake an intensive program of environmental training and institutional capacity building. The objective of the training under the ESMF is to:

- support representatives and leaders of community groups and associations to prioritize their needs, and to identify, prepare, implement and manage the environmental and social aspects of their sub-projects;
- support local NGOs and other service providers to act as extension teams to provide technical support (including basic EMPs, RAPs, IPDP, and PMPs) to communities in preparing their sub-projects; and
- ensure that local government officials have the capacity to assist communities in preparing their sub-project proposals, and to appraise, approve and supervise implementation of sub-projects.

The type of training to be offered includes:

- awareness-raising for sub project implementation participants who need to appreciate the significance or relevance of environmental and social issues;
- sensitization of participants who need to be familiar enough with issues that they can make informed and specific requests for technical assistance; and

- detailed technical training for participants who will need to analyze potentially adverse environmental and social impacts, to prescribe mitigation approaches and measures, and to prepare and supervise the implementation of management plans. This training will address such matters as community participation methods; environmental analysis using the ESMF checklist; preparing EMPs, RAPs, PMPs, IPDPs, etc.; ESMF reporting; and sub-project supervision and monitoring.

7.2 Levels of Training and sensitization

Environmental training and sensitization will be required at four levels: (i) community level (farmers, community leaders, workers and indigenous peoples); (ii) service providers (CBOs, NGO, extension workers and indigenous peoples organizations [IPOs]); (iii) review level (KAPAP-RSU), DEOs, indigenous peoples organizations and other environment/social officers); and (iv) clearance providers (KAPAP-Secretariat and KAPAP-SC). In addition to the above training, specialized/technical training on topics such as IPM, EMP will be provided as required. Table 9 outlines the specific training requirements of these levels.

Level I. Community level

This level includes the communities themselves – farmers, community leaders, workers and indigenous peoples. They will need the first level of awareness training on linkages between environmental, social and natural resource management and sustainable livelihoods. Training will be conducted at village levels through workshops, on farm demonstration, exchange visits of farmers to see practices by themselves and publications aimed at the farmer. Some of the topics identified for training are potential localized impacts of sub-projects and suitable mitigation measures; use of ESMF and its procedures; and potential environmental and social sub-projects.

The communities will also be sensitized on available natural resource and management including empowering the farmers to develop and implement community action plans for soil and water conservation, tree nursery establishment and integrated pest management. Other topics will include: conservation and utilization of biodiversity, alternative livelihoods (ecotourism, bee keeping, medicinal plants, farm woodlots, fisheries, emerging livestock), and environmental policies. Indigenous Peoples will be provided with technical capacities to participate actively in sustainable land and natural resource management. Training curricula for the specific needs of the IP will be elaborated or updated. Training materials in indigenous languages will also be developed. Opinion leaders within the communities will be targeted in the trainings to ensure the widespread adoption of practices as well as understanding of policies. Opinion leaders form an important source of information to the community who often turn to them for interpretation of policies and seek their opinion in important matters and trust them to articulate issues on their behalf.

Level II. Service Providers/CBOs/NGOs, extension workers, indigenous people's organizations

The service providers (SPs, CBOs, NGOs and IPOs) and extension workers will assist the communities to formulate sub - project proposals and fill out sub-project applications. They will be made aware of the Environmental Management and Coordination Act of 1999 and other relevant environmental policies. The service providers will also need detailed training on potential localized impacts of sub-projects and suitable mitigation measures. They will require thorough training on the use of the ESMF, its procedures, resources and sub-project screening. In addition, they will be trained on methods of community involvement. Training on methodology, quantitative research and database management in participatory impact monitoring (PIM) will be carried out. IPOs will be assisted in capacity building to reduce the loss of traditional knowledge, culture and livelihood patterns. In addition training will be provided to increase organizational, technical and financial capacities of IPOs.

Staff from KAPAP-Secretariat, the relevant governmental structures and ministries including Indigenous Peoples Organisations (IPOs) will receive training on the implementation of IPP. Capacity building of NGOs and CBOs will be done at the catchment level. Building these capacities will reduce dependence on the government extension agents and provide more sustainable provision of agricultural services.

The trainers will be sourced from the research institutes and universities having comparative advantage within each district. Training could be organized in KARI centers and /or at other government institutions at the district level.

Level III. Review authorities

This level includes OACs, KAPAP-RSUs, DEOs, IPOs and other environment/social officers. This group will review sub-project proposals and applications before they are submitted to KAPAP – Secretariat, for approval. This group will require in-depth training on environmental-social-natural resource-sustainable livelihood linkages, environmental legislation and policies, potential sub-project impacts and mitigation, use of ESMF, cumulative impacts, and intercommunity lesson-learning and review.

Level IV. Approval / vetting Authorities

This level includes the clearance providers or the approval level authorities. They include committees such as those under the RSU, KAPAP- Secretariat, and KAPAP-Steering Committee. The identified fields of training include awareness -raising on available natural resource management technologies, environmental policies and relevant legislation. Other issues include ESMF and its procedures, cumulative impacts, potential environmental and social sub-projects, and IPP. Training for this group will be done through consultative policy meetings, workshops and organized site visits.

The beneficiaries of the environmental and social training (Levels I-IV) in those areas with indigenous peoples will also receive training in intercultural communication and

sensitization on the rights and the needs of indigenous peoples. It is important to emphasize that for each sub-project not only an environmental screening will be carried out, but also a social screening which prohibits any sub-project from receiving funding as long as the affected indigenous peoples are not in support of this specific sub-project.

7.3 Specialized /Technical Training

In addition to the above training, specialized/technical training will be offered as required on such topics as:

- Land and water management
- Conflict management/ resolution
- Participatory integrated watershed management
- Agribusiness development and value chain management skill
- Participatory integrated community development
- Integrated participatory community management
- IPM (ICIPE, ICRAF, KARI);
- Pesticides/insecticides container management (someone from ICIPE or Crop Life International);
- Small-scale animal/crop husbandry(Livestock and agriculture ministry);
- Small-scale aquaculture (ministry of fisheries);
- Small scale agriculture and irrigation schemes (NIB and KARI); and

7.4 Training requirements and curriculum

In order to ensure full environmental and social mainstreaming so that all the relevant issues are addressed to the maximum and in the most positive extent, KAPAP will undertake a program of environmental and social capacity building aimed at KAPAP Personnel, implementers and stakeholders.

Training and awareness raising of various types will be required for personnel in the following KAPAP institutions and groups of stakeholders:

- the KAPAP Secretariat;
- the KAPAP Steering Group;
- the members of the Extension, Research Task forces and of the National Farmers fora;
- the KAPAP Coordinators in the RSUs ;
- and potentially, stakeholders at all levels from Directors in the steering Committee, Permanent Secretaries in the Inter-Ministerial Steering Committee (ICC) to persons forming Common Interest Groups and Associations at the level of individual communities.

The KAPAP Environmental and Social Focal Points will be the primary focus for more detailed training, at the on- set and mid-way through KAPAP Phase 2 and three. KAPAP Secretariat assisted as necessary by additional experts, will take responsibility for sensitization and awareness raising amongst KAPAP institutions and stakeholders. Table 9 sets out the capacity building requirements for these different groups. An outline of the curriculum for the various training/capacity building activities is provided in Table 10.

Table 9 Training/capacity building requirements

Attribute level of training	Environmental and Social Points (KS and RSUs)	Focal and Points (KS and RSUs)	Other KS staff, KAPAP Group, secretariat staff/coordinators	Task CF	ISC, District officials, other institutional stakeholders	Stakeholder groups at district level and below
Training to a level that allows trainees to go on to deliver sensitisation/ awareness raising to others, and to manage environmental and social mainstreaming within KAPAP processes	✓	-	-	-	-	-
Sensitization, in which the participants become sufficiently familiar with the issues that they can take an active role in facilitating and shaping discussion on KAPAP outcomes, and then designing and implementing them at a strategic level (e.g. policy reforms, overall work plans, etc)	-	✓	-	-	-	-
Sensitization, in which the participants become sufficiently familiar with the issues that they can contribute to discussion and decision-making on KAPAP outcomes, and/or to implementation at District level (e.g. micro projects)	-	-	✓	-	-	-
Awareness-raising, in which the participants appreciate the significance or relevance of the issues, and are able to take them into account when articulating their needs and expressing their views	-	-	-	-	✓	-

Table 10 Proposed environmental training and sensitization program

Intended Audience	Training Content	Input (days)	Frequency
Environmental and Social Focal Points (KS and RSUs)	<ul style="list-style-type: none"> • introduction to environmental and social issues in agriculture • integrating environmental and social considerations into identification and design of projects/activities • use of appropriate indicators and monitoring/evaluation techniques • environmental and social advocacy (within a consultative process) • environmental regulations/safeguards (Kenya and World Bank) • open session on specific technical issues as requested • train the trainers techniques 	2 day workshop	Inception, and again at mid-term of Phase
Other KS staff, KAPAP Task Group, CF secretariat staff/coordinators	<ul style="list-style-type: none"> • introduction to environmental and social issues in agriculture • overview of integration of environmental and social considerations into identification and design of projects/activities • policy and cross-sectoral issues • environmental and social advocacy (within a consultative process) 	1 day workshop	Inception, and again at mid-term of Phase
ISC, District officials, other institutional stakeholders	<ul style="list-style-type: none"> • overview of environmental and social issues in agriculture • policy and cross-sectoral issues • environmental and social advocacy (within a consultative process) 	0.5 - 1day workshop	Inception phase

Intended Audience	Training Content	Input (days)	Frequency
Stakeholder groups at district level and below	<ul style="list-style-type: none"> ▪ overview of environmental and social issues in agriculture ▪ environmental and social advocacy (within a consultative process) 	0.5 - 1day in workshop	Inception, and again at mid-term of Phase

8.0 ENVIRONMENTAL AND SOCIAL FOCAL POINT ROLES AND RESPONSIBILITIES (Optional)

Environmental and social focal points if established (though optional) will help in mainstreaming environmental and socio issues in the program. This has been found necessary due to limited human capacity at the national and district level. Even where there is an officer available, he was found to be covering many districts and many departments. Environmental and social focal points should be identified in the following KAPAP institutions: the KAPAP Secretariat (KS); each of the three national fora (Extension, Research, and Farmer/Client Empowerment); and the Regional Service Units (RSUs). The Roles and responsibilities for each are defined:

8.1 Environmental and Social Roles And Responsibilities of the KAPAP Secretariat

There should be deliberate effort made towards considering and integrating issues of natural resources, environmental and social sustainability into KAPAP processes and outcomes, in order to maximize the positive contribution that KAPAP makes to resource conservation, environmental sustainability, livelihoods security and social inclusion.

8.1.1 Responsibilities

- Ensuring effective integration of environmental and social considerations (e.g. sustainable land management, resource conservation, integrated pest management, free access to land and resources, and culturally appropriate benefits-sharing for marginalized and indigenous groups) into all aspects of identification, consultation, planning and implementation of KAPAP activities;
- advising the Inter Ministerial Coordinating Committee (ICC), the KAPAP Steering Committee (KSC) National forum (NF) and the National Farmer for a (NFF) on the environmental and social implications of proposed policy reforms (where necessary by commissioning further activities [see below]);
- Coordinating, and liaising with, KAPAP Regional Service Units to ensure effective mainstreaming of environmental and social issues into the implementation of KAPAP activities, and facilitating lesson-learning and experience-sharing among districts;
- ensuring that KAPAP-funded activities are consistent in their approaches to environmental and social issues, thereby supporting full blending at the operational level;

- facilitating and informing discussions on environmental and social issues in the ICC ,KSC and consultative fora (the latter through liaison with and coordination of the fora secretariats – see fora secretariat roles and responsibilities, below);
- managing the implementation of all training and awareness raising;
- consolidating documented discussions of the separate fora into periodic reports on environmental and social mainstreaming within KAPAP;
- defining and managing further activities to support environmental and social mainstreaming into KAPAP processes (e.g. further studies; capacity building) - these may include both support activities defined and budgeted within the SESA and components of broader technical support activities funded through KAPAP;
- identifying suitable consultants/institutions to be used on technical support activities in relation to any of the above tasks, and overseeing their procurement and performance;
- liaison with the Kenyan National Environmental Management Authority (NEMA) on a regular basis, and other key environmental and social stakeholders as agreed;
- defining, and subsequently monitoring, suitable environmental and social indicators for KAPAP (including, in consultation with RSUs, for individual micro projects);
- providing environmental and social inputs to periodic KAPAP monitoring, evaluation, and reporting activities; and
- Supporting and contributing to subsequent formal analyses and reports on environmental and social aspects of KAPAP processes (e.g. strategic environmental assessment [SEA] of policy reforms; SESA of subsequent phases of KAPAP).

8.2 Environmental and social roles and responsibilities of the Fora secretariats

Within each of the national fora, a member will be appointed as Environmental and Social Focal Point. The overall roles and responsibilities for this person will cover a broad range of issues; they should include the following points in relation to environmental and social issues within KAPAP.

8.2.1 Roles

To facilitate effective discussions on issues of natural resources , environmental and social sustainability within the fora, so that KAPAP outcomes (policy reform,district interventions) respond to the issues in order to maximise the positive contribution that KAPAP makes to resource conservation, environmental sustainability, livelihoods security and social inclusion.

8.2.2 Responsibilities on environmental issues

- Contributing to, and facilitating, the active involvement of environmental and social stakeholder representatives in the fora;
- ensuring the fora receive advice and information on the environmental and social implications of proposed national policies and micro projects in the districts;
- ensuring that the fora have full access to the results of further technical support activities, where necessary by providing additional explanation;
- facilitating full participation of all environmental and social stakeholders in the consultative process to ensure that outcomes reflect the opinions and aspirations of all interest groups, paying special attention to support to engagement by the representatives of marginalized and/or disadvantaged groups (e.g. indigenous peoples, HIV orphans, etc);
- from discussions in the fora, identifying environmental and social needs and priorities (e.g. within the design and implementation of project activities; for training/awareness raising; or for technical support activities), and providing this information to the KS environmental and social focal point in a timely and systematic fashion;
- documenting the environmental and social dimensions of forum discussions, and reporting these to the KS;
- Supporting and contributing to other KAPAP environmental and social mainstreaming activities as appropriate.

8.3 Environmental and social roles and responsibilities of the Regional Service Units

The RSU in charge of the KAPAP districts will be staffed by one full-time KAPAP Coordinator. The overall roles and responsibilities for this person will cover a broad range of issues; they should include the following points in relation to environmental and social issues within KAPAP.

8.3.1 Roles

To ensure full involvement of environmental and social stakeholders in KAPAP consultative processes, and full integration of environmental and social considerations into the implementation micro projects that KAPAP outcomes maximize the positive contribution to resource conservation, environmental sustainability, livelihoods security and social inclusion.

8.3.2 Responsibilities

- Ensuring that both IDA-funded micro projects and GEF-funded initiatives are identified, planned and implemented in a strongly participatory manner and proceed in environmentally and socially sustainable manner;
- supporting and informing discussions of the fora at District level and below;

- liaising with the KAPAP Secretariat (KS) to facilitate lesson-learning and experience-sharing between districts;
- ensuring that similar lesson-learning and experience-sharing takes place among *micro projects* activities within the district;
- identifying and informing the KS of additional environmental and social requirements at district level (e.g. specific technical studies, capacity building);
- awareness-raising relating to the environmental and social objectives of KAPAP – amongst district officials, within the District Environment Committee, and other stakeholders as required;
- contributing to KS monitoring and evaluation and reporting on environmental and social issues, as required;
- in consultation with the KS defining, and subsequently monitoring, suitable environmental and social indicators for KAPAP micro projects .

9.0 REFERENCES:

1. Alitsi E 2002: Important Environmental Treaties and Conventions Kenya is Signatory to. Kenya NGO Earth Summit 2002 Forum. A report on civil society review of the implementation of agenda 21 in Kenya.
2. BirdLife International, 2003 *Bird Life's online World Bird Database: the site for bird conservation*. Version 2.0. Cambridge, UK: BirdLife International. Available: <http://www.birdlife.org> (accessed 5/4/2005).
3. Central Bureau of Statistics, (2001). 1999 Population and Housing Census. Population Distribution by Administrative Areas and Urban Centres Vol. 1. Republic of Kenya Nairobi.
4. FURP, 1987. Fertiliser use recommendations, vol. 1-23. KARI, FURP, Nairobi
5. Gachimbi, L. N., Keulen, H. van, Thurania, E.G., Karuku, A.M., Jager, A. de, Nguluu, S., Ikombo, B.M., Kinama, J.M., Itabari, J.K. and Nandwa, S. M. (2005) Nutrient balances at farm level in Machakos (Kenya), using a participatory nutrient monitoring (NUTMON) approach. *Land Use Policy* 22 pp. 13-22
6. Gachimbi, L.N., Jager, A. de, Keulen, H. van, Thurania, E.G. and Nandwa, S.M. (2002) *Participatory diagnosis of soil nutrient depletion in semi-arid areas of Kenya*. Managing Africa's Soils no. 26. London: International Institute for Environment and Development, London.
7. Jaetzold, R. and Schmidt ,H.(1983) Farm Management Handbook of Kenya. Vol.II/C: East Kenya. Natural Conditions and Farm Management Information. Nairobi: Ministry of Agriculture and German Agricultural Team(GTZ)
8. Wamukoya and Situma 2000.Environmental Management in Kenya . A guide to the environmental management Coordination Act 1999
9. Nandwa, S.M. Onduru, D.D. and Gachimbi, L.N.(2000). Soil fertility generation in Kenya. In: Hilhorst, T. and Muchena, F.M. (Eds.) 2000. Nutrients on the move - Soilfertility dynamics in African farming systems. International Institute for Environmentand Development, London.
10. Sengwer Indigenous Development Project (SIDP), 2002, Kenya.

11. Kai Schmidt-Soltau 2006 Indigenous Peoples Plan of the Kenya Agricultural Productivity – Sustainable Land Management Project Final Report December 2006
12. Jager de. A., H. Van Keulen, F. Maina, L.N. Gachimbi., J.K. Itabari, E. G. Thurania and A.M. Karuku. 2005. Attaining sustainable farm management systems in semi-arid areas in Kenya. A few technical options, many policy challenges Agricultural systems. *International Journal of Agricultural Sustainability* Vol. 3. (3) 189-205.
13. Republic of Kenya (2004). Strategy for Revitalizing Agriculture 2004-2014. Ministry of Agriculture and the Ministry of Livestock and Fisheries Development.
14. Republic of Kenya (2003). Economic Strategy for Employment and Wealth Creation. Government Printer.

10.0 ANNEXES

Annex 1.0 Terms of Reference (TOR): Kenya Agricultural Productivity Environmental And Social Management Framework (KAPAP ESMF)

Introduction

The Government of Kenya has requested World Bank financing of the Kenya Agricultural Productivity and Agribusiness Project (KAPAP). This project corresponds with the fundamental features of the Government's strategy for poverty alleviation as specified in the Poverty Reduction Strategy Paper (PRSP) of 2003, the Economic Recovery Strategy for Wealth and Employment Creation (ERS, 2003-2007). The project was designed to fund a number of small-scale, community-based sub-projects that were identified and planned by the communities, with the support of project-financed extension teams. The study is expected to produce an ESMF for the proposed KAPAP.

Objectives

The objectives of the KAPAP ESMF are:

- To establish clear procedures and methodologies for environmental and social planning, review, approval and implementation of sub-projects to be financed under the project;
- To prescribe project arrangements for the preparation and implementation of sub-projects in order to adequately address World Bank safeguard issues;
- To assess the potential environmental and social impacts of the sub-projects;
- To propose mitigation measures which will effectively address identified negative impacts;
- To specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to sub-projects;
- To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF; and
- To establish the project funding required to implement the ESMF requirements

Analysis

The analysis includes:

- An assessment of the potential environmental and social impacts of KAPAP, taking into account the World Bank's relevant safeguard policies as well as Kenya's environmental policies, laws and regulations;
- A review of various studies on social, economic and biophysical characteristics of the target districts covered by the project and identification of constraints that need to be taken into account.
- Ascertaining whether the project area contains any environmentally sensitive areas, cultural heritage and vulnerable groups that need to be taken into account during project preparation and implementation;
- Development of screening procedures (including checklists) that will be used as a mechanism in the ESMF for screening potential environmental and social impacts due to sub-project interventions;
- Development of appropriate methods to promote an Integrated Pest Management (IPM) approach that will minimize the need for chemical pesticides during project interventions;
- Review of national environmental policies, legislation, regulatory and administrative frameworks in conjunction with the World Bank's safeguard policies, and formulation of recommendations in the context of the project as appropriate;
- Review of the relevant conventions and protocols to which Kenya is a signatory;
- Evaluation of the existing environmental and social assessment, and management capacity as well as capacity to implement mitigation measures, and formulation of appropriate recommendations, including the institutional structure and the responsible agencies for implementing the framework, a grievance mechanism and monitoring and evaluation (M&E) of potential impacts;
- Evaluation of capacity building and training needs and their costs; and
- Presentation of an outline on institutional arrangements for environmental management, including environmental assessment procedures and monitoring indicators, as appropriate under the project.

Principles And Methodology

The study will focus on the development of the ESMF instead of the Environmental and Social Assessment (ESA) because the precise details of the sub-projects in terms of location, materials required, key communities, etc. are not yet known. The ESMF is required to screen for and manage the potential environmental and social impacts of the KAPAP.

The ESMF Methodology will involve:

- Review of previous reports, published and unpublished works on the environment of the study area;
- Identification of gaps existing in the available information;
- Field investigations;
- Collation of baseline data on the environmental conditions of the project area;

- Identification of positive and negative environmental and social impacts;
- Identification of environmental and social mitigation measures;
- Preparation of screening procedures to be used while screening sub-project proposals; and
- Formulation of environmental and social monitoring plans.

Report layout

The ESMF report will be organized as follows:

Executive summary

Acronyms and abbreviations

Chapter 1 - Introduction

Chapter 2 - Description of the proposed programme

Chapter 3 - Safeguard screening procedures

Chapter 4 - Baseline information

Chapter 5 - Guidance on impacts

Chapter 6 - Reporting and responsibilities for the ESMF

Chapter 7 - Capacity building and training requirements/needs

Chapter 9 - Technical annexes

Annex 1 - Maps of the project areas

Annex 2 - Itinerary of field visits

Annex 3 - Stakeholders consulted

Annex 2.0 Referred Documents

1. Project Appraisal Document (PAD)
2. The Project Implementation Plan (PIP)
3. Environmental And Social Management Framework ESMF).for Kenya Agricultural Productivity And Sustainable Land Management Project (KAPAPSLM). 2006
4. Internal Project Evaluation Reports
5. Household Baseline Survey Report
6. NASEP and its Implementation Framework
7. Farmers Grant Manual (FGM)
8. Inventory and Database of Extension Organizations in Kenya
9. Operational Manual for use by the Regional Service Units (RSUs)
10. Reports of the World Bank supervision missions (2006 and 2007)
11. KARI External Programme and Management Review Report
12. KARI Strategic Plan (2005-2015)
13. KARI Human Resource Strategy (2006)
14. ICT Strategy (2004-2008)
15. The Draft KARI Medium Term Plan IV
KARI Customer Satisfaction survey report and other relevant documents.
16. Vision 2030
17. National Agricultural Research System Policy

Annex 3.0 Field Trip Schedule

Date	Location	Detailed activity
2 nd October 2008	Taita Taveta (Wundanyi RSU office) and travel to Mombasa	Meet with stakeholders from 11 am to 1pm. 2-4pm meet with a CIG
3-4 th October 2008	Kilifi District Hqts (RSU office)	Meet with stakeholders from 11 am to 1pm. 2-4pm meet with a CIG and travel to Nyeri on 4 th October 2008
6 th Oct. 2008	Nyeri District Hqts (RSU office)	Meet with stakeholders from 10 am to 1pm. 2-4pm meet with a CIG and sleep in Meru.
7 th and 8 th October . 2008	Meru District Hqts (RSU office)	Meet with stakeholders from 11 am to 1pm. Meet with a CBO from 2-4pm and travel to Nakuru on 8 th October
9 Oct.2008	Nakuru District Hqts (RSU office)	Meet with RSU/stakeholders from 11 am to 1pm. Meet with a CIG from 2-4pm, Compile report on 10 th and 11 th , while in Nakuru and travel to Homa Bay on 12 th October 2008
13 th Oct. 2008	Homa-bay District Hqts (RSU office)	Meet with RSU/stakeholders from 11 am to 1pm. Meet with a CIG from 2-4pm
13 th October 2008	Kakamega (RSU office)	Meet with RSU/stakeholders from 11 am to 1pm. Meet with a CIG from 2-4pm and travel back to Nairobi
17 th October 2008	MAKUENI (WOTE RSU OFFICE)	Meet with stakeholders from 11 am to 1pm. 2-4pm meet with a CIG

Annex 4.0 Consulted Stakeholders

Taita District: 2nd October, 2008

No.	Name	Organisation	Address
1.	E. W. Mbiinga	Coord', KAPAP RSU, TAITA	Box 1239, Wundanyi
2.	B. S. Thuya	Veterinary Department	Box 1125, Wundanyi
3.	J. M. Nkanata	Veterinary Department	Box 1125, Wundanyi
4.	J. Margaret	D. A. O	Box 1035, Wundanyi
5.	Julius Mkongo	Fisheries Department	Box 1125, Wundanyi
6.	James Mwang'ombe	Chairperson, SPF	Box 1043, Wundanyi
7.	Benson Mwazili	Chief, Wumingu Location	0735540353
8.	Patrick Alwala	Cooperative Development	Box 1036, Wundanyi
No.	Name	CIG members	Location
1.	Herman M. Miwawasi	Cabbage/Ttomato	Wumingu
2.	Nicholas M. Mwamela	Fish/Dairy/Dopper	Wumingu
3.	David Mtwacha Lumbo	Fish/Dairy/Dopper	Wumingu
4.	Humphrey M. Mwandawiro	Fish/Bee/Beans	Wumingu
5.	Briston Mwakilenge	Dairy/Cabbage/Tomatoes	Wumingu
6.	Agnes Mwakilenge	Dairy/Silk/Fishing	Wumingu
7.	Agneta Mwatika	Dairy/Silk/Fishing	Wumingu
8.	Mlambu Maimbo	Assistant Chief, Nyache	Wumingu
9.	S. M. Mwakilenge	Assistant Chief, Mgambonyi	Wumingu
10.	Claudeus Mnyembo	Pastor	Wumingu
11.	Joseph Kanda Mwakidoshi	Tomatoes/Cabbage/Dairy/Fishing	Wumingu
12.	Amos Maganga	Tomatoes/Cabbage/Dairy	Wumingu

Kilifi District: 3rd October 2008

No.	Name	Organization/CIG	Address
1.	Anthony K. Kazungu	Service Provider	P. O. Box 1157, Kilifi
2.	L. M. Nderi	RSU- M & EO	P. O. Box 175, Kilifi
3.	Oscar Charo	KENFAP	P. O. Box 77, Kaloleni
4.	Henry S. Manyonyi	Ministry of Coop and Marketing	P. O. Box 33, Kilifi
5.	Joanne N. Nyamasyo	Livestock Department	P. O. Box 553, Kilifi
6.	Lucy M. Ruwa	Veterinary Department	P. O. Box 97, Kilifi
7.	Munyasi J. W.	Consultant	P. O. Box 12, Machakos
8.	Louis Gachimbi	Consultant	P. O. Box 14733 – 00800, Nairobi
9.	Mbaluka M.	Agriculture	P. O. Box 19, Kilifi
10.	Masis Ali Mwamutsi	Kenya Forest Service	P. O. Box 247, Kilifi
11.	Severinus Jembe	National Museums of Kenya	P. O. Box 596, Kilifi
12.	John Wanje	Tomato Self Help Group	0728450611
13.	Humphrey Kitsao	Tomato Self Help Group	0724048890
14.	Edward N. Chai	Tomato Self Help Group	0710542523
15.	Fredrick Ngao	Tomato Self Help Group	P. O. Box 29, Kaloleni
16.	David Fondo	Tomato Self Help Group	P. O. Box 35, Kaloleni
17.	Kitsao Munga	Tomato Self Help Group	P. O. Box 29, Kaloleni
18.	Ndoro Ngella	Tomato Self Help Group	P. O. Box 35, Kaloleni
19.	Patrick Karisa	Tomato Self Help Group	P. O. Box 96, Kaloleni
20.	Lennox Kombe	Tomato Self Help Group	P. O. Box 297, Kaloleni
21.	Juma Charo	Tomato Self Help Group	P. O. Box 297, Kaloleni
22.	Samini Kithi	Tomato Self Help Group	P. O. Box 29, Kaloleni
23.	Mwari Kassim		0710243138
24.	Penina Konde		P. O. Box 31, Kaloleni
25.	Lilian Rimba		
26.	Emily Kombe		P. O. Box 297, Kaloleni
27.	Edward Wanje		P. O. Box 163, Kaloleni

28.	Patrick Rusa		P. O. Box 12, Kaloleni
29.	Amos Chengo Mae		P. O. Box 12, Kaloleni
30.	Jonathan T. Baya	Tomato Self Help Group	P. O. Box 225 – 80105, Kaloleni
31.	Jacqueline Fondo		
32.	Emmaculate Kengo		

Nyeri District 6th October 2008

No.	Name	Organisation	Address
2.	Neville Agoro	KAPAP, Nyeri RSU	Box 145, Nairobi
3.	Moses M. Ngugi	SP Mumw D. Cow C/E	Othaya
4.	Ndirangu, T. W.	SP. Aguthi Tetu	Box 1552, Othaya
5.	John N. Kanja	SP. Endarasha Kieni West	0726510096
6.	John M. Gachuru	SP. Ruguru/Endarasha Nyeri North	0721551143
7.	M. Kaniaru	SP. Aguthi Coffee CIG	
8.	Nancy W. Karandi	SP. Aguthi Tetu	Box 195, Nyeri
No.	Name	Othaya CIG	Address
1.	Emilio Murai	Mumwe Dairy Cow	Box 347, Othaya
2.	Benard Muito	Mumwe Dairy Cow	Box 491, Othaya
3.	Peter Wang'ondu	Mumwe Dairy Cow	Box 82, Othaya
4.	John Kanyuira Mbogo	Mumwe Dairy Cow	Box 539, Othaya
5.	Philip Maina Ngunjiri	Mumwe Dairy Cow	Box 491, Othaya
6.	Samuel Kahuho	Mumwe Dairy Cow	Box 16, Othaya

Meru- Imenti North District , 7th October 2008

No.	Name	Organisation	Address
3.	Henry Muthamia	Mango	
4.	John Mwebia	Mango	Box 82, Mitunguu
5.	Simon Bengi	Mango	Box 80, Mitunguu
6.	James Thuri	SP. Mango Processing	Box 8, Mitunguu
7.	Zakary Murithi	CBO Ruiru	Box 1712, Meru
8.	Charity Mwirebupa	CBO Ruiru	Box 1712, Meru
9.	Josiah Njue Muruambui	Mango	Box 82, Meru
10.	David Gituma	Banana	Box 32, Kanyakine
11.	Beatrice Kiende	Banana	Box 110, Nkubu
12.	Ciprian Mbii	Banana	Box 110, Nkubu
13.	George Mutea	Groundnut	Kiaburine
14.	Nahashon Kaburu	Groundnut	Kiburine
15.	Domisiano Muthuri	Groundnut	Kiburine
16.	Zablon Kithinji	Groundnut	Kiburine
17.	Patrick Mbaabu	DFO (Fisheries)	Meru Region
18.	Douglas Koome Mworua	Groundnut	Kiburine
19.	Joshua Guantai	Cattle	Ruiru
20.	Gilbert G. Mutua	Chief – Nkachie Location	Box 34, Kanyakine
21.	Cosmas K. Muarimi	Assistant Chief Maraa	Box 110, Nkubu
22.	Gerald K. Manyara	Social Services	Box 216, Meru/0722920209
23.	John N. Ngaru	Groundnut - Kiburine	Box 1705, Meru
24.	Jeremiah M. M'alaine	Deputy DAO Imenti North	Box 12, Meru
25.	Agnes K. Mwita	Mango	Box 96, Mitunguu
26.	G. M. Mwoga	RSU Coordinator Meru Central	
No.	Name	CIG enterprise	
1	Stephen Bundi	Bee keeping	

2.	Andrew Kirujah	Macademia	
3.	Edwin Maingi	G. Amaranthus	
4.	Fridah Makandi	Coffee improvement	
5.	Mildah Mukuri	Local poultry	
6.	Lilian Kinya	Local poultry	
7.	Francis Wanderi	Dairy cattle	
8.	Hellen Kimeria	Amaranthus	
9.	Japhet Bundi	Grain Amaranthus	

Homabay: 13TH October, 2008

No.	Name	CIG	Address
1.	Raphael Okeyo	Local Poultry	
2.	William Otieno	Local Poultry	
3.	Stephen Obal	Local Poultry	
4.	James Otieno	Local Poultry	
5.	John Odero Alum	Local Poultry	
6.	Alfred O. Ochuodho	Poultry, sweet potatoes	
7.	Charles O. Muoda	Local Poultry	
8.	Charles Owino Kiadha	Local Poultry	
9.	Samson Otute	Local Poultry	
10.	Rev. Bishop Odhuno	Local Poultry	
11.	Joseph Odhiambo	Local Poultry	
12.	Elly Oyanda	Local goat	
13.	Omanda Okumu	Local Poultry	
14.	Martin Onyango	Local Poultry	
15.	Christopher Otieno	Local Poultry	
16.	S. Osese	Local Poultry	

17.	Moses Oyanda	Local Poultry	
18.	George Okoth	Local Poultry	
19.	Agaga Opiyo	Local Poultry	
20.	Dismas O. Agaga	Local Poultry	
21.	Martin Owino	Local Poultry, sweet potatoes	
22.	Domnicus Asimba	Local Poultry	
23.	Isaya Okall	Local Poultry	
24.	Martin Ajwang	Local Poultry	
25.	Moses Okuku	Local Poultry	
26.	Barrack Omoja Odhiambo	Local Poultry	
27.	Joseph Orwa Ojowi	Local Poultry	
28.	John Ogola Oyayo	Local Poultry	
29.	George Ochieng Ogege	Local Poultry	
30.	Rosalina Odundo	Local Poultry	
31.	Teresa Aoko	Local Poultry	
32.	Pesila Aoko	Local Poultry	
33.	Millicent Anyango	Local Poultry	
34.	Agnes Akinyi	Local Poultry	
35.	Floice Awuor	Local Poultry	
36.	Teresa Akumu	Local Poultry	
37.	Lucy Aketch	Local Poultry	
38.	Olivia Atieno	Local Poultry	
39.	Rose Odete	Local Poultry	
40.	Consla Muga	Local Poultry	
41.	Millicent Pundo	Local Poultry	
42.	Rose Agaga	Local Poultry	
43.	Syprosa Atieno	Local Poultry	
44.	Mary Atieno	Local Poultry	
45.	Roselyne Agaga	Local Poultry	
46.	Carren Auma	Local Poultry	

47.	Caroline Awino	Local Poultry	
48.	Monica Chiama	Local Poultry	
49.	Angelina Ajwang	Local Poultry	
50.	Catherine Anyango	Local Poultry	
51.	Silina Ogege	Local Poultry	
52.	Joswah Otuoma	Local Poultry	
53.	Odengi Martin Otieno	KAPAP/Homabay	P. O. Box 681, Homabay
54.	Ongati Washington	DGSDO Homabay	P. O. Box 75, Homabay
55.	Grace A. Otieno	DFO Office Homabay	P. O. Box 96, Homabay
56.	George Genga	D/DL	P. O. Box 656, Homabay
57.	Kagunza Benard	D/DAO	P. O. Box 71, Homabay
58.	Isaac Simiyu	OIC ATAC/ Homabay	P. O. Box 71, Homabay
59.	Jacob Muga	DCO Crops	P. O. Box 4, Homabay
60.	Vincent Ouno	KWS	P. O. Box 420, Homabay
61.	Pius Otila	Local Poultry	
62.	Julius Otute	Local Poultry	
63.	Jared Otieno	Local Poultry	
64.	Bethelemao Ogege	Local Poultry	
65.	Fredrick A. Wambugu	Local Poultry	
66.	Dorothy Kagaga	Local Poultry	
67.	Millicent Odhiambo	Local Poultry	
68.	Julius Omollo	Local Poultry	
69.	Damarice Atieno	Local Poultry	
70.	Molline Auma	Local Poultry	
71.	Hellen Odhiambo	Local Poultry	

Nakuru District : 9th October, 2008

No.	Name	Organisation	Address
2.	Penina Gichuru	M &EO, RSUNKU	P. O. Box 3799, Nakuru
3.	Fredrick Lagat	Rep. P.D.V.S.R.V.P	P. O. Box 1791, Nakuru
4.	S. M. Karanja	MOA	P. O. Box 1544, Nakuru
5.	John Mbugua	Dairy goat CIG - Gilgil	P. O. Box 12674, Nakuru
6.	P. M. Kimani	KAPAP RSU Coordinator	P. O. Box 3799, Nakuru
7.	Everlyn Alhaji	GESPF Gilgil	P. O. Box 2228, Nakuru
8.	Anne Kagiri	Min. of Water & Irrigation, District Irrigation Officer, Nakuru	P. O. Box 15543, Nakuru
Kirima Self Help Group:Gilgil – Nakuru			
No.	Name	Organisation	Address
1.	Joseph Mbuthia	Wood lot	P. O. Box 41, Gilgil
2.	Zachary Mathenge	Wood lot	P. O. Box 41, Gilgil
3.	Peter Waweru	Wood lot	P. O. Box 41, Gilgil
4.	Samuel Mwaura	Wood lot	P. O. Box 41, Gilgil
5.	Joseph Mutua	Wood lot	P. O. Box 41, Gilgil
6.	Mary Mugure	Wood lot	P. O. Box 41, Gilgil
7.	Eunice Waithira	Wood lot	P. O. Box 41, Gilgil
8.	Jacinta Waithira	Wood lot	P. O. Box 41, Gilgil
9.	Beatrice Waithira	Wood lot	P. O. Box 41, Gilgil
10.	Beth Njeri	Wood lot	P. O. Box 41, Gilgil
11.	Peter Ng'ang'a	Wood lot	P. O. Box 41, Gilgil
12.	John Maingi	Wood lot	P. O. Box 41, Gilgil
13.	Mwangi Muturi	Wood lot	P. O. Box 41, Gilgil
14.	John Maraa	Wood lot	P. O. Box 41, Gilgil
15.	Isaac Kareru	Wood lot	P. O. Box 41, Gilgil
16.	Millicent Njoki	Wood lot	P. O. Box 41, Gilgil
17.	Lucy Njoki	Wood lot	P. O. Box 41, Gilgil

Kakamega District: 14th October 2008

No.	Name	Organization/CIG	Designation
1.	Ernest Shisanya	MOA PDA's Office	PMEO
2.	Mildred Irungu	MOA PDA's Office	PMEO
3.	Francis M. Mutsotso	Farmers forum	Chairman
4.	David N. S. Cheruo	MOLD DVO's Office	DDVO
5.	Meshack Atonya	PMO's Office	SCO
6.	James Mahaja	MOFD	DFO
7.	Antony Saisi Aura	NEMA	DEO
8.	Mochama Onsongo Charles	KAPAP-RSU Kakamega	M & EO
9.	Juma A. Mohamed	Ministry of water & Irrigation Department	Supt
10.	Libaisi Judith	KENFAP	Provincial Coordinator
11.	Zip Mugonyi	MOA – PDA's	D/PDA
12.	Ignatius K. Ateya	WKCDD/FMP	DPC
13.	Alphonse Opinya	MOA – DAO's Office	Kakamega Central

Makueni District: 17th October 2008

No.	Name	Organization/CIG	Address
3.	Kithome Kilaka	RSU - MGEO	P. O. Box 394, Makueni
4.	Daniel K. Musila	DASO - Kee	P. O. Box 4, Kola
5.	Stephen W. Kitung'a	DEO/NEMA	P. O. Box 301, Makueni
6.	Rodah Mulili	DCO - Makueni	P. O. Box 227, Makueni
7.	Simon Mwangi	DAO	P. O. Box 42, Makueni
8.	Miriam Muli	SP KAPAP	P. O. Box 59, Kathonzweni
9.	Samuel Mbithi	SPF (Kathonzweni)	0736 204 71

10.	B. N. Muthoka	D/DLPO (Makueni)	P. O. Box 226, Makueni
11.	Mutisya K. Kimuli	RSU - Makueni	P. O. Box 394-90300/0727967002
12.	Patrick Mateng'e	BISEP	P. O. Box 258-90300/0734 761024
13.	Veronica Ndetu	DDAO	P. O. Box 1 Nzaisi/0721851102
14.	Peter Murangangi	LO Wote	P. O. Box 233, Wote / 0734 862631
15.	David Kilonzo	Farmer	P. O. Box 4, Kola
16.	Kamau Evanson M.	SP Bee/DLEO –kee Division	P. O. Box 4, Kola
17.	Daniel Matolo	Beekeeper	P. O. Box 54, Kola
18.	John Makau	Beekeeper	P. O. Box 4, Kola
19.	Maluku Mwangangi	Beekeeper	P. O. Box 4, Kola
20.	Peter Mhange	Beekeeper	P. O. Box 4, Kola / 0713351140
21.	Simon Yambu Kulikya	Beekeeper	P. O. Box 54, Kola
22.	Peter Musembi		P. O. Box 4, Kola / 0733498313