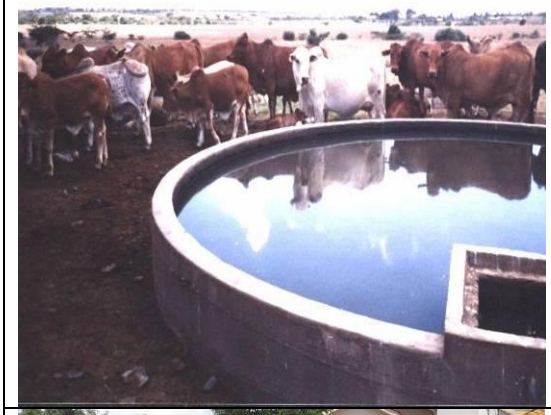
PROPONENT: AGRICULTURAL SECTOR DEVELOPMENT SUPPORT PROGRAMME

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK AND FISHERIES
STATE DEPARTMENT OF AGRICULTURE

DRAFT STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) OF AGRICULTURAL SECTOR DEVELOPMENT SUPPORT PROGRAMME (ASDSP)



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DECLARATION

This Strategic Environmental Assessment (SEA) Report was prepared by *Ecolife Consulting* Ltd. of Box 45952-00100, Nairobi, Kenya. The SEA Report is an outcome of data collection, stakeholder consultation through a series of seven seminar workshops held in all major agro-ecological zones of Kenya and also representing all the 47 administrative county governments of Kenya.

THE SEA REPORT WAS FINANCED BY THE GOK/ SIDA AND IS PRESENTED BY THE CONSULTANT ON BEHALF OF THE STATE DEPARTMENT OF AGRICULTURE. IT DOES NOT NECESSARILY REFLECT THE OPINION OF THE STATE DEPARTMENT OF AGRICULTURE OR SIDA.

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This Strategic Environmental Assessment (SEA) Report was commissioned by ourselves as the programme proponent.

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For: Agricultural Sector Development Support Programme (ASDSP)

SEA BUDGET

The NEMA fee for the SEA is KSH 1,000,000 (Say Kenya shillings one million only).

SUMMARY OF PARTICULARS

Title of the Report:	**DRAFT STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) REPORT FOR NATIONAL VALUE CHAIN DEVELOPMENT OF THE ASDSP**
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Type of Project:	**DRAFT SEA REPORT**
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Key officers from Ministry of Agriculture, Agricultural Sector Development Support Programme (ASDSP) Swedish Development Agency (SIDA), National Environment Management Authority (NEMA), Ecolife Consulting Ltd and other National participants during the validation workshop on 22nd October, 2014

LIST OF ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AGMARK	Agricultural Market Development Trust
AIDS	Acquired immunodeficiency syndrome
AIRC	Agriculture Information Resource Centre
ALEEF	Agriculture and Livestock Enterprise Enhancement Fund
ASAL	Arid and Semi-Arid Lands
ASCU	Agriculture Sector Coordinating Unit
ASDS	Agricultural Sector Development Strategy 2010–2020
ASDSP	Agricultural Sector Development Support Programme
ASDSP-SC	ASDSP Steering Committee
ASPD	Agricultural Sector Development Programme
ASPS	Agriculture Sector Support Programme
ATC	Agricultural Training Centre
BPEO	Best Practicable Environmental Option
BPFA	Beijing Platform for Action
CAADP	Comprehensive Africa Agriculture Development Programme
CAP	Community Action Plan
CBO	Community-based organizations
CC	Climate change
CCU	ASDSP County Coordinating Unit
CGIAR	Consultative Group for International Agricultural Research
CIG	ASDS Common Interest Group
CM	ASDS Coordination Mechanism
CRC	Convention on the Rights of the Child
CSC	ASDS County Steering Committee
DANIDA	Danish International Development Agency
DCU	District Coordination Unit
DDC	District Development Committee
DFID	Department for International Development
ECA	Eastern and Central Africa
EEM	Environmental Effects Monitoring
EEMS	Environmental Emissions Monitoring System
EEZ	Exclusive Economic Zone(s)
EMCA	Environmental Management and Coordination
KCC	Kenya Cooperative Creameries
KEFRI	Kenya Forest Research Institute
KEMFRI	Kenya Marine and Fisheries Research Institute
KENADA	Kenya National Agro-dealers Association
KENAO	Kenya National Audit Office
KENFAP	Kenya Federation of Agricultural Producers
KEPHIS	Kenya Plant Health Inspectorate Service
KEPSA	Kenya Private Sector Alliance
KMFRI	Kenya Marine and Fisheries Research Institute
KWS	Kenya Wildlife Services
KES	Kenyan shilling
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KJAS	Kenya Joint Assistance Strategy
KNFC	Kenya National Federation of Cooperatives
LATF	Local Authorities Trust Fund
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MEA	Millennium Ecosystem Assessment
MIS	Management Information System
MOAL& F	Ministry of Agriculture, Livestock & Fisheries
MoLD	Ministry of Livestock Development
MoSPND	Ministry of State for Planning, National Development
MOU	Memorandum of Understanding
MTIP	Medium-Term Investment Plan
NAAIP	National Accelerated Agriculture Inputs Programme
NAEP	National Agriculture Extension Policy
NALEP	National Agricultural and Livestock Extension Programme
NASEP	National Agriculture Sector extension Plan
NASEP-IF	National Agricultural Sector Extension Policy Implementation Framework
NBA	National Business Agenda
NCCRS	National Climate Change Response Strategy
NEMA	National Environment Management Authority
NESC	National Economic and Social Council
NGO	Non-governmental organization

	Act, 1999
EMP	Environmental Management Plan
EMS	Environmental Management System
ERS	Economic Recovery Strategy for Wealth and Employment Creation
EU	European Union
FAO	Food and Agriculture Organisation
FY	Financial Year
GDP	Gross Development Product
GHG	Green-house Gases
GHG	Greenhouse Gases
GIZ	German International Cooperation
GoK	Government of Kenya
HCDA	Horticultural Crops Development Authority
HIV	Human immunodeficiency virus
HSE	Health, Safety & Environment
IARC	International Agricultural Research Centre
ICC	ASDS Inter-ministerial Coordinating Committee
ICC	Inter-Ministerial Coordination Committee
ICIPE	International Centre for Insect Physiology and Ecology
ICPAC	IGAD Climate Protection and Applications Centre
ICRAF	World Agro-Forestry Centre
ICRISAT	International Crop Research Institute for Semiarid Tropics
ICT	Information and communication technology
IFAA	Innovation Fund for Agriculture and Agribusiness
IFAD	International Fund for Agricultural Development
IFR	Internal Financial Reports
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
IPS	Institutional Performance Study
JICA	Japan International Cooperation Agency
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KABSP	Kenya Agricultural Biotechnology Support
NIMES	National Monitoring and Evaluation System
NPS	ASDSP National Programme Secretariat
NPS	National Programme Secretariat
NRM	Natural Resource Management
NSWCP	National Soil and Water Conservation Programme
PCU	Programme Coordination Unit
PES	Payment for ecosystem services
PPP	public–private partnership
PSDA	Private Sector Development in Agriculture
RAM	Review aid memoire
SACCO	Savings and credit cooperative societies
SC	ASDSP Steering Committee
SIDA	Swedish International Development Cooperation Agency
SNV	Netherlands Development Organisation
SRA	Strategy for Revitalizing Agriculture
SWAp	Sector-wide approach
SWG	Sector working groups
TA	Technical Assistance
TaNRMP	Upper Tana Catchment Natural Resources Management Project
TAPRA	Tegemeo Agricultural Policy Research and Analysis Programme
TC	ASDS Technical Committee
TF	Task force
TNA	Training needs assessment
TWG	ASDS Thematic Working Group
UDHR	Universal Declaration of Human Rights
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States dollar
VC	Value chain
VCG	Value chain group
WB	World Bank

	Programme
KAPAP	Kenya Agriculture Production Programme
KARI	Kenya Agricultural Research Institute
KASP	Kenya Agro-dealer Strengthening Programme
WFP	World Food Programme

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Background – the Agriculture sector and the Agriculture Sector Development support Programme

Agriculture plays a significant role in Kenya's economy. The sector directly contributes 26 per cent of the GDP and another 25 per cent indirectly. It supplies the manufacturing sector with raw materials and generates tax revenue and foreign exchange that support the rest of the economy. The sector employs over 40 per cent of the total population of employed persons in the country and over 70 per cent of the rural population. Tea, fresh flowers, coffee, sisal, cotton, fruits and vegetables are important cash crops and major foreign exchange earner. Other important agricultural commodities include dairy, maize, sugarcane and a wide range of vegetables, and livestock particularly in the arid and semi-arid lands which provide quality beef products.

The Agricultural Sector Development Support Programme (ASDSP) is a framework programme developed between the Kenyan and the Swedish governments to operationalise the Agricultural Sector Development Strategy (ASDS). The overall goal of the ASDSP is "to support the transformation of Kenya's agricultural sector into an innovative, commercially oriented, competitive and modern industry that will contribute to poverty reduction and improved food security in rural and urban Kenya."

The development objectives for the programme are: "increased and equitable incomes, employment and improved food security of the target groups as a result of improved production and productivity in the rural smallholder farm and off farm sector." To achieve this objective, ASDSP has three mutually dependent and closely interlinked components as follows:-

Component one - deals with Sector Wide Coordination of the ASDSP activities,
Component two - focuses on Strengthening Environmental Resilience and Social Inclusion of Value Chains while Component three - deals with Value Chain Development. The main focus of the SEA was the latter component that is - value chain development which aims at an **equitable commercialization of the agricultural sector** as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups. This will be achieved through identification and support of competitive value chains that will generate sustained pro-poor economic growth and improve rural and urban livelihoods. The value chain component it is expected will apply an integrated approach comprising five inter-related sub components:

1. Improving horizontal and vertical linkages in value chains (AVCs) to generate equitable employment, ensure food security, and increased incomes.
2. Improving equitable market access.
3. Improving access to financial services and crop and livestock insurance products for men and women, youth and vulnerable groups.
4. Strengthening value chain organizations.
5. Identifying promising products for new or existing value chains for analysis and promotion, and eventual pilot projects.

Methodology
The overall scope of this Strategic Environmental Assessment (SEA) was to identify, describe and assess at the strategic level the likely significant environmental and socio-economic challenges, considerations and effects of implementing the Agricultural Sector Development Support Programme (ASDSP) with regard to the environmental and socio-economic consequences of the Value Chain Development and provide recommendations to address the issues identified. The SEA analysed the relevant information for the planned

activities before, during and after implementation of ASDSP. This was done through series of workshops, field visits and research from relevant documents. The information analyzed should help to ensure that environmental and socio-economic considerations are appropriately integrated into the programme, its operational plans and monitoring processes.

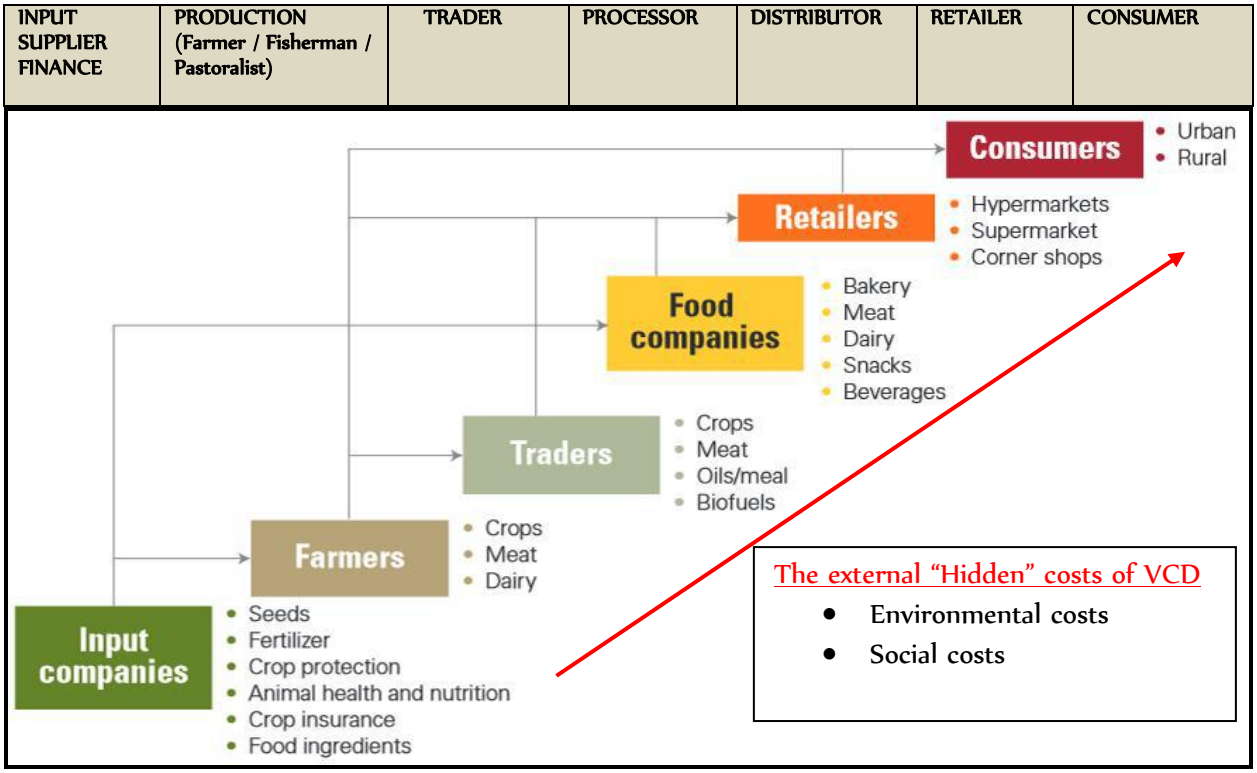
For the practitioners of value chain development, it is important to consider what is required as **Best Practices in Value chain Development**. These includes:-

- Scalable – can it be blown from small scale chain to large scale and what will be required for the process?
- Financial benefits, Risk – what are the financial implications of the value chain?
- What innovations are required to make the value chain more responsive?
- What are the implications of human capital development in terms of employment and skills?
- What are the Environmental Risks and Benefits of the existing value chain and how these can be mitigated?
- Can the value chain be made to have more significant multi-stakeholder involvement in chain development?
- What are the distinctive areas for intermeDairy institutional interventions and in what format?
- Does the chain value have significant/unique worker or producer involvement in the business model?
- What are the indicators to assess success at each level of the chain?
- What is the geographic span of the value chain and can this be extended?
- Are there public policies that get in the way of the chain, or if changed may help it grow?

Environmental and Social Considerations in VCD

Once the above considerations were identified, it was important to consider the other factors which are often not obvious to notice until many a times when it's too late. These are the **environmental and social** impacts that may arise and can be identified by:-

- Examining the entire project value chain cycle from production to consumer as shown in the diagram



- understanding of local environmental constraints in VC,
- available natural resources and management issues that impact on and are impacted by VC,
- assessment of VC impacts on health, biodiversity and natural resources;
- life cycle VC assessment (from **"cradle to grave"**) to eliminate waste and emissions at source especially in the processing component of value chain

The purpose of the above considerations was to:-

1. Increase socio-economic benefits
2. Reduce environmental risks,

Hence:

- ✓ the need to enhance terms of stakeholder participation
- ✓ For upgrading particularly for 'upstream' chain actors - since they are clossr to production where most impacts are expected

Value chain development environmental risks

We took note that Value Chains may affect the environment in various forms for instance, increase in producer prices may induce an intensified use of land, resulting in soil erosion, deforestation, drainage of wetlands for agriculture, loss of biodiversity, loss of genetic pool, habitat loss and Green House Gases emissions into the atmosphere hence climate change. Higher quality standards imposed by retailers may also lead to an increased use of pesticides causing extinction of vital pollinators, water pollution in lakes and aquifers and health problems to species and people. Conversely, the adoption of **Good Agricultural Practices (GAP)** could lead to **competitive organic agriculture** and increased soil fertility, clean air, healthy biodiversity, sustainable aquifers and quality human health,

Climate Change

Value Chain Development have implications on climate change. Climate change is being manifested in many ways including frequent weather disasters including, variability, droughts and floods. This leads to loss as seasonal lengths becomes unpredictable. This may lead to poor harvests, damage of crops and even lack of adequate time to dry seeds after harvest. Climate may affect agriculture value chain in many other ways, for example, Greenhouse Gases (GHG) and other environmental impacts in VCs may emanate from:-

- production,
- processing,
- transportation,
- storage,
- consumption,

A good case example is the **Green Revolution** in agriculture **in Asia and South America.** Its benefits were enormous in eliminating hunger in the two continents where it took root, it entailed the following innovations:-

- Irrigation – dams were constructed to supply water
- Chemical fertilisers were used extensively to boost agriculture
- Monoculture became the norm to enhance economies of scale
- Pesticides were used to protect yield
- Wetlands were "reclaimed for farming"
- Machinery including combine harvesters were used to reduce labour costs
- Extensive use of fossil fuels in processing, fertilizer manufacture and transport

Environmental repercussions, for instance:-

- ✓ Pollution of aquifers – surface fresh water, ground water resource
- ✓ Over-abstraction of aquifers beyond the recharge rate
- ✓ Decline of friendly insects including pollinators particularly bees
- ✓ Climate change – due to extensive burning of fossil fuels in combine harvesters, tractors and food processing industries and in transport

- ✓ Declining biodiversity and gene pool

In implementing value chain development in ASDSP we want to avoid or minimize the environmental consequences as associated with the green revolution in agriculture mentioned earlier.

Social Issues in Value Chain

The socio-cultural issues were considered. These include:-

- ✓ Incorporation of gender equity into all elements of the ASDSP and projects;
- ✓ Enhancing strengths in gender differences to reduce poverty and protect the environment;
- ✓ Holistic marketing activities that recognize the actors
- ✓ Cross-cutting issues of governance, Labour and HIV/Aids
- ✓ Climate change issues and how they affect the gender
- ✓ Adaptation issues and climate resilience programmes in VC and gender
- ✓ Poverty and food security

This SEA Value Chain Analysis has therefore attempted to handle these complex relationships through the analysis of:

- Environmental aspects of value chains as follows:-
    a) **the natural resource base and climate which are the basis for producers participating in a value chain and**
    b) **the impacts that production or processing have on the resource base and its surroundings.**

In analyzing environmental impacts and management problems in the context of value chains, it is useful to distinguish between two types of processes, based on the scale at which they operate:

a) **Local Processes,**
b) **National Processes**
c) **Global Processes (Trans-boundary)**

1. **Local processes** related to VC can affect the management and use of local natural resources that is, land and water and may have local environmental impacts for instance:
    - biodiversity degradation,
    - soil degradation
    - soil and water pollution (e.g. from pesticides) and
    - unsustainable use of water resources (e.g. in irrigation schemes).

2. **National policies** on agriculture and natural resources may also affect resource degradation both at local and national levels for instance, sometimes national development policies conflict with local resource management and hence fuel conflicts. Sometimes government pressure to produce for export may negatively impact local natural resource management and lead to environmental and social impacts. These are the reasons why we reviewed the relevant national policies and legal framework.

3. **Trans-boundary - processes** that transgress ecosystems and national boundaries and therefore have impacts and must be managed at a much larger scale. Key components with environmental impacts and management problems of trans-boundary implications are:
    - green house gas emissions (GHG),
    - acidification of precipitation
    - catchment degradation of shared river systems
    - eutrophication,

Kenya has ratified most of the key international conventions and protocols relevant to the conservation of natural resources as discussed in the SEA report.

Land use change

All in all, the value chain development may result in land use change – the rate of change is alarming with wetland being taken over by agriculture, urban land use taking over agricultural land and wetlands in dry lands being encroached for settlement and cultivation. These makes adaptations to climate change difficult, reduces ecosystem resilience, biodiversity health, genetic diversity, soil and water quality, and landscape quality.

The land use transformations may also decrease food security. Forests are being depleted at alarming rate – climate change disaster may now be unavoidable and we may have to focus on climate change adaptation. The value chain have to be helped to follow the resilience pathway which enable the beneficiary to bounce back either better of at least as they were after the climate shock. Nutrient cycles are slowing down– due to high pressure on environmental systems - critical nutrient recycling is breaking down – we no longer throw waste to nature and expect it to be recycled and therefore as we develop value chains, consideration of environmental health is vital.

The following summarises the scope of environmental issues discussed in the value chain development in ASDSP

Environmental and Social Issues of Value Chain development Activities

Biological	Physical	Hydrological	Pedological	Socio-Economic
• Habitat loss • Deforestation • Loss of biodiversity • Loss genetic pool • Species invasion • Reduce nutrient circulation	• Pollution • Energy • **Climate Change** • Land use change	• Catchment degradation • Over abstraction of water resources • Pollution of aquifers (sea, lakes, rivers and ground water)	• Salinization • Leaching • Soil erosion • Compaction • Pollution	• Livelihoods changes • Social institutions • Employment • Income change • Cultural impacts • Social amenities • Gender equity • Health factors • Food security • Education • Shelter

Effects of value chain development on nature and livelihoods

Increases in producer prices may induce an intensified use of land, resulting in:

- ✓ Soil erosion,
- ✓ Deforestation,
- ✓ Habitat lose,
- ✓ Draining of wetlands for agric.
- ✓ GHG emissions
- ✓ Pollution of surface and sub-surface aquifers
- ✓ Eutrophication
- ✓ Higher quality standards imposed by retailers may lead to increased use of pesticides, causing water pollution in lakes & aquifers
- ✓ Use of more pesticides may lead to depletion of bee pollinators hence reduction in yields
- ✓ More pesticides increases chances of pest resistance and mutation
- ✓ Health problems among workers and consumers

Recommendations

The SEA recommends sustainable agriculture which includes:

- ➢ **Adoption of Good Agricultural Practices**
- ➢ **Competitive organic agriculture**
- ➢ **Integrated agriculture – recycling and reuse of waste**
- ➢ **Enhanced soil fertility from organic compost**
- ➢ **Integrated pest management**

- **Water conservation**
- **Enhance plant & livestock biodiversity,**
- **Sustainable aquifers**
- **Climate change adaptations**
- **Stakeholder involvement**
- **Social inclusion of vulnerable groups in society**
- **Inclusion of cross-cutting issues in VCD**

Stakeholder Engagement

Stakeholders participation are vital in SEA process. To achieve this objective, the client together with the consultant organized a total of 8 workshops (seven regional workshops and one validation workshop) with representatives from the counties in each region. Each of the counties stakeholders (which included Natural Resource Management officers, NEMA officers, ASDSP officers, WRMA, Private conservation bodies, among others) discussed the Value Chain issues in various focus crops in their counties and provided the environmental issues affecting the value chain and suggested mitigation measures.

The Policy, Legal, and Institutional Framework in each value chain development were discussed with stakeholders including direct, indirect and cumulative environmental impacts for each value chain and recommendations provided thereto. The detailed analyses are found in the technical appendices of this report.

Summary of Environmental Management and Monitoring Plan

The projects that require individual EIA's in VCD and the issues involved are provided together with the suggested mitigation measures as follows:

	PRODUCTION		
	Activity	**Issue**	**Recommendation**
AGRICULTURE	• Large Scale Irrigation Schemes • Use of heavy Machinery in tillage • Chemicals Application and Disposal • Pests Management Methods • Possible introduction of hybrids varieties of Plants & cultivars • Possibility of introducing Genetically Modified Organisms (GMO's) • Rainfed agriculture	• Inadequate water supply • Depletion of aquifers • Habitat loss • Soil erosion • Emission of Greenhouse Gases (GHS) • Pests • Spraying may affect non-targeted insects • Chemical pollution of surface and ground water resources • Eutrophication • Deforestation • Loss of biodiversity • Species invasion • Salinization • Loss of local gene pool • Climate change • Dry spells -drought	• Water conservation irrigation methods • Wetlands conservation • Forests conservation, re-afforestation • Practice agro-forestry • Protect floral & faunal biodiversity • Practice Integrated Pest Management (IPM) • Use energy conservation & renewable energy • Reduce Greenhouse gases emissions • Conserve indigenous varieties • Control runoff from farms • Ensure all precautions are taken before introduction of hybrids • Involve Kenya Biosafety Authority before Introduction of GMOs • If new varieties have to be introduced rigorous procedures must be carried out involving KARI, KEPHIS and other stakeholders • Water conservation • Drought resistance varieties • Drought escaping varieties • Drought Early Warning Information System (EWS)
LIVESTOCK (CATTLE & BEEF SHOATS)	• Livestock schemes • Livestock Dips • Livestock Ranching • Chemicals Application and Disposal • Use of vet drugs	• Soil degradation • Desertification • Over application of spray chemicals • Poor disposal of spray chemicals • Continuous use of chemicals – resistance & mutation • Improper disposal of vet materials i.e drugs, syringes and empties • Climate change • Poor administration of drugs • Gene pool depletion	• Use ranching in pastoralism areas • Emphasize on livestock quality rather than numbers • Use spray chemicals as per vet prescription • Dispose chemicals as per manufacturer's directions • Reduce Greenhouse gases emissions • Use of spray chemicals and vet drugs as prescribed by Vets • Efficient use of animal waste so as to reduce green house gases emissions

	DAIRY	• Introduction of Exotic Breeds of Livestock • Chemicals Application and Disposal	• Gene pool depletion • Pollution of water & soil resources • Climate change	• Conserve indigenous breeds • Dispose chemicals as per manufacturer's direction • Use chemicals as per vet prescription
	POULTRY – Local Chicken	• Large Scale Poultry Schemes • Introduction of Exotic breeds of Poultry • Chemicals Application and Disposal	• Gene pool depletion • Spread of poultry diseases • Diseases resistance • Indigenous chicken housing units • Inbreeding • Inconsistent feed quality at household level • Waste disposal (especially dead birds) • High death rates at chick rates • Low growth rate	• Practice organic agriculture • Use biogas for energy source **Local Chicken** • Follow Chicken husbandry principles on specifications of the units • Proper selection of the breeding stock • Home-made rations • Continuous capacity building • Encourage post mortem examination • Safe disposal of the dead birds • Research for fast maturing indigenous varieties • Timely vaccination
	BEE KEEPING	• Large scale apiary projects • Introduction of exotic bees • Up-scaling use of bee houses and modern bee hives	• Bee attacks • Bee phobia • Colony Collapse Syndrome • Low numbers bee colony • Large scale tree cutting	• Ensure beehives are in secure place from public & animals • Do not introduce exotic bees without authority • Capacity building colony management • Planning and growing more trees
FISHERIES	• Large Scale Fishing Schemes/Projects • Fishing zones, methods and techniques' • Establishment of landing sites		• Depletion of fisheries • Destruction of breeding grounds • Straddling of non-targeted species • Pollution of fisheries • Weak law enforcement	• Fishing as per authorities regulations • Use nets as per ministry direction • No fishing without license • Return non-targeted species back to water • Put fishing moratorium whenever fishing stocks are threatened • protection of breeding grounds • Strengthen surveillance and law enforcement • National Aquaculture policy. • Use of water harvesting techniques
	• Large Scale Aquaculture Programmes		• Pollution • Depletion of water aquifers • Loss of water by evaporation	• Use aquaculture as per the ministry's direction • Conduct EIA before development of aquaculture in dry lands

		PROCESSOR		
		Activity	**Issues**	**Mitigation**
AGRICULTURE		• Bulk Grain processing & Storage Facilities • Animal Feed Milling • Chemicals processing & storage • Waste Management • Fruit Processing Plants	• Grain weevils attack • Grain contamination (including aflatoxin) • Animal Feeds contamination • Chemicals contamination • Poor waste management • Poor post harvest handling	• Treatment of grain • Ensure safety of grain from contamination • Use safe packaging • High standards of hygiene • Good practices in post harvest handling
LIVESTOCK	BEEF (CATTLE & SHOATS)	• Abattoir • Slaughter Houses • Waste Management • Tanneries • Transportation of animal and animal products • Disposal of rejected milk	• Pollution of water resources • Soil pollution • Air pollution	• Locate abattoirs away from water sources • Neutralize tanneries smells • Do not dispose waste in rivers • Recycle abattoir waste • Animal welfare • Environmental conservation • Enforcement of effective animal welfare policies • Use of appropriate means of transport • Reduced motorized transportation
	DAIRY	• Milk Processing Plants • Packaging Plants • Dairy Products Processing Plants (Cheese, Ice Cream ...) • Chemicals manufacture & Disposal • Waste Management • Transportation of dairy products	• Waste management • Chemicals waste management • Trans • Disposal of waste milk	• Ensure safe packaging • Reduce use of plastics in packaging • Segregate waste • Recycle waste • Dispose milk waste safely
	POULTRY	• Poultry Slaughter Houses • Waste Management	• Poor handling before slaughter	• Legislations be established and existing ones be harmonized

	BEE KEEPING	• Large scale honey processing • Extraction of other bee products • Honey products packaging	• adulteration • Reduced the colony population • Waste disposal management	• Capacity building in honey processing • Capacity building on colony management • Sorting and Recycle of packaging material
FISHERIES		• Fish Processing Plants • Waste Management	• Waste management • Pollution	• Ensure fish processing plants are away from air ports and air routes • Ensure waste is recycled

	DISTRIBUTOR			
	Activity		**Issues**	**Mitigation**
AGRICULTURE		• Bulk Grain Storage Facilities • Animal Feeds Distribution • Chemicals Distribution	• Insufficient storage facilities • Grain weevils attack • Pests mutation • Pests resistance • Traffic accidents • Climate change	• Strategic transfer to other stations • Ensure safe storage • Ensure traffic control • Conserve energy
LIVESTOCK	BEEF (CATTLE & SHOATS)	• Meat Distribution • Skin & hides processing • Transportation	• Waste Management • Tanneries foul smell • Air pollution	• Ensure safe traffic control • Neutralize foul smell from tanneries • Reduced motorized transportation
	DAIRY	• Milk Distribution • Dairy Products distribution (Cheese, Ice Cream ...) • Chemicals storage, distribution & Disposal • Waste Management	• Traffic accidents • Disposal of expired products • Contamination of chemicals • Waste management • Climate change	**Local Chicken** • Group marketing (cooperatives) • KEBS guidelines be adhered to

	DISTRIBUTOR		
	Activity	**Issues**	**Mitigation**
	POULTRY • Poultry Slaughter Houses • Waste Management	• Poor marketing channels Packaging, • Labeling and branding	
	BEE KEEPING • Honey distribution		• Ensure safety guarantee of products by established Authorities • Sorting and Recycle of packaging material • Co-operative society • Carbon credit
FISHERIES	• Fish Products Distribution • Waste Management	• Contamination of fish • Waste management • Climate change	• Ensure prescribed food safety guidelines are followed • Recycle fish waste

SOCIO-ECONOMIC CONSIDERATIONS

Issue	Recommendations
• Marginalization of vulnerable groups	Ensure improved livelihoods to all rather than few -participation of all stakeholders in value chain and equity in sharing production benefits
• Vulnerability of Social Institutions	strengthen social institutions through mentorship and regular community social forums
• Income distribution & Employment	Ensure fair employment policy (employment of local labour, gender consideration and vulnerable groups)in value chain development programmes
• Cultural Impacts	Ensure there are cultural safeguards in value chain development
• Social Amenities	Ensure fair distribution and access to social amenities brought by value chain
• Gender Equity	Ensure gender participation in the value chain development and benefits sharing
• Vulnerable groups	Ensure VCD promotes vulnerable groups – women, children & the disabled
• Health Factors	Ensure value chain promotes social cohesion and community health
• Food Security	Ensure VCD promotes food security by ensuring not all food produced is exported and that food crops are produced for household use
• Education	Ensure VCD promotes transfer and strengthens formal & informal education
• Shelter	Ensure VCD promotes healthy & dignified shelter for local producers

Recommendations - Strategic operational principles

The SEA has provided adequate mitigation measures in the Environmental Management and Monitoring Plan which are **sector based covering arable agriculture, livestock and fisheries**. Alternative options have also been provided including timing, sitting and technology mix. The SEA has recommended the following principles to be incorporated in value chain development. These are:-

Sustainability principle

- Integrate socio-economic and environmental considerations into the value chain.
- Every value chain must recognize that a healthy environment is the basis for sustainable development and cannot be replaced by any form of manipulation.
- A sustainable value chain development should also seek to restore lost crop biodiversity, crop gene pool and also link agriculture with the natural systems and rehabilitate those that are degraded
- There is a strong positive link between that which is in the wild and that in the farm.
- It must not violate, disrupt, or overstep ecological boundaries and limits and should commit to co-operate within them, including reducing pollution, safeguarding ecosystems, biodiversity integrity, other natural resources including air, water, soil, and biogeochemical cycles.
- It should ensure that environmental integrity is maintained before allocating resources among competing uses in the value chain.
- Value chain development should also support and respect all form of life, apply precautionary principle in development, assess the potential impacts of new technologies in VCD and innovations before they are released to the users.

The Equity and Inclusion Principle in VCD

- Value chain development in agriculture should reinforce equity between people of same generation (inter-generational equity and people of different generations (intra-generational equity).
- What we do in our development should not widen the difference between the poor and the rich. If we protect the environment, the basic requirements of life will be available, that is – clean air, water and food for free from the environment

- The poor will not need to buy bottled water because the rivers will provide clean water. The forests will provide fruits and foods and hence the poor will not entirely be depending on markets.
- Value chain development should respect human rights, cultural diversity and should promote gender equity. It should recognise knowledge, skills and experience of all stakeholders and must not marginalise vulnerable groups of women, disabled and indigenous peoples' rights to land, territories and resources
- A values chain development should aim at alleviating poverty, food security and access to basic health, education, sanitation, clean water, energy and other essential services.
- Value chain development should also be based on transparency, sound science and the visible engagement of all relevant stakeholders. No groups should be marginalised from local to national and should empower all citizens (including young and old, women and men, poor and low skilled workers, indigenous peoples, ethnic minorities and local communities to participate fully at all levels from production to retail.
- It should also respect cultural values and be tolerant to religious diversity and lifestyle choices and ethics.

The Resilience Principle

A successful value chain should contribute to economic, social and environmental resilience, this includes:-

- Support of the development of social and environmental protection systems, and preparedness against and adaptation for climate change including climate related extreme events and disasters
- Creation of a universal social protection floor of vulnerable groups
- Promotion of variety of VC models relevant to different cultural, social and environmental contexts
- Consideration of indigenous local knowledge and promotion of the sharing of diverse knowledge systems in the VC transactions
- Building on local skills and capacities and developing these further to improve the VC
- Supporting sustainable, diverse economies and local livelihoods and,
- promoting systems approaches, recognising the interdependence and integrated nature of these systems, underpinned by environment, culture and economic values

The Efficiency and Sufficiency Principle in VCD

A fair and inclusive Value Chain delivers sustainable consumption and production

- It seeks to ensure prices reflect true costs incorporating social and environmental externalities
- It implements the polluter pays principle
- It supports life-cycle management, and strives for zero emission, zero waste, resource efficiency and optimal water use
- It prioritises renewable energy and renewable resources
- It seeks absolute decoupling of production and consumption from negative social and environmental impact
- It delivers sustainable lifestyles supporting a major cultural transformation
- It promotes social, economic and environmental innovation
- It gives fair rights to access intellectual property within a global legal framework

The Good Governance and Accountability Principle in VCD

- VCD should provide a framework to structure markets and production in consultation with all stakeholders and ensure constant monitoring and evaluation for sustainable progress in environmental, social and economic dimensions.
- It should also promote *common but differentiated responsibilities among stakeholders*

Conclusion

We conclude that the SEA report provides a comprehensive analysis of the issues of the ASDSP value chain development programme. It has extensively involved all the key stakeholders so that they own it as their document. The various ecological zones in Kenya from the Coast, Dry lands farming zones, the Highlands high potential areas, the Lake Basin, the Western and North Rift agricultural zone, the South Rift mixed farming area and the Northern Kenya pastoralism areas were covered with each of the area hosting a workshop for the local stakeholders. The administratively devolved levels were involved at the county level as well. The regulatory framework affecting value chains development have been provided for each stage in the value chain development and mitigation measures proposed for social, environmental and climate change impacts. A detailed Environmental Management and Monitoring plan has been provided for implementation by the various stakeholders.

1.0: INTRODUCTION TO THE SEA

1.1: Scope

The scope of this Strategic Environmental Assessment (SEA) is to identify, describe and assess at the strategic level the likely significant environmental and socio-economic challenges of implementing the Agricultural Sector Development Support Programme (ASDSP) and in particular, propose mitigation measures that may arise from implementing Value Chain Development.

The SEA evaluates the relevant activities before, during and after implementation of ASDSP and suggests appropriate ways to integrate environmental and social-economic issues of the value chain into the programme.

In brief the Scope of the SEA is as follows:-

i. To set the scope of the Environmental Assessment of the ASDSP by identifying and profiling the environmental and socio-economic issues to be taken into consideration during planning, implementation and monitoring of the programme activities
ii. To evaluate the likely significant effects on the environment of implementing the ASDSP programme.
iii. To provide recommendations, at strategic level, on how potential negative effects can be mitigated and positive effects enhanced.
iv. To provide decision makers in Kenya and SIDA the information to be integrated in decision making and implementation process of the programme.
v. To provide guidance that will aid in policy development and institutional arrangement in the Agricultural sector.

1.2: Methodology of Work

This Strategic Environmental Assessment was guided by the National Guidelines for Strategic Environmental Assessment (SEA) in Kenya (2012) developed by the National Environment Management Authority (NEMA) and the relevant national and international regulatory frameworks governing the SEA process. The SEA also evaluated the institutional setup of the ASDS in Kenya.

Furthermore the SEA's main focus was on identifying potential environmental, social and economic impacts of the proposed Agricultural Sector Development Support Programme (ASDSP) Component 3 - Value Chain Development, the significance of potential impacts identified, and recommending possible mitigation and enhancement measures for unfavorable and positive impacts respectively. The cumulative impacts along the Value Chain were also considered.

The SEA study is composed of two parts: a Scoping Study and the detailed SEA study itself. The Scoping Study was developed to determine the critical issues that need to be addressed in the SEA Study, considering the specific context in which the ASDSP is being developed and is likely to be implemented. The Scoping Study also defined the roadmap for the SEA Study. The SEA study itself provides information on the environmental and socio-economic impacts of the planned interventions at the strategic level, recommends reasonable alternatives and set out feasible measures to be adopted to prevent, reduce or offset negative environmental impacts while enhancing positive ones. .

The study entails:-

i. An identification and assessment of potential environmental consequences as a result of the interventions from the programme
ii. An analysis of strategic environmental opportunities and constraints
iii. An analysis of performance indicators
iv. An assessment of institutional structures and capacities, and of policy and regulatory framework to address environmental challenges
v. Formulation of conclusions and recommendations for-ASDSP Implementation, and improvement

1.2.1: Part I: The Scoping Study

The scoping study delivered the following results:

- Description of ASDSP overall development objectives and their relation to environmental and socio-economic concerns
- Description of the value chain development components and issues therein
- Description of the relevant institutional and legislative framework of the Agriculture sector (agriculture, land and animal resources) in general and the value chain development in particular and its interaction with other sectors like trade, Communications, industry, among others.
- Identification of key stakeholders, and their concerns with regard to environmental and social sustainability of the sector and potential implications of ASDSP implementation
- Identify, describe and assess environmental variables relevant to ASDSP
- Identification of possibilities for ASDSP to contribute to environmental sustainability vis-à-vis overall development objectives, and potential areas of counteracting development objectives from environmental sustainability perspective. Identification of ways ASDSP will enhance environment sustainability as well as negative impacts on the environment, and how these would impact on the overall development objectives
- Identify entry points for integrating environmental considerations throughout implementation of the ASDSP
- Based on key concerns identified, define the scope of the environmental baseline to be prepared, and the main sources from which the baseline will be compiled
- Description of stakeholder engagement mechanism for the SEA study
- Definition of the method and evaluation methodologies to be used in the SEA Study. Identify the spatial and temporal dimension of the study (coverage and time)
- Define a Road map for undertaking the study, including activities and indication of the time frames, and resources needed to carry out the SEA Study

Based on the Scoping findings, elements for the organisation of the main SEA study phase were identified, including the key issues that would deserve specific attention, and the baseline information required. The concept of **Key Issues** is critical to the SEA, as it allows focusing efforts and recommendations on those aspects that are really important, i.e. aspects that need to be solved to achieve a significant improvement in the environmental performance of the sector. Key Issues were prioritised based on expert judgement; findings of the scoping workshops; and determination of significance using a risk assessment framework.

1.2.2: Part II: The SEA Study

The SEA study provides the following:-

- An environmental and socioeconomic assessment of the ASDSP, value chain development. This involves the potential environmental impacts of its implementation, the degree to which it addresses the key environmental concerns of the sector, and its consistency with Kenya's environmental policies and objectives. Some elements to address include: land degradation, afforestation, waste management and social issues of gender equity and stakeholder participation
- Strategic recommendations for further actions/ possible solutions to mitigate adverse consequences from the implementation of the ASDSP
- Recommendations to the GOK for enhancement of the ASDSP environmental and socioeconomic performance, and
- The recommendations to include performance indicators, as well as possible accompanying measures to deal with identified weaknesses; notably in the areas of capacity development

The **SEA Study** phase assessed the key issues in detail and identified options to address them, i.e. options that would minimise environmental impacts and make best use of opportunities to enhance the state of the environment and the opportunities for climate change adaptation and mitigation. The analysis took into account the policy and regulatory framework, the institutional settings and the existing capacities.

The SEA Study made use of a combination of qualitative tools and methods, including:

1. Risk Analysis and Significance Rating Matrix for assessment of the potential environmental risks that may arise from project operations and identifies mitigation measures that will be implemented to reduce risk to the environment and other activities in the adversely affected areas.

    - Risk evaluation involves identifying the risk associated with an activity or incident based on probability and consequence and determining if this is acceptably low, or if management actions are required to reduce the risk to as low as reasonably practicable.

2. The Logical Framework to coincide with the existing ASDSP M&E system which based on the logical framework approach and thus includes the ASDSP logframe, impact pathway, a five year strategic work plan and associated tools for work planning and reporting.

    - The ASDSP logical framework is formulated in a brief and generic manner so as to allow it to function as reference point for interventions supported by the ASDSP directly as well as interventions by programmes that have chosen to integrate their interventions under the ASDSP framework.

2.0: DESCRIPTION OF THE PROPOSED ASDSP PROGRAMME

This section discuses the objective, purpose, and rationale of the ASDSP. It also examines alternative policy, options, and strategies, the areas and sectors affected, the proposed activities for the ASDS program and provides the implementation plan and time scale.

2.1: Objectives, Purpose and Rationale

2.1.1: Objectives

The objectives of this SEA is to identify, describe and assess at the strategic level the likely significant environmental and socio-economic challenges, considerations and effects of implementing the ASDSP with regard to the environmental and socio-economic consequences of the value chain development. The SEA provides relevant information for the planned activities before, during and after implementation of ASDSP. The information should help to ensure that environmental and socio-economic considerations are appropriately integrated into the programme, its operational plans and monitoring processes. The ASDSP has many components but the SEA focuses on Component 3 which deals with the following:-

Component 3: Value Chain Development – this supports viable, equitable and long term commercialization of the agricultural sector as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups. The major outcome areas of this Component include the following:-

- Analysis and upgrading of value chains that can generate employment, ensure food security and increase incomes for diverse actors
- Increasing equitable market access by improving rural infrastructure and other trade-related interventions in collaboration with the private sector
- Improving equitable access to financial services
- Strengthening local value chain organizations to facilitate collective and equitable agreement on and pursuit of VC development activities
- Identifying and up-scaling promising, innovative and inclusive new value chains

The *overall* programme *goal* of the ASDSP is to: "support the transformation of Kenya's agricultural sector into an innovative, commercially oriented, competitive and modern industry that will contribute to poverty reduction and improved food security in rural and urban Kenya".

2.1.2: Purpose

The programme *purpose* is to: "increase equitable income, employment and improved food security of male and female target groups as a result of improved production and productivity in the rural smallholder farm and off-farm sectors".

The programme's major outcome areas include the following:

1. Development of a transparent system for improved agricultural sector coordination and harmonization and an enabling policy and institutional environment for the realization of the ASDS
2. Strengthening of the environmental resilience and social inclusion of value chains
3. Promotion of viable and equitable commercialization of the agricultural sector through value chain development

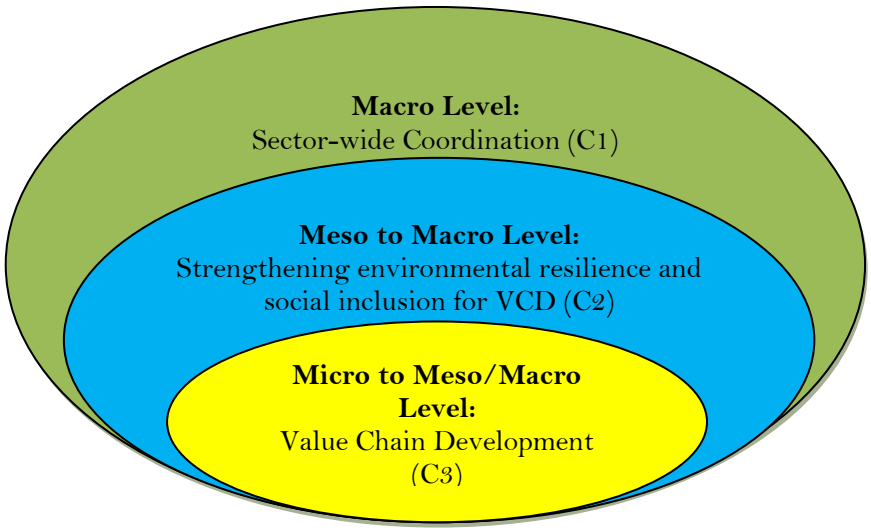
The three major outcome areas thus specifically refer to the two strategic thrusts defined for the ASDS, namely:

a) **increasing productivity, commercialization and competitiveness of agricultural commodities and enterprises, and**
b) **developing and managing key factors of production.**

More specifically, the core technical focus of the ASDSP is on commercialization, agribusiness and market development. This is based on the assumption that deepened and equitable commercialization of Kenya's agricultural sector, including at the smallholder level, will contribute to increasing agricultural production and income, enhance the sector's contribution to the overall national economy while at the same time helping to improve the availability of food in both rural and urban areas. The ASDSP will therefore work with all actors along the value chain, so as to strengthen capacities and coordination within each value chain supported under the Programme. This effort will be supported in the context of the Programme's component 3: Value Chain Development.

The Programme's components 1 and 2 can thus be seen as supporting component 3 so that it can be the engine to achieve the programme purpose. This relationship between the programme components is illustrated in Figure 1.

Figure 1: Nesting of the ASDSP Components



Though the SEA focuses on Component 3, the Programme's components 1 and 2 were developed to support component 3 so that it can be the engine to achieve the programme purpose. This relationship between the programme components is summarised below and shows the holistic nature of the ASDSP.

- **Component 1 - Sector-wide Coordination:** This Component supports an efficient, transparent and inclusive framework for realizing the ASDS through support to sector coordination and harmonisation,

and creation of an enabling policy and institutional environment for the implementation of ASDS. This is achieved through: 1) coordinated support towards sector-wide coordination; 2) capacity building of key sector institutions institutionalization of the ASDSP at the national and county levels; 3) establishment of strengthened horizontal and vertical linkages between sector institutions, 4) support to Agricultural Sector Coordination Unit (ASCU) for establishment of sector monitoring and evaluation (M&E) and information management systems, and; 5) support to the development of an enabling policy and regulatory framework for the sector.

ASCU will play a lead and facilitating role in the implementation of this component, in closs collaboration with the National Programme Secretariat (NPS). The ASDS Technical Working Groups (TWG) will provide ongoing advisory inputs to guide interventions promoted under the component.

- **Component 2 - Strengthening Environmental Resilience and Social Inclusion for VCD:** This Component supports interventions aimed at ensuring that the efforts to strengthening priority value chains in the context of Component 3 are environmentally sound and resilient to climate fluctuations, and that women, youth and economically and socially vulnerable groups are able to participate effectively in and benefitting from the improved value chains. Overall, the component therefore aims to 1) raise awareness and knowledge of the importance of environmental sustainability, NRM and the causes and effects of climate change; 2) improve access to and use of appropriate NRM and climate change technologies and services, particularly for women, youth and vulnerable groups, and; 3) improve access by women and vulnerable VC stakeholders to basic economic and social security services, with a view to position them to participate more effectively in value chain production.
  The ASDS TWGs on Environment, Sustainable Land and Natural Resources Management and Youth will play a critical role in the efforts of this component to strengthen environmental resilience and climate adaptation capacity through provision of ongoing policy and technical guidance. Similarly, other programmes active in the fields of NRM/climate change adaptation and social inclusion in agriculture are expected to play a key role in the actual implementation of interventions in the context of the component.

- **Component 3 - Value Chain Development:** This component will support the commercialization and market orientation of the agricultural sector. The main vehicle is support to the establishment/strengthening of horizontal and vertical value chain (VC) stakeholder bodies at the county and cross-county levels, VC analysis and demand-driven and stakeholder-led identification of interventions to mitigate bottlenecks for effective functioning of prioritized VCs. VCD support interventions will be implemented through operational partnerships with existing VCD support agents, including the private sector, existing programmes, Government agencies and civil society organizations (CBO). These efforts will pay special attention to ensuring that vulnerable value chain actors, men and women, will be able to participate in commercial production and marketing in the context of the prioritized value chains The ASDS TWG on Agribusiness, Marketing, and Financial Services will guide the implementation of this component.

2.1.3: Rationale

Component 1: Kenya's agricultural sector receives support from and is shaped by many actors including the Government of Kenya, bilateral and multilateral Development Partners, private institutions and NGOs. Consequently, the sector has many programmes and projects, each with a stand-alone steering committee and implementing unit. This contributes to programme duplication and overlap, multiple reporting requirements, and a waste of resources with regard to staff to oversee the sector. Furthermore, it is difficult to attribute impacts to a particular project with such a mixed scenario. The Government of Kenya and Development Partners are adopting a sector-wide approach (SWAp) in order to improve aid effectiveness in the sector as envisaged in the Paris Declaration (2005), and to align with the principles of the Kenya Joint Agricultural Strategy (KJAS). The application of SWAp will enable the sector to have a shared vision, facilitate priority setting, and provide the framework for coordinated responses to policy initiatives and the development of a harmonized M&E.

This component supports the establishment of an inclusive institutional framework for improved agricultural sector coordination and harmonisation, and an enabling policy and institutional environment for the realization of the ASDS in general, and for the realization of component 2 and component 3 outcomes more specifically.

The component is designed to enable sector institutions to contribute to and take responsibility for sector-wide coordination and implementation and thus become more effective in delivering their mandate. The design of this component has benefitted from lessons learnt of a number of programmes in the sector.

The specific outputs of the component are:

Sub-component 1:1: Sector-wide coordination and joint programming improved
Sub-component 1:2: Sector institutions and capacities strengthened
Sub-component 1:3: Linkages between key sector stakeholders improved
Sub-component 1:4: Sector-wide M&E information systems developed and supported
Sub-component 1:5: Appropriate sector-wide policies, strategies and regulations developed.

Component 2: This component is designed to ensure that the priority value chains that will be supported in the context of Component 3 are environmentally sound and resilient to climate fluctuations, and that women, youth and economically and socially vulnerable groups have access to, participate effectively in and benefit from the improved value chains.

At the macro level, this calls for support to specific policy commitments and, if necessary, policy change. At lower levels, the component aims to ensure that:

a) value chain development not only 'does no harm', but also maintain local ecosystems where possible, and

b) the resource poor and vulnerable groups are availed basic socio-economic and organisational support to enable them participate meaningfully in the value chains being developed in component 3.

The outcome of this component is strengthened environmental resilience and social inclusion of the promoted value chains. The specific outcomes of the component are:

Sub-component 2.1: Environmental resilience for value chain actors, including vulnerable groups strengthened
Sub-component 2.2: Basic socio-economic and organizational conditions that enable vulnerable groups to engage in value chain development strengthened.

Support from relevant ASDS TWGs will be solicited to provide overall guidance in the implementation of this component. Partnerships with relevant organizations and existing programmes are required to enable the realization of this component. Such partnerships will vary over time depending on the priority being addressed.

Component 3: This component will play the key role in the commercialisation of the agricultural sector by strengthening the efficiency and effectiveness of prioritized value chains and supporting smallholder producers to shift from subsistence to producing for the market. It will achieve this objective by supporting the development of inclusive value chain organisations and identification and removal of factors that constraint value chain production, processing, financing and marketing The component will also support the growth of public and private investments in production-related infrastructure and value chain production, processing and marketing, and support identification and application of innovative value chains and technologies.

In so doing, while maintaining its overall focus on enhancing the productivity and commercialization of the agricultural sector, the component will make a special effort to ensure that women, youth and other vulnerable groups are integrated in and benefit from

all stages of the value chains. This will build on the efforts pursued under component 2 to strengthen the basic social and economic conditions for these groups to engage in value chain production, processing and marketing.

This component will work with all actors along the chain, from input suppliers to final consumer. It recognizes that interventions at all levels of the chain are needed to remove inefficiencies, and the critical requirement of a strong 'end market' to pull the chain. It also recognizes the importance of ensuring an overall 'enabling environment', and efforts will therefore be made in the context of component 3 to identify the need for institutional, policy and regulatory changes which will then be addressed in the context of Component 1. ASDSP will prioritize support to value chains that offer maximum potential for the achievement of food security and equity objectives while at the same time contributing to the commercialization of the agricultural sector. While the ASDSP will adopt market-oriented approaches to value chain identification and facilitation, it will encourage participation by vulnerable groups in the value chains. This will be achieved through identifying social and gender constraints to participation along the value chains.

The component will be implemented in partnership with sector stakeholders at all levels, including in particular, relevant GoK agencies, existing VCD programmes and private sector agents. ASCU's Thematic Working Group on Agribusiness and Financial Inputs will support the implementation of this component by providing both technical and policy advice.

The outcome of the interventions in this component will be a viable, sustainable and equitable commercialisation of the agricultural sector. The specific outputs from the component are:

Sub-component 3.1: Inclusive value chain organisations developed
Sub-component 3.2: Public and private investment in value chain development increased
Sub-component 3.3: Equitable access to market increased
Sub-component 3.4: Access to affordable financial and insurance services for value chain actors improved
Sub-component 3.5: Innovative and inclusive value chains and VC technologies up-scaled and out-scaled

2.2: Analysis of Value Chain Development and their Environmental and Social Dimensions

2.2.1: The concept of value chain

The concept of **"Value Chain"** evolved from **supply chain management** and encompasses not only the **transactional relationships** along a typical business chain but also **the larger web of stakeholder relationships and the "external" social and environmental impacts of any supply chain**. In agriculture, these value chains involve **primary producers and the intermediaries that aggregate production** that is - cooperatives, individual local farmers, and perhaps other businesses downstream in the chain, like the processor, distributer and finally the retailer (Sweitzer *at al*, 2008).

All supply chain get goods from one place to another, but many create unintended consequences to people or nature perhaps due to financial pressures to gain short term profit at the expense of long term resilience including environmental sustainability, social justice and equity. The goal of ASDSP is therefore to integrate the environmental and social considerations into value chain development.

2.2.2: Criteria for Assessment of a Successful Value Chain

The following are important aspects to consider and evaluate in value chain development

- **Scalability – be able to be blown from small scale chain to large scale and hence the need to understand what will be required for the process**
- **Financial benefits and Risk – it is important to understand the financial implications of the value chain. A value chain should have superior financial benefits higher than the risks**
- **Evaluate the innovations required to make the value chain more responsive**
- **Evaluate the implications of human capital development in terms of employment and skills**
- **Consider the Environmental Risks and Benefits of the existing value chain and possible new ones**
- **Evaluate if the value chain can be made to have more significant multi-stakeholder involvement in chain development**
- **Analyze the distinctive areas for intermeDairy institutional interventions and their format**
- **Consider if the chain value has significant/unique worker or producer involvement in the business model**
- **What are the indicators to assess success?**
- **What is the geographic span of the value chain and can this be extended?**
- **Are there public policies that get in the way of the chain, or if changed may help it grow?**

2.2.3: Dimensions of a value chain

A value chain should have three dimensions. These are environmental sustainability, social equity and economic benefits. Many a times we tend to emphasize the economic dimension alone which could be at the expense of the environmental benefits. Such a value chain which does not consider the later will not be sustainable and the economic benefits will eventually be wiped out.

The Value Chain may also be viewed as having both vertical and horizontal dimensions. The vertical dimensions are the processes from production to the other stages including transportation, marketing and ultimately to consumers. Unfortunately other issues may arise. The horizontal dimension may not be obviously noticed and consists of the "hidden cost". These include the **environmental degradation of resources** emanating from value chain pressure, emissions of greenhouse gases that may exacerbate **climate change** and the social issues of **marginalization of vulnerable groups**, lack of equity in the sharing of benefits and other social inequalities (Figure 2 and 3).

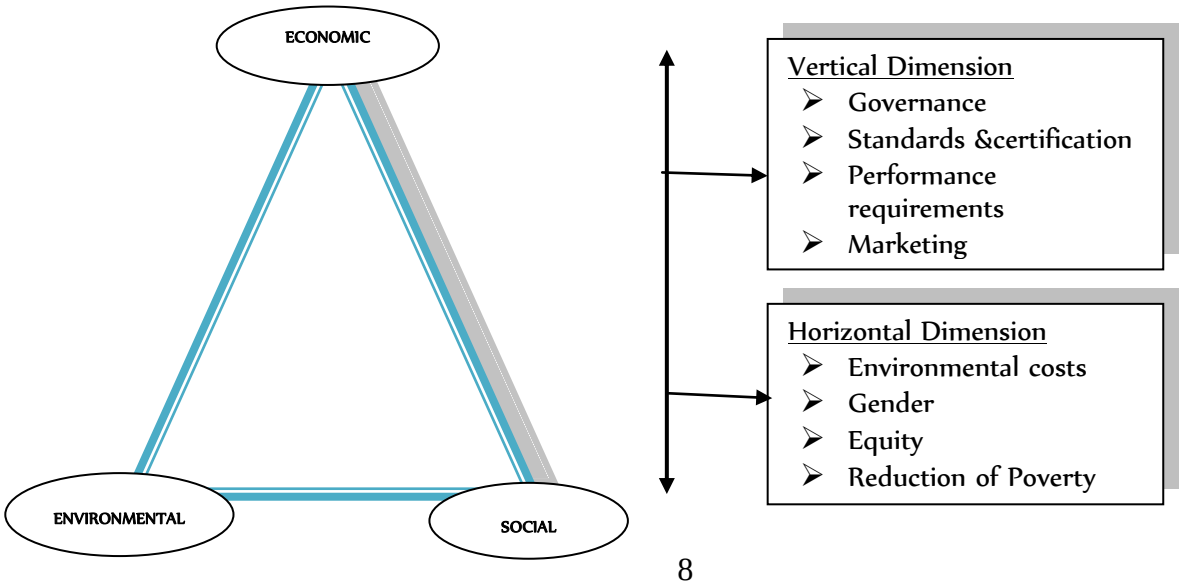


Figure 2: Vertical and Horizontal dimensions of value chain development in agriculture

2.2.4: Environmental and socio-economic considerations

In developing value chain in agriculture the ASDSP implementation should take care of local environmental constraints that arise from the use of resources for instance, over abstraction of water resources for irrigation, clearing of wetlands for agriculture, deforestation to give way for farming, draining of wetlands for agriculture among others. It is also important to take note of health issues, biodiversity degradation and gene pool preservation. This therefore calls for lifecycle analysis of a value chain in order to reduce environmental risks and enhance socio-economic benefits.

Incorporation of gender equity into all elements of the ASDSP and projects is essential for programme sustainability. The programme should therefore enhance strengths in gender differences to reduce poverty and protect the environment. Be holistic to include stakeholders in marketing activities so that farmers, transporters, retailers and consumers voices are all heard. It is also important to include other cross-cutting issues in the community including governance, labour relations, climate change mitigation and adaptations.

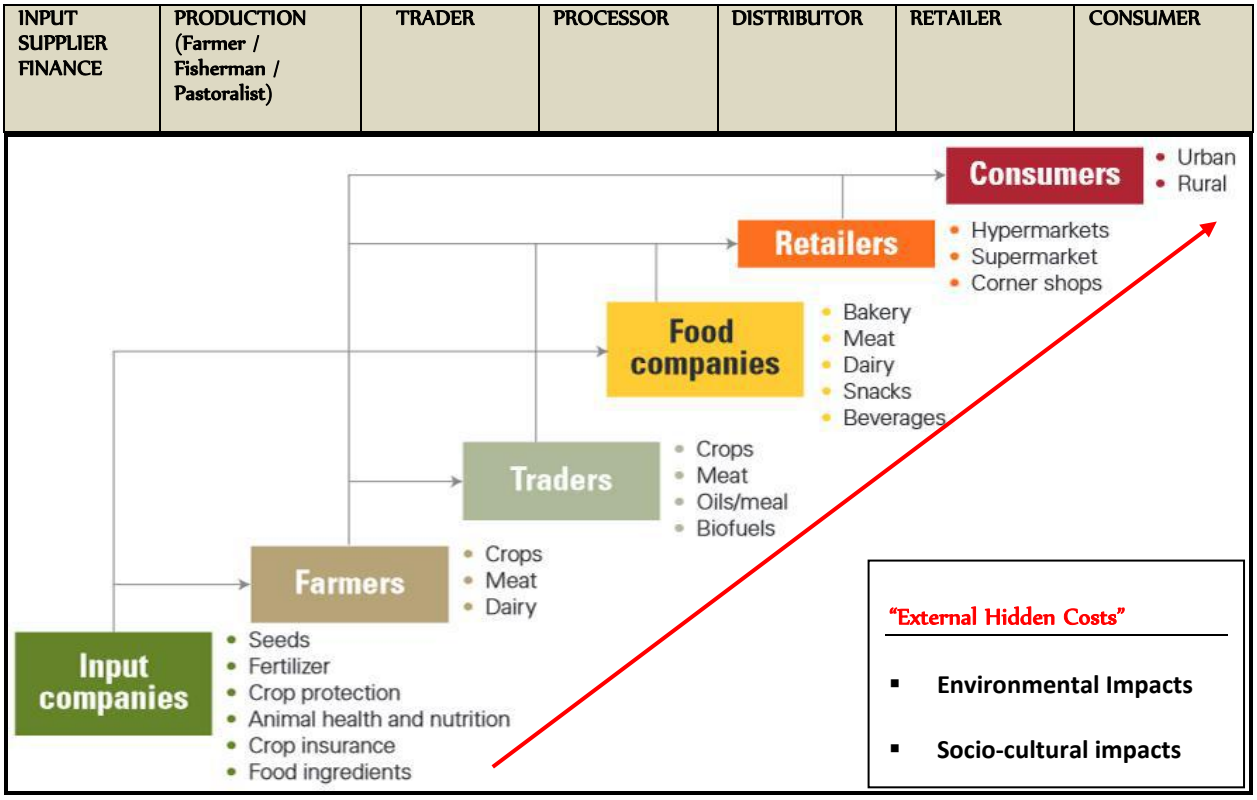


Figure 3: Value Chain relationship and the "external hidden costs"

Increased profitability in value chain though useful in reducing the level of poverty and can lead to improved living standards, it could also be a double edged knife. It can lead to more exerted pressure on natural resources and may not be sustainable in the long run. It may lead to increased soil erosion, deforestation, habitat loss, drainage of wetlands, use of more pesticides may result in killing friendly insects like pollinators hence reduced harvests, development of mutant species that can become invasive becomes a reality so is the pollution of surface freshwater resources leading to eutrophication and pollution of groundwater resources.

This is what happened during the so called "**green revolution" in agriculture** which was a package of innovations and modern farming. This involved, irrigation hence construction of dams, improved seed varieties, use of machinery including combine harvesters, drainage of wetlands for farming, use of fossil fuels for transport and in farm lands, new factories to produce farm machinery and processing of crops (adding value), use of more fertilizers and pesticides. However, though the green revolution led to elimination of food insecurity, in Asia and parts of Latin America, many other "hidden" costs have become a reality. These are environmental costs, many of them irreversible for example depletion of biodiversity. Climate change is indeed one of the consequences of the green revolution. The ASDSP value chain programme should strive to avoid these negative environmental and social consequences.

Environmental and Social Considerations

- understanding of local environmental constraints in value chain (VC),
- available natural resources and management issues that impact and are impacted by VC,
- assessment of VC impacts on health, biodiversity and natural resources;
- life cycle VC assessment to eliminate waste and emissions at source

The purpose should be to :

3. Increase socio-economic benefits
4. Reduce environmental risks,

Hence:

- ✓ the need to enhance terms of stakeholder participation
- ✓ For upgrading particularly for 'upstream' chain actors - since they are clossr to production

Value Chain development affect the environment in various forms:-
Increases in producer prices may induce an intensified use of land, resulting in soil erosion, deforestation, habitat loss and GHG emissions. Higher quality standards imposed by retailers may lead to an increased use of pesticides, causing water pollution in lakes and aquifers and health problems among workers. Conversely, the adoption of Good Agricultural Practices (GAP) could lead to **competitive organic agriculture,** increased soil fertility, clean air, healthy biodiversity, sustainable aquifers and quality human health,

In analyzing environmental impacts and management problems in the context of value chains, it is useful to distinguish between two types of processes, based on the scale at which they operate:

d) **Local Processes,**
e) **National Processes**
f) **Global Processes (Trans-boundary)**

2. **Local processes** related to VC can affect the management and use of local natural resources (land and water) may have local environmental impacts for instance:
   - biodiversity degradation,
   - soil degradation
   - soil and water pollution (e.g. from pesticides) and
   - unsustainable use of *water resources* (e.g. in irrigation schemes).

4. **National policies** on agriculture and natural resources may also affect resource degradation both at local and national levels for instance, when national developmental policies conflict with local resource use this may fuel conflicts. Sometimes government pressure to produce for export and add more value to production may negatively impact local natural resource management and reduce sustainability.

5. **Trans-boundary** - processes that transgress ecosystems and national boundaries and therefore have impacts and must be managed at a much larger scale. Key components with environmental impacts and management problems of trans-boundary implications are:
   - green house gas emissions (GHG),
   - acidification,
   - eutrophication,
   - climate change

It is therefore prudent that the ASDSP value chain development should avoid the hidden environmental and social costs summarized in Table 1.

Table 1: Environmental and Social Factors that Underline The Value Chain development and possible Impacts

BIOLOGICAL	PHYSICAL	HYDROLOGICAL	PEDOLOGICAL	SOCIO-ECONOMIC
• Habitat loss • Deforestation • Loss of biodiversity • Loss genetic pool • Species invasion • Reduce nutrient circulation	• Pollution • Energy • **Climate Change** • Land use change	• Catchment degradation • Over abstraction of water resources • Pollution of aquifers (sea, lakes, rivers and ground water)	• Salinization • Leaching • Soil erosion • Compaction • Pollution	• Livelihoods changes • Social institutions • Employment • Income change • Cultural impacts • Social amenities • Gender equity • Health factors • Food security • Education • Shelter

2.3: Alternative Policy, Options and Strategies

The alternative option and strategies are most influential when a plan and or program is being designed because changes can be designed to maximize reduction on negative impacts. The major things to consider are alternative technologies that can achieve the planned goal with least environmental and social impacts and at the same time reduce economic costs. Other alternatives involve consideration of locations so that the choice reduces impacts for example location of a processing factory near a river may result in high river pollution.

The implementation timing can also be varied depending on the nature of the activity to reduce impacts. The sequence of what is done when may make a big difference on impacts because impacts may have temporal and spatial dimension. The ASDSP is already being implemented in the 47 Counties. At the planning stage, it involved stakeholders identifying priority value chain development in their ecological and administrative area. During the scoping stage the stakeholders explained the issues around implementation technologies, location and timing sequence. The processes have taken the least negative impact pathways because the lead programme implementers were officers trained in natural resources management and agriculturists. However we recommend that for future programmes the following questions should guide the implementation process:-

1. Are there technologies or methods to develop or improve the value chain that can meet the need with less environmental and social damage than the 'obvious' or traditional methods?
2. Has the best-available technology with minimum environmental and social costs been considered?
3. What alternative locations could be considered in order to reduce impacts? For example, abattoirs located near riparian areas are likely to exert negative impacts on water resources, such processing plants should as much as possible be located far from water bodies frontage.
4. What is the most appropriate timing sequence in project implementation in order to reduce environmental and social impacts?
5. What details matter and what requirements should be formulated to ensure environmentally friendly project implementation?

2.4: Areas and Sectors Affected

The ASDSP is a National Programme covering all 47 counties of Kenya. Kenya has a land area of 587,000 km^2 and a population of 41,610,000 (2011 estimate). Overall population growth is relatively high at 2.7 per cent per annum. The majority of Kenya's population lives in rural areas (67.7 per cent), and significantly more women (77.8 per cent) than men are rural dwellers. The Agricultural sector is the backbone of Kenyan economy since it is recognized as the key to growth of Kenya's economy. Agriculture directly contributes 26% of the GDP annually and another 25% indirectly. The sector accounts for 65% of Kenya's total exports and provides more than 70% of employment in the rural areas. Women and unemployed youth form the bulk of the rural areas residents with the former being responsible for 60-80% of the agricultural production. However Gender inequalities are pervasive in all regions of Kenya, with women being highly disadvantaged with regard to access to and control over factors of production, benefits, and representation in leadership. HIV/AIDS and high levels of malnutrition and stunting are prevalent in urban and rural areas. All indicators vary widely by province, a consequence of Kenya's wide variety of agro-ecological zones, demographic patterns and associated production systems.

Sustained equitable agricultural growth is critical to uplifting the living standards of majority Kenyans as well as generating rapid economic growth. Since 2008, the sector has taken steps towards realization of the growth. This culminated in the sector growth improving from a negative 4.1 percent in 2008 to a positive real growth of 6.3 percent in 2010. This can be attributed to good weather conditions as well as deliberate attempts by the government to implement the Economic Recovery Strategy for Wealth and Employment Creation (ERS) 2003-2007, that had put emphasis on agricultural growth as key for wealth and employment creation. In response to this, the sector developed the Strategy for Revitalizing Agriculture (SRA) 2004-2014.

Building upon progress made by the Economic Recovery Strategy for Employment and Wealth Creation (ERS), Kenya launched Vision 2030 in 2008 as the country's long-term economic blueprint to guide its development. Vision 2030's objective is to transform Kenya into a newly industrialized, middle-income country providing a high quality of life to all its citizens by 2030. To support this Vision, the agricultural sector developed the Agriculture Sector Development Strategy (ASDS) which was signed with the Comprehensive Africa Agriculture Development Programme (CAADP) Compact in 2010.

The ASDS is the overall sector strategy aiming at an annual agricultural equitable growth targeted at 7%. This will go towards achievement of the 10% annual economic growth envisaged under the Kenya Vision 2030. Equity is an important dimension in the ASDS because inequalities, including gender and other forms of vulnerabilities hold productivity down, yet increasing productivity is core to achieving the anticipated sector growth target. This means that the sector must have the requisite capacity to ensure equitable rapid sustainable development.

The ASDS Medium-Term Investment Plan 2010–2015 (MTIP) operationalizes the ASDS in the short term. It identifies and lists specific investment interventions proposed for implementation to achieve Vision 2030 and CAADP goals as follows:

- Increasing productivity, commercialization and competitiveness
- Promoting private sector investment and participation in all aspects of agricultural development including research
- Promoting sustainable land and natural resources management
- Reforming and improving delivery of agricultural services and research
- Increasing market access and trade
- Ensuring effective coordination and implementation of interventions

2.5: Potential Projects that shall require individual EIA's

The potential projects that will require Environmental Impact Assessments under the ASDSP are listed in Table 1. Given the scope of the SEA primarily focuses on the environmental issues, the fundamental projects to be evaluated fall under the Production, Processor and Distributor stages of the ASDSP (Figure 3).

Table 2: ASDSP Projects that will need individual EIA's in various value chain development

	VALUE CHAIN CATEGORY	PRODUCTION	PROCESSOR	DISTRIBUTOR
AGRICULTURE	• Cereal • Pulses (Green Grams)	• Large Scale Agriculture Schemes • Irrigation Schemes • Chemicals Application and Disposal	• Bulk Grain Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal	• Bulk Grain Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal
	• Rice	• Large Scale Agriculture Schemes • Irrigation Schemes • Chemicals Application and Disposal • Pest Management Methods	• Bulk Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal	• Bulk Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal
	• Vegetables (Kales ...)	• Large Scale Schemes • Irrigation Schemes • Chemicals Application and Disposal	• Waste Management	
	• Fruits (Mangoes)	• Large Scale Mango Schemes • Irrigation Schemes • Introduction of Exotic varieties of Mango • Chemicals Application and Disposal	• Fruit Processing Plant • Waste Management	
	• Tubers (Cassava, Sweet Potatoes, Irish Potatoes)	• Introduction of Exotic varieties / cultivars	• Waste Management	
	• Beekeeping	• Large Scale Beekeeping Schemes	• Honey Processing Plants	
	• Cash Crops (Pyrethrum)	• Large Scale Pyrethrum Schemes • Irrigation Schemes	• Pyrethrum Processing Plant • Waste Management	
	• Cash Crops (Cotton)	• Large Scale Cotton Schemes • Irrigation Schemes • Chemicals Application and Disposal	• Cotton Textile Plants	
LIVESTOCK	• Beef • Chevon (Goat meat) • Mutton • Camel	• Livestock Dips • Large Scale Livestock Schemes • Chemicals Application and Disposal	• Abattoir • Slaughter Houses • Waste Management • Tanneries	
	• Dairy	• Introduction of Exotic Breeds of Livestock • Large Scale Livestock Schemes • Chemicals Application and Disposal	• Milk Processing Plants • Dairy Products Processing Plants (Cheese, Ice Cream ...) • Chemicals Application and Disposal • Waste Management	
	• Poultry	• Large Scale Poultry Schemes • Introduction of Exotic Breeds of Poultry • Chemicals Application and Disposal	• Poultry Slaughter Houses • Waste Management	
FISHERIES	• Fish (Marine, Lakes, Rivers)	• Large Scale Fishing Schemes • Fishing Methods and Techniques (Nets, Lines ... etc)	• Fish Processing Plants • Waste Management	
	• Fish (Aquaculture Ponds)	• Large Scale Aquaculture Programmes	• Fish Processing Plants • Waste Management	

2.6: Implementation Plan and Time Scale

Since the ASDS Programme's Components 1 and 2 support component 3 so that it can be the engine to achieve the Programme purpose. The SEA Implementation Plan also includes the plans for implementation of Components 1 and 2 to provide a holistic view of the entire Programme. This logical relationship between the programme components is illustrated in the Table 2.

Table 3: ASDSP components and proposed outcomes

COMPONENT	OUTPUT	OUTCOME	DIRECT IMPACT	FINAL IMPACT	2012-13	2013-14	2014-15	2015-16	2016-17
COMPONENT 1: SECTOR COORDINATION									
Sub-component 1.1: Develop a client-responsive institutional framework for sector-wide coordination	1. Inclusive sector-wide coordination structures—NF, ICC, TC, TWG and ASCU, 2. Appropriate mechanisms for funding sector-wide coordination 3. Appropriate mechanisms for sector-wide programming and funding 5. CoC adherence enforcement mechanisms 4. appropriate ASDSP funding mechanisms 6. Inclusive ASDSP coordination structures—NPS, PSC, CCU CSC,	Improved sector-wide coordination through adoption of SWAp by GoK and Development Partners	Effective use of development funds through harmonized programming approach Efficient and transparent use of resources used by the ministries in the sector. Improved aid effectiveness Improved productivity and equity in agriculture	Efficient investment in the sector (Development Partners, GoK and other actors) Increase in return on investment in the sector					
Sub-component 1.2: Support capacity building of sector institutions for implementation of ASDSP	1. Appropriate mechanisms for enhancing capacity of ASDSP stakeholders (individual /Organizational/ Contextual) 2. Appropriate mechanisms for enhancing capacity of sector institutions of relevance to ASDSP (individual /Organizational/ Contextual)	Improved capacity of ASDSP stakeholders and sector institutions of relevance to implement the programme	Improved performance of ASDSP stakeholders Improved performance of institutions of relevance to ASDSP	Efficient and Harmonized implementation of ASDSP through sector-wide, demand-driven and stakeholder-led programme approach					
Sub-component 1.3: Improve linkages between key sector stakeholders (programmes, researchers, educational institutions, extensionists and VC actors)	1. Mechanisms for improving linkages between key sector stakeholders	Appropriate partnerships Appropriate technological packages	Improved access to agricultural services and infrastructure by the VC actors Improved VC actors' satisfaction with agricultural services and infrastructure Sustained use of relevant technologies and assets by VC actors	Increased productivity and equity for crops, livestock and fish producers					
Sub-component 1.4: Develop and support Gender and vulnerability sensitive sector-wide M&E information	1. Sector-wide M&E and information system 2. ASDSP M&E and information system 3. Communication mechanisms for providing agricultural information	Availability of information relevant to sector stakeholders' specific data needs	Sustained use of one or more sector-wide M&E services by sector stakeholders Enhanced accountability relationships among stakeholders	Improved stakeholders' satisfaction with sector-wide M&E services					

COMPONENT	OUTPUT	OUTCOME	DIRECT IMPACT	FINAL IMPACT	2012-13	2013-14	2014-15	2015-16	2016-17
systems									
Sub-component 1.5: Develop appropriate sector-wide policies, strategies and regulations (VC, NRM/CC/social protection)	1. Mechanisms for policies, strategies and regulations preparation 2. Implementation frameworks	Polices, strategies and regulations prepared and rolled out	Sector policies, strategies and regulations in use	Improved social and physical conditions Improved services and systems					
2. ENVIRONMENTAL RESILIENCE AND SOCIAL INCLUSION									
Sub-component 2.1: Strengthen Environmental resilience for value chain actors, including vulnerable groups	1. Enhanced awareness, knowledge and appreciation of NRM and CC causes/risks 2. Enhanced capacity for equitable engagement in local NRM/CC planning 3. Improved access to NRM/weather/CC adaptation advisory services and appropriate technologies	Improved groups' (including vulnerable) capability to plan for sustainable NRM and climate-related risk management in VCs	Enhanced use of climate smart technology inputs and /or land management/ husbandry resources by the actors	Improved capacity on sustainable NRM and response to climate-related risks in VCs by actors					
Sub-component 2:2. Strengthen conditions that enable vulnerable groups to engage in value chain development	1. Improved access to social protection and security services by vulnerable groups 2. Enhanced community action capability	Increased use of social protection services Improved involvement in decision-making at various levels	Enhanced access to productive assets necessary for engagement in VCs by the vulnerable groups	Increased engagement in VCs by the vulnerable groups					
COMPONENT 3: VALUE CHAIN DEVELOPMENT									
Sub-component 3.1: Develop inclusive value chain organizations	1. Improved inclusive linkages along the VCs (vertical and horizontal) 2. Strengthened value chain organizations' advocacy and lobbying capacity 3. Enhanced VC actors' management skills	Enhanced capability of VC organizations to articulate and meet diverse needs of their members (including production and marketing needs)	Increased actors' participation in VCs	Better functioning VCs for Increased benefits to actors					
Sub-component 3.2: Increase public and private investment in VC development	1. PPPs developed 2. Enhanced VC actors' investment capacity	Improved VC actors' investment capability	Increased investments in VCs by the actors'	Increased flow of public and private funds in VC development					

COMPONENT	OUTPUT	OUTCOME	DIRECT IMPACT	FINAL IMPACT	2012-13	2013-14	2014-15	2015-16	2016-17
Sub-component 3.3: Increase equitable access to market	1. Improved access to market information 2. Enhanced pre- and post production management capacity	Improved VC actors' inclusive participation in formal market arrangement	Improved business for VC actors	Increased returns to VC actors					
Sub-component 3.4: Improve access to affordable financial and insurance services for value chain actors	1. Enhanced access to socially inclusive financial services 2. Enhanced access to agricultural insurance services	Increased use of financial and insurance services by the VC actors'	Enhanced investment in VC enterprises by the actors	Increased lending portfolio to agricultural sector value chain actors					
Sub-component 3.5: Up-scale and out-scale innovative and inclusive value chains and VC technologies	1. VC actors' capacity to identify promising VCs and VC technologies strengthened 2. Mechanisms for up-scaling and out-scaling of VCs and VC technologies established	Enhanced actors' capability to identify promising VCs and appropriate VC technologies Enhanced actors' capacity to source, generate and disseminate appropriate technologies	Increased VC actors' engagement in innovative VCs and technologies	Increased productivity and efficiency of VCs because of use of best-practices					

3.0: ENVIRONMENTAL BASELINE INFORMATION AND ANALYSIS

3.1: Description of Baseline Environmental Conditions of the Affected Areas

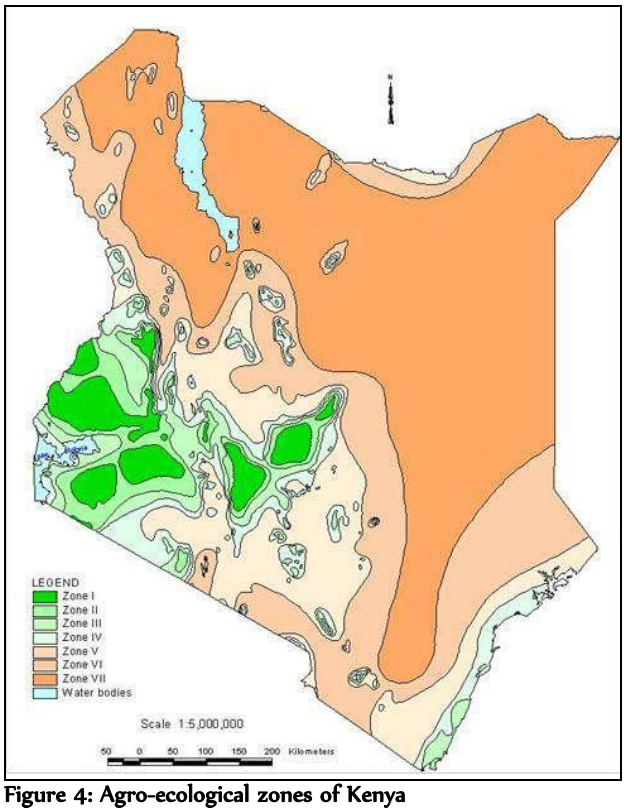


Figure 4: Agro-ecological zones of Kenya

The ASDSP is being implemented in all the agro-ecological zones of Kenya because each region is unique in terms of agricultural potential and land use. The agricultural potential is defined by rainfall amount, temporal distribution and frequency. Temperature and altitude are also a major consideration. The factors are described in the subsequent sections:

Climate, vegetation and land use potential have been used to assess land suitability for different uses in Kenya. The major climatic factors that affect land use in Kenya are rainfall both in term of amount temporal distribution and reliability. Evapotransporation is also a major factor for consideration in Kenya's ecological zones. For these reasons, Kenya is divided into 7 agro-climatic ecological zones using moisture index (Fig. 4). This is based on annual rainfall expressed as a percentage of potential evaporation. Areas with an index greater than 50% have high potential for cropping, and range from I, II, and III depending on relative moisture availability. These zones account for 12% of Kenya`s land area. The semi-humid to arid regions (zones IV, V, VI, and VII) have indexes of less than 50% and a mean annual rainfall of less than 1100 mm. These zones are generally referred to as the Kenyan rangelands and account for 88% of the land area (Table 4). Stakeholders in each of the agro-ecological zones chose climatically suitable crop for value chain development.

3.1.1: Climate and Agro-Ecological Zones of Kenya

Table 4: Agro-climatic Zones of Kenya based on moisture

Agro - Climatic Zone	Classification	Moisture Index (%)	Annual Rainfall (mm)	Land Area (%)
I	Humid	>80	1100-2700	
II	Sub-humid	65 - 80	1000-1600	12
III	Semi-humid	50 - 65	800-1400	
IV	Semi-humid to semi-arid	40 - 50	600-1100	5
V	Semi-arid	25 - 40	450-900	15

VI	Arid	15 - 25	300-550	22
VII	Very arid	<15	150-350	46

Modified from: Sombroek *et al.* (1982)

3.1.2: Agro-climatic zones based mean annual temperature

The seven agro-climatic zones are each sub-divided according to mean annual temperature to identify areas suitable for growing each of Kenya's major food and cash crops. Most of the high potential land areas are located above 1200 m altitude and have mean annual temperatures of below 18° C, while 90% of the semi-arid and arid zones lies below 1260 m and has mean annual temperatures ranging from 22° C to 40° C. There are four inter-connected factors that determine the long-term availability of grazing resources in pastoral production systems: (i) variability in rainfall; (ii) the efficiency with which rainfall is converted into useable forage; (iii) the use of grazing resources by the domestic and wild herbivores; and (iv) the relationship between quantity and quality of the resources.

Table 5: The agro – climatic zones based on moisture and altitude

ZONE	ALTITUDE	AVERAGE RAINFALL	AREA IN KENYA
The cold and wet high altitude region	2400 to 2500 m	1200 mm Frost occurrence	Mau Narok in the Rift Valley, the upper Cherangani hills and upper Mt. Elgon in Western Kenya, and the upper Nyandarua, Nyeri, Kiambu, and Aberdare Range in Central Kenya. Much of Mt. Kenya
The cool and wet medium altitude region	1800 to 2400 m	1000 mm p.a	Trans Nzoia, Nandi, Kericho, Kisii and Narok districts in Western Kenya, and Nyandarua, upper Kiambu, Nyeri, Kirinyanga, Muranga, Embu and Meru districts in Central Kenya
The warm and wet medium altitude region		1,000 mm	Taita Hills, Meru, Embu, Kirinyanga, Muranga, Kiambu and Nyeri districts in eastern and central Kenya. In western Kenya:Bungoma, Kakamega, Busia, Siaya, Kisumu, Kisii and South Nyanza districts.
Warm and dry medium altitude region	1000 to 1800 m	500 - 760 mm	Kitui and Machakos districts, the dry lower parts of Meru, Embu, Kirinyaga and Isiolo in central Kenya, Homabay areas in South Nyanza and Uyoma in Siaya District).
The hot dry coastal hinterland	1000 m	500 - 750 mm	Region extends inland from the hot humid coastal strip on the southern half, while in the northern section of the region, it includes the coastline. In the south-west, the region extends further inland in a belt around Taita Taveta
The hot and humid coastal strip	150 m	760-1270 mm	The coastal strip which is ten miles (16 km) wide and runs parallel to the coast from Vanga to Malindi.
The semi-arid and arid rangelands		300-800 mm	Marginal areas of west Pokot, parts of Marakwet, Keiyo, Baringo, and Kajiado.
Very arid zones			Turkana, Marsabit, Garissa

3.1.3: Agricultural Sector Profile

Economic Importance - Agriculture plays a significant role in Kenya's economy. The sector directly contributes 26 per cent of the GDP and another 25 per cent indirectly. It supplies the manufacturing sector with raw materials and generates tax revenue and foreign exchange that support the rest of the economy. The sector employs over 40 per cent of the total population and over 70 per cent of the rural population. Tea and fresh flowers are key foreign exchange earners. Sisal, cotton, fruits and vegetables are important cash crops. Coffee, historically an important foreign exchange earner, still contributes to the economy but began declining in importance and earnings in the 1990s, owing in part to market instability and deregulation. Other important agricultural commodities include dairy, maize, sugarcane, a wide range of vegetables, and livestock particularly in the arid and semi-arid lands. The closs relation between general economic growth of Kenya and the growth of its agricultural sector GDP since the mid 1990s to present is shown in Figure 5.

The decline in economic growth rates in general and in the agricultural sector more specifically during the period 1995-2002 stands out, as does the recovery since 2002. The promising upturn in the last decade came to a halt in 2008/09 as a combined result of the post-election violence and severe droughts that hit much of the country. Whereas the agricultural sector growth rate increased from 2 per cent in 2002 to 6.7 per cent in 2007, it dropped to a negative rate (–2.5 per cent) in 2008.

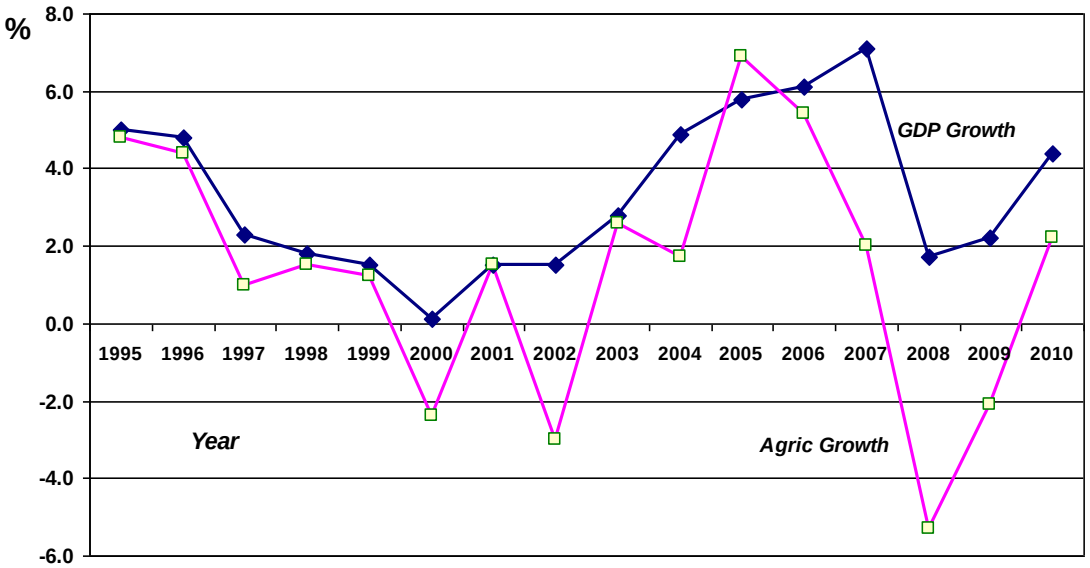


Figure 5*: Kenya's GDP and agricultural growth rates (1995–2010)*

At the same time, the general economy grew from 0.5 per cent in 2002/03 to a high of 7.2 per cent in 2007/08, after which it dropped to 1.7 per cent in 2008/09.

Production Systems: Due to large variations in altitude, rainfall, temperatures and geology, the country exhibits many gradients in agro-ecological conditions. One way of categorising land in Kenya is according to rainfall potential: high, medium and low potential. The high and medium potential areas, with adequate and reasonably reliable rainfall for crop production, occupy just 16 per cent of the nation's land area. The low potential area for rain-fed crop production constitutes 84 per cent. These lands are referred to as the arid and semi-arid lands (ASALs). The ASALs occupies almost a third of the country's population and livestock keeping is the dominant livelihood activity. In addition to agro-ecological conditions, agricultural production systems in Kenya are affected by the local land tenure situation, historical patterns of land use, and the availability of infrastructure and markets.

Due to population increase and pressure on natural resources, migration into to increasingly marginal geographical areas has increased. As the incomers often apply production systems that are unsuited and unsustainable in the context of their new environment, this has accentuated a negative spiral of environmental degradation and increasing poverty among migrant populations and therefore the need to add quality to agriculture through value chain development.

3.2: Prioritized Value chain in various agro-climatic zones

All the counties were involved but grouped based on Agro-ecological zones of Kenya. In each of the counties, stakeholders in the county had selected the value chain they wanted strengthened through financing from ASDSP. The outcome is represented in Table 5.

Table 6: Prioritised Value Chain in various agro-climatic zones

AGRO-CLIMATIC ZONES	PROJECT PLANS AND PROGRAMMES	COUNTIES	PRIORITISED VALUE CHAINS
Coast Region	• Sea fishing • Cassava • African Bird eye Chilli • Mangoes • Local poultry • Tomatoes • Cashew Nuts	KWALE KILIFI TANA-RIVER LAMU TAITA TAVETA MOMBASA	1. LOCAL POULTRY, 2. TOMATOES, 3. MANGO 4. CASSAVA, 5. AFRICAN EYE BIRD CHILLI, 6. CASHEW NUTS 7. FISH,
Northern Region	• Beef Farming • Camel Milk & meat • Shoats (Chevon & Mutton) • Tomatoes	MANDERA TURKANA MARSABIT WAJIR WEST-POKOT GARRISSA ISIOLO	1. TOMATO, 2. DAIRY(CAMEL), 3. CAMEL MEAT 4. BEEF, 5. CAMEL MILK, 6. TOMATOES 7. GOAT MEAT (CHEVON)
Semi-Arid Regions	• Cereals (drought resistant crops-millet, sorghum, cassava, sweet potatoes) • Local and Exotic Poultry • Agro-Pastoral (beef/shots/camel) • Bee-Keeping • Legumes (beans, cow-peas, peas, green-grams) • Fruits (mangoes, Oranges, Pineapples, lemons)	KAJIADO NAROK MACHAKOS MAKUENI KITUI THARA-NITHI SAMBURU BARINGO LAIKIPIA	1. DAIRY, 2. TOMATOES, 3. BEEF 4. LOCAL POULTRY, 5. KADAM SORGHUM, 6. GREEN GRAMS 7. LOCAL POULTRY 8. GREEN GRAMS 9. MANGO 1. MEAT GOATS 2. HONEY 10. MAIZE, 11. SHEEP AND GOAT
Sub-Humid to Humid Regions	• Horticulture (Tomatoes, chillies, Capsicum, French beans) • Dairy Farming • Cereals (Maize, Wheat, Barley, Rice) • Beef and Shots • Sugarcane • Poultry farming (local and exotic breeds) • Aquaculture • Bananas • Apples • Potatoes • Onions • Pineapples • Passion fruits	KIRIYANGA KAKAMEGA VIHIGA BUSIA TRANS-NZOIA UASIN-GISHU NAROK KISII NYAMIRA MIGORI HOMABAY BOMET KERICHO MURANGA MERU EMBU TAITA-TAVETA KISUMU SIAYA NANDI NAKURU	• DAIRY, • PYRETHRUM, • FISH (Aquaculture) • LOCAL CHICKEN, • FISH, • COTTON • LOCAL POULTRY • FRUITS (Avocadoes, passion fruits) • SWEET POTATOES • MAIZE, • BEEF, • BANANAS • LOCAL VEGETABLES • BANANAS, • RICE

AGRO-CLIMATIC ZONES	PROJECT PLANS AND PROGRAMMES	COUNTIES	PRIORITISED VALUE CHAINS
Highlands Regions	• Tea farming • Coffee farming • Horticulture farming • Potatoes farming • Cabbages farming • Carrots farming • Dairy Farming • Aquaculture • Strawberries farming	KIAMBU ELGEYO MARAKWET MT. ELGON REGION ABERDARES REGION MT. KENYA REGION MAU NAROK NYANDARUA NYERI	1. DAIRY, 2. INDIGENOUS POULTRY, 3. BANANAS 4. DAIRY 5. FRUITS (Avocadoes, Bananas & Mangoes) 6. VEGETABLES (French Beans, Snow peas) 7. IRISH POTATOES, 8. LOCAL POULTRY
Urban		NAIROBI MOMBASA KISUMU	1. Dairy 2. Poultry (Broilers) 3. Kales (sukumawiki)

4.0: RELEVANT POLICY AND LEGISLATIVE FRAMEWORK RELEVANT TO ASDSP SEA

4.1: Relevant Policies to ASDSP SEA

To successfully undertake, ASDSP Value Chain Development Component, the programme must be in line with the country's legislative and policy regulatory framework. Further, ASDSP must fit within the government's and area development plans and goals. The policies, institutional and legal regulatory frameworks were derived after consideration of Component 3 which supports viable, equitable and long term commercialization of the agricultural sector as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups.

1. The Kenya Constitution, 2010: Kenya's supreme legislative document is the constitution. The constitution on the whole boasted the realm of natural resources management in the country. Indeed, the new constitution gives the environment and natural resources management a special place, with the Bill of Rights (Article 42) stating that "every person has the right to a clean and healthy environment". The constitution also goes further to urge that efforts be made to achieve and maintain a tree cover of at least 10% of the land area in Kenya. Additionally, the constitution commits the government to: -

- Ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; encourage public participation in the management, protection and conservation of the environment;
- Protect genetic resources and biological diversity;
- Eliminate processes and activities that are likely to endanger the environment; and
- Utilize the environment and natural resources for the benefit of the people of Kenya.

The Constitution of Kenya defines key social, economic and political rights of Kenyan citizens. It also outlines the system of devolved Governments and prescribes a reduction of the number of ministries from the current 42 to between 14 and 22. It was inevitable that some of the sector ministries were consolidated in the rationalisation of the government. Consequently, while the functions of the sector will largely remain unchanged, the sector's institutional set-up, representation and division of responsibilities between the national Government and the new county governments changed dramatically. The ASDSP value chain development projects cuts across the State Department of Agriculture, State Department of Livestock and State Department of Fisheries, although ASDSP is housed in the State Department of Agriculture.

2. Vision 2030: This is the country's long term development plan which aims at creating a "globally competitive and prosperous country with a high quality of life by 2030". Kenya's economic development strategy emphasises the long term development of agriculture, tourism, manufacturing and the energy sector, all of which rely heavily on sustainable exploitation of natural resources. ASDSP will contribute to the vision with regards to agriculture development, sustainable exploitation of natural

resources, improving rural livelihoods, and help to ensure that environmental and socio-economic considerations are appropriately integrated into the programme, its operational plans and monitoring processes.

3. National Poverty Reduction Strategy (2001)/ Economic Recovery Strategy for Wealth and Employment Creation (2003): ASDSP is in line with these two strategy documents as it fights poverty and also improves livelihoods through agriculture which is the backbone of the country's economy. It is also in line with the two strategies with regards to partnerships, people's participation, and private sector engagement. Additionally, it supports the two pillars of fighting poverty, namely, equity and improved targeting in ensuring access of the poor to basic services and better governance.

4. Millennium Development Goals (MDGs), 2000: These are eight international development goals that all the 192 United Nations member states agreed to achieve by 2015 during an extra-ordinary General Assembly in 2000. They include eradicating extreme poverty, reducing child mortality rates, fighting disease and epidemics, such as HIV/AIDS, and developing a global partnership for development. The proposed project is in line with the MDGs in terms of poverty eradication, through creation of employment and improving livelihoods through improved food security, and health. The project is also in line with Goal 7 on ensuring environmental sustainability through reducing loss of biodiversity by improving protection of habitats; and improving access to safe drinking water.

5. National Climate Change Response Strategy, 2010: The National Climate Change Response Strategy (NCCRS) observes that agricultural production in Kenya is affected by extreme weather conditions and notes that responses are urgently needed to adapt agricultural practices that maintain and enhance production. The NCCRS outlines technical responses in terms of improved water management and use efficiency, improved agricultural and livestock management practices, diversification of livelihoods to increase resilience. Institutional responses include improved information flow to create awareness and assist farmers in decision-making, innovative insurance schemes and vaccination campaigns, intensified research and development and inventories of indigenous knowledge, and strengthening local capacities. In addition to adaptation, a number of mitigation measures are proposed for the agricultural sector. These include linking to carbon markets and developing sustainable biomass-based energy systems.

A range of ASDSP interventions support the implementation of various NCCRS priority interventions, including support to NRM/climate change/environmental related policy development, climate related information management, agricultural insurance and support to development of ecologically sustainable value chains.

ASDSP supports interventions aimed at ensuring that the efforts to strengthening priority value chains in the context of Component 3 are environmentally sound and resilient to climate fluctuations, and that women, youth and economically and socially vulnerable groups have access to participating effectively in and benefitting from the improved value chains. Overall, this component therefore aims to;

- Raise awareness and knowledge of the importance of environmental sustainability, NRM and the causes and effects of climate change;
- Improve access to and use of appropriate NRM and climate change technologies and services, particularly for women, youth and vulnerable groups.

6. Agriculture Policy: Agricultural policy in Kenya revolves around the main goals of increasing productivity and income growth, especially for smallholders; enhanced food security and equity; emphasis on irrigation to introduce stability in agricultural output; commercialization and intensification of production especially among small-scale farmers; appropriate and participatory policy formulation and environmental sustainability. The key areas of policy concern, therefore, include:
Increasing agricultural productivity and incomes, especially for small holder farmers;

- Emphasis on irrigation to reduce over-reliance on rain-fed agriculture in the face of limited high potential agricultural land;
- Encouraging diversification into non-traditional agricultural commodities and value addition to reduce vulnerability;

- Enhancing food security and a reduction in the number of those suffering from hunger and hence the achievement of Millennium Development Goals (MDGs);
- Encouraging private-sector-led development of the sector; and
- Ensuring environmental sustainability.

7. Agriculture Sector Development Strategy (ASDS) 2010-20: The strategy's goal is to achieve an average growth rate of 7% per year in agriculture. The growth of the sector is anchored in two strategic thrusts:
(i) Increasing productivity, commercialization and competitiveness of agricultural enterprises; and
(ii) Developing and managing the key factors for production.
The sub –sector strategic focus of the ASDS is: (i) crops and land development; (ii) livestock development including in the ASALs; (iii) fisheries sub-sector; and (iv) cooperative development. In terms of production factors the ASDS prioritizes: (i) improving water resources and irrigation development; (ii) land u se; (iii) developing Northern Kenya and other ASALs; (iv) improving management of the environment and natural resources; (v) developing river basins and large water body resources; and (vi) forestry and wildlife resources.

ASDSP is thus in line with this strategy with regards to increasing agricultural productivity, contributing to fisheries development – aquaculture; marketing through cooperatives, improving irrigation development and water resources, and improving natural resources management.

9. The SRA, ASDS and MTIP

To support Vision 2030, the agricultural sector developed the Agricultural Sector Development Strategy (ASDS) 2010-20, to succeed the Strategy for Revitalization of Agriculture (SRA) 2004-14. The SRA was developed to support economic recovery after the sector went through a prolonged period of decline. The growth of agricultural GDP fell to negative 3% by 2002 resulting in high levels of unemployment and poverty. The overall goal of SRA was therefore to achieve a progressive reduction in unemployment and poverty. The SRA target for agricultural sector growth was set at 6.0%. To achieve this goal, the SRA identified five critical areas requiring public action in the modernization process of the sector. These areas were:

- Reform of the legal and regulatory framework governing agricultural operations in order to make it fair and just for all farmers, processors, and others involved in agro-related activities.
- Promotion of research and technology development.
- Reform of the extension service system to create a more effective linkage between research, extension and the farmers as the ultimate beneficiaries.
- Establishment and development of a market-based agricultural credit and inputs system.
- Promotion of domestic processing of agricultural produce in order to provide increased opportunities for value-adding, employment creation and foreign exchange earnings.

After successful implementation of SRA, the Agriculture Sector Development Strategy (ASDS) that followed raised the agricultural growth rate target to 7 per cent per year over the subsequent five years. It also identified investment areas that needed to be addressed to deliver the desired growth. These are:

- Increasing productivity, commercialization and competitiveness
- Promoting private sector investment and participation in all aspects of agricultural development including research
- Promoting sustainable land and natural resources management
- Reforming and improving delivery of agricultural services and research
- Increasing market access and trade
- Ensuring effective coordination and implementation of interventions

The ASDS is being implemented through 5-Year Medium Term Investment Plans (MTIP). The first MTIP is being revised to be harmonized with the Vision 2030 MTP to run for the period 2013 to 2017. This will ensure that the investments articulated in the MTIP can be linked directly to the budgeting process for MTP making the linkage of MTIP outcomes to MTP easier and visible.

8. Land Policy, 2008 (Draft): A draft land policy, 2008, has been formulated to address the critical issues of land administration, access to land, land use planning, restitution of historical injustices, environmental degradation, conflicts, unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. The policy aims to ensure that all land is put to productive use on a sustainable basis by facilitating the implementation of key principles on and use, productivity targets and guidelines as well as conservation. It encourages a multi-sectoral approach to land use, provide social, economic and other incentives and puts in place an enabling environment for agriculture and livestock development. But the policy is still not yet law, but ASDSP will ensure compliance with the new policy once passed.

9. Livestock Policy: The policy is similarly to increase livestock output and productivity, improving market access for livestock and livestock products and creating an enabling environment for livestock development. This is with a view to increase farmer's incomes through efficient delivery of extension service and research, inter alia. The policy deals with milk production, processing, and marketing; promotion of animal health by re -activating and expanding dips; breeding and clinical services- stocking of drugs by animal health technicians; monitoring and control of animal diseases, promotion of dairy goats, poultry and beekeeping, support development of facilities for milk handling such as collection and cooling centres encourage the private sector and local authorities to establish small abattoirs and meat processing facilities, and to encourage the establishment of value adding processes. The ASDSP is in line with this policy in respect to improving livestock production, valued addition, improved breeds of livestock, and supporting development of goat milk markets.

10. New Irrigation Policy (2011): The government has also formulated a new National Irrigation Policy which favours: (i) intensifying and expanding irrigation, rainwater harvesting and water storage; (ii) rehabilitating and protecting water catchments; and (iii) implementing the irrigation flagship projects identified in Vision 2030. ASDSP is in line with this strategy with regards to protecting of the major water towers, promoting water harvesting and storage. However, due to the fact that surface water resources of the country are already over-utilised, irrigation interventions under ASDSP will need focus on improving water use efficiency and increasing retention of water within the farming systems, which is also a way of promoting irrigation.

11. Water Policy (2002): A new water policy changed in the role of Government from being a service provider to becoming a facilitator and regulator of other water sector players, which is the same model ASDSP uses. The project also uses the various institutions created, especially the Water Resources Management Authority (WRMA) and the Water Services Trust Fund (WSTF). At the local level, the project uses the Water Resource User Associations (WRUAs) which are key community associations for management of river basins under the ministry of Water ,Environment and Natural resources, and will continue to play a pivotal role under the ASDSP.

12. Draft Wildlife Policy (2007): The ASDSP aligns itself with this policy with regards to the mitigation of human wildlife conflicts which is one of the main problems experienced by the farming communities in many counties. Human wildlife conflicts also exacerbate poverty and food insecurity in the project area.
By involving the communities in mitigating human wildlife conflicts, the project will also promote positive attitudes towards wildlife and wildlife conservation, which is in line with the policy. The policy is also important with regards compensating farmers for damage to property, crops, human harm and other losses.

13. Kenya Fisheries Policy (2005): ASDSP is in line with this policy with regards the promotion of aquaculture, which the policy states has the capacity to change the natural fish production in the country three fold. The project will also, through more widespread supply and availability of fish, promote fish consumption, thereby also improving community health in line with the policy. As per the policy, the project will also assist in forming groups of fish farmers. Aquaculture will further enhance food security in the region and country.

14. Forest Policy (2005): The forest policy expanded the mandate in the management of all types of forests, including the involvement of adjacent forest communities and other stakeholders in forest management and conservation. It also brought about an ecosystem approach in forest management and

further included incentives to promote sustainable use and management of forest resources. Additionally, it recognizes that there are benefits arising from involvement of local communities and other stakeholders in forest management. The policy also acknowledges that, given the growing population, it is not possible to meet all the demands of forest products from state forests and thus alternative sources of these products are expected to come from farmlands. The policy also provides for government to promote tree planting and land rehabilitation for carbon sequestration and to explore opportunities for carbon trade in conservation and management of forests. ASDSP is in line with the forest policy with regards to involvement of local communities in sustainable management of forests; promoting and building capacity in participatory forests management; promoting farm forestry to produce wood fuel, timber and other products; building capacity of community forest association so that they are able to play a role in forests management; restoration of indigenous forests; promoting use of management plans and building capacity to implement the same; support to manage riverines forests and forestry activities for water and soil conservation; efficient use of fuel wood; and promotion of efficient wood energy technologies.

16. Wetlands Policy (2010): The wetland policy calls for the enforcement of relevant regulations and laws that promote maintenance of ecological integrity of wetlands and ensures protection of water sources. It also seeks to promote and encourage sustainable use of ground water supply. ASDSP is in line with the policy with regards to creation of created wetland vide fish ponds; promoting efficient techniques and technologies for harvesting and processing fish and other food products within wetlands; conservation measures that protect fish breeding grounds; rehabilitation and restoration of degraded mining sites. ASDSP will under the livelihoods component, explore opportunities set out in the policy for promoting sustainable extraction and utilization of products derived from wetlands and developing appropriate marketing infrastructure for wetland products for maximum benefits to the community. In doing so, as per the policy, the project should give priority to subsistence and environmental needs before considering commercial interests. The policy also guides the project while rehabilitating any wetlands, with preference being given to indigenous vegetation and biodiversity.

17. Tourism Policy (2010): The policy acknowledges that Kenya's tourism industry is closely linked to the ecological sustainable development of the country's natural and heritage resources. The policy also embraces the precautionary principle and the polluter and user pays principle. The principle also obliges all tourism sector investments to undertake EIA, while tourism related policies, plans and programmes undertake SEA. ASDSP is in line with the policy with income generating activities and opportunities in eco - tourism and community based projects.

18. Policies with a bearing with Social Development: Policies and legislation on social development have evolved overtime. To date, Kenya does not have one consolidated law to guide interventions in development. Reference is made to various laws and policies to guide interpretations on social dimension in development. Key among these laws is the Kenya Constitution 2010. This has a strong bill of rights that provides for socio-economic and legal protection of all citizens. The constitution further provides for Devolution. This aims at promoting social and economic development and recognizes the right of communities' to manage their own affairs and to further their development.

Further, Kenya's development blue print, the Vision 2030 has the social pillar as one of its 3 key pillars. Others are economic and political pillars. The vision recognizes the importance of social issues in propelling Kenya to higher levels of development. Specifically, the social pillar seeks to create just, cohesive and equitable social development in a clean and secure environment. The key focus of the social pillar is on the need to recognise regional and social disparities and more and genuine involvement of people including marginalized and vulnerable while doing development. Other National Development Plans have similarly focused on reducing poverty in the country. These include the National Poverty Eradication Plan 1999-2015, which was designed to address poverty as set out in the Millennium Development Goals (MDGs), particularly that of reducing poverty by half by 2015. The Government also prepared an Interim Poverty Reduction Strategy Paper for the period 2000-2003 which was followed by the Economic Recovery Strategy (ERS) for Wealth and Employment Creation prepared for the period 2003 -07. These plans laid special focus on community involvement in affairs that affected them.

Further, the government has over the years sought to take development decisions clossr to the people most affected by development Interventions. Some of the main mechanisms used include the District Focus for Rural Development (DFRD), establishment of devolved funds such as Constituency Development Fund (CDF), Roads Maintenance Funds, Women enterprise and Youth enterprise funds, Local Authority Transfer Funds etc. This notwithstanding, social dimensions of development has for long been entrenched in the government of Kenya development agenda. This is attested to by the presence of policies and sessional papers that sought to mainstream social considerations in development interventions. These include a) Sessional papers no. 7 & 8 on development of 1955 which guided the early phase of departmental work. From a broad point of view, the two were oriented towards bettering the lives of the people of Kenya, by helping them to help themselves. Social Dimensions in Development in Kenya are guided by various pieces of legislations, Sessional papers and presidential circulars. These include;

b) Social welfare policy, 1964 – This assigned the department of gender the mandate and responsibility to deal with welfare issues.

a) National Community Development Plan, 1964 – launched in February 1964. The plan emphasized the concept of community development as being "the democratic process of including people and government in planning and working for the type of society we wish for ourselves".

b) Sessional paper No. 10(1965) on the `Concept of African Socialism' emphasizes on community development programme aspects such as self help efforts and control system.

c) Sessional paper No. 7 of 1971 on National Social Welfare: - This places emphasis on social welfare development.

d) Cabinet memorandum 78 (b) of 1976 which established the Women's Bureau with the broad and general objective of development of strategies and design of implementation mechanisms that integrate gender concerns into national development process.

e) The National Policy on Gender and Development 2000, which provides guidelines on gender and development in the country.

f) Sessional Paper No. 2 of 2006 on Gender and Equality which provides a framework for gender mainstreaming in all sectors of the economy.

g) Action policy and the National Policy on Community Development, which are all still being developed.

There are institutions that guide the implementation of policies on social development, especially issues on gender mainstreaming in development. These include the National Commission on Gender and Development, the Department of Gender and Social Services and the District Gender and Social Development Committees. The government equally works clossly with civil society organizations, UN bodies, multilateral and bilateral donors in an effort to mainstream gender issues in development for women's empowerment

4.2: Relevant National Legislation to ASDSP SEA

1. **The Environmental Management and Coordination Act, 1999**: Prior to enacting this law, Kenya did not have consolidated legislation for the protection and management of the environment. Instead, 77 statues touching on various aspects of environment management were used. The EMCA provides, under the Second Schedule, a list of projects that must undergo EIA. Developers of any project are therefore required to submit a detailed EIA project report to NEMA for review. The expert review by NEMA of the project report will then advise on whether the project requires an EIA study or not. EIA is undertaken by registered experts and their report is submitted to NEMA. Both the EIA project report and the EIA study report are open for review by the public and individuals. Section 68 and 69 also states that the proponent must submit an Environmental Audit Report one year after commencement of the project, and thereafter undertake Self Audit. Strategic Environmental Assessments (SEAs) were not listed as requirement in EMCA but are mentioned under the EIA Regulations of particular relevance to Part 5 of the EMCA provides legal tools for sustainable management of the environment. Also of relevance is Part 6 of the EMCA, which provides for environmental impact assessment (EIA). This is in agreement with Principle 17 o f the Rio Declaration which extends the rule of prior assessment of potentially harmful activities to include those activities which have impacts solely within a state: "Environmental Impact Assessment (EIA), as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent National authority."

ASDSP specific agreement between GoK and GoS requires a Strategic Environmental Assessment to be carried out with special emphasis on the value chain development component. Given the consequences on the environment from the implementation of ASDS, it is essential from the onset for the stakeholders and decision makers to have relevant insights and recommendations which will be used to make ASDSP a programme which prevents, reduces and offsets negative environmental consequences while enhancing positive environmental benefits through its interventions. The countrywide coverage of the programme portents substantial consequences of its interventions necessitating a Strategic Environmental Assessment (SEA) to be undertaken which pays specific attention to the environment and the socio-economic issues. The information from the assessment will provide suggestions on potential environmental and socio-economic conditions to be addressed so as to realize sustainable development through the planned interventions. Strategic Environmental Assessment study will give cumulative impacts of the programme implementation but individual EIA studies will need to be carried out for projects and activities to ensure that the country's environment is not further adversely affected.

Pursuant to EMCA, NEMA has promulgated a number of environmental regulations of direct relevance to ASDSP:

- **Environmental (Impact Assessment) and Audit Regulations, 2003**: These Regulations stipulate how an EIA will be undertaken and what the EIA project and study report should contain. It also gives regulations on environmental audits (EAs), which the proposed project will be required to undertake later on. The regulations are thus important to the proposed project with regard to EIA and EA. Section 42 of the regulations also outlines what a Strategic Environmental Assessment (SEA) is and what it should entail. It vests the responsibility of carrying out an SEA on lead agencies in consultation with NEMA.
- **Environmental Management and Co-ordination (Water Quality) Regulations, 2006:** The new Water Quality Regulations provide for the protection of lakes, river, streams springs, wells and other water sources. This regulation also gives a minimum distance from a water body for which any development may be undertaken. The regulations also give quality standards for different water uses, and for effluent to be discharged into the environment.
- **Environmental Management and Co-ordination (Waste Management) Regulations, 2006:** The Waste Management Regulations set out standards for handling, transportation and disposal of various types of wastes. The regulations stipulate the need for facilities to resort to waste minimization or cleaner production, waste segregation, recycling or composting.
- **Environmental Management and Coordination (Conservation of Biodiversity, Access to Genetic Resources and Benefit Sharing) Regulations, 2006**: The Conservation of Biodiversity Act, sections 5-9, provides for the protection of endangered species, creation of an inventory and monitoring of their status, protection of environmentally significant areas, provision of access permits , and material transfer agreements and benefit sharing.
- **Environmental Management and Co-ordination (Fossil Fuel Emission Control) Regulations, 2006:** The Fossil Fuel Emission Control Regulations provide for acceptable emission standards in Kenya. Section 4 of the regulations states that any internal combustion engine for motor vehicles and generators must comply with the emission standards provided for in the First Schedule of those regulations. Section 8 provides that any person intending to use any fuel catalysts other than those permitted by the authority to discloss it and seek prior approval. Establishments (including construction sites and operational substation sites) that use generators as alternative sources of energy must take account of the regulation on the emission standards.
- **Environmental Management and Coordination (Air Quality) Regulations, 2008:** These regulations provide for the safeguarding of the ambient air quality and give guidelines to prevent and control air pollution. The first and s eleventh schedules of the regulations provide a list with associated emission limits of prohibited, controlled, and un-controlled air pollutants. The regulations also give ambient air quality tolerance limits.
- **Environmental Management and Co-ordination (Noise and Excessive Vibrations) Regulations 2009**: These regulations define noise as any undesirable sound that is intrinsically objectionable or that may cause adverse effects on human health or the environment. The regulations prohibit any person from making or causing to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment.

- **Environmental Management and Coordination (Wetlands, River Banks, Lake Shores and Sea Shore Management) Regulation, 2009:** These regulations provide for the protection of all wetlands on both private and public land. The regulations provide for sustainable exploitation of wetlands and are aimed at maintaining both the wetlands and hydrological, ecological, social and economic functions and services.

2. The Forest Act, 2005: This Act creates a new semiautonomous body, the Kenya Forest Service (KFS) and supportive institutions for management and conservation of all types of forests. This Act mandates the KFS to conserve and manage all forests. It also sets out the roles and responsibilities of communities in managing forests. KFS is also responsible for formulating policies regarding the management, conservation and use of all types of forest areas in the country. The Act embraces the concept of participatory forest management and gives particular consideration to formation of forest community associations (CFAs), which are recognized as partners in management. It enables members of forest communities to enter into partnership with KFS through registered CFAs. It also allows ease arrangements by interested groups to supplement Government efforts in plantation forest. With regards to ASDSP, the act is important in the engagement and participation of CFAs in participatory management of forests, and allowing the communities to accrue tangible economic benefits from conservation activities.

3. The Water Act, 2002: This Act provides for the management and developments, conservation, use and control of water resources and for the acquisition and regulation of rights to use water, to provide for the regulation and management of water supply and sewerage services. The Act provides for increased and deliberate focus on the two key sub-sectors: Water Resources Management (WRM) and Water and Sanitation Services (WSS). The Water Act commenced by virtue of Legal Notice No. 31 of 18th March 2003 and Legal Notice No. 158 of 29th August 2003 provided for a reformed legal/institutional framework for the management and development of Kenya's water resources and the provision of water services.

4. The Agriculture Act (Cap 318): This Act is the principal land use statute covering inter alia soil conservation, agricultural land use and conservation issues such as the preservation of soil fertility. The Act prohibits any land use practices that may intensify soil erosion. They prohibit cutting down or destroying vegetation on any land of which the slope is 35 per cent, except if the activity is done within the conditions sanctioned by an agricultural officer. Section 48 on land preservation rules prohibits the cultivation, cutting down or destruction of vegetation on any land of which the slope exceeds 20 percent. The rules stipulate strict regulations on the cultivation of any land whose slope is between 12 percent and 35 per cent when the soil is not properly protected from erosion. The Act also provides for protection of watercourses setting aside a riparian zone of a minimum two meters equivalent to the width of river to a maximum of 30 meters.

5. The Irrigation Act (Cap 347): This Act created the National Irrigation Board (NIB) and is being reviewed. It basically created tenant-based irrigation schemes which, though ideal at the time, are no longer ideal in the present times. In the current form the irrigation act does not give clear provisions for the management and coordination of irrigation activities. Further the irrigating communities are not empowered to participate in the planning and implementation of the schemes. Other acts clossly tied to the irrigation act are those for regional development authorities.

6. The Lakes and River Act, Cap 409, Laws of Kenya: This Act provides for protection of rivers, lakes and associated flora and fauna. The provisions of this Act shall be applied in the management of the WRM projects. The Act in its Part IV specifies that the Minister may make rules for protecting the bird or animal life on or in a lake or river. This Act in essence has an environmental accent specific to the use of lakes and rivers and maintenance of the same with respect to dredging and transportation.

7. The Fisheries Act, 1991 Edition: This Act (CAP 378) is an Act of parliament providing for the development, management, exploitation, utilization and conservation of fisheries. Fisheries, as defined by the act, include all living and non-living marine and fresh water animals. These animals constitute a large share of the water resources that need to be well managed. The Act has contributed positively to the promotion of extension and training services, research, and marketing and conducive fish management

infrastructure. It has further provided guidelines and auxiliary legislations on proper management of any fisheries. These include: fish management measures, registration and licensing, fishing methods and fishermen credit facilities.

8. The Public Health Act (Cap 242): Health and hygiene are particularly important where communities congregate for a shared resource such as water. Section 116 requires Local Authorities to take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and sanitary to prevent occurrence of nuisance or condition liable for injurious or dangerous to human health. Part IX Section 115 of the Act states that no person/institution shall cause nuisance or condition liable to be injurious or dangerous to human health. Such nuisance or conditions are defined under Section 118. Any noxious matter or waste water flowing or discharged from any premises into a public street or into the gutter or side channel or water house, irrigation channel or bed not approved for discharge is also deemed as a nuisance.

9. The Wildlife Act 2013: The Act deals with the protection, conservation and management of wildlife in Kenya. As per the Act, the overall mandate of KWS is to conserve and manage wildlife in Kenya. The Act however opens up the management of wildlife to other partners and even communities in collaboration with KWS. Further, the new Act proposes to establish Sunty wildlife area and committees which will incorporate locals and provide a platform for collaboration between the Service, communities, county governments, landowners and other stakeholders. The Bill also facilitates communities and landowners to benefit from revenues and other rights derived from use of wildlife resources within their regions. The bill further provides for compensation for wildlife damage and also provides incentives including payment for Environmental Services for wildlife conservation and protection. Under ASDSP the bill/act is important with regards to mitigation of human wildlife conflicts, and the management of the ecosystems in the country.

A number of other laws, as shown in Table 6, make up the legal/regulatory framework with relevance to ASDSP.

Table 7: Other Relevant Laws

Law of Kenya	Mandate
The Local Government Act, Cap 265	Provides for making by-laws and institutions by the Local County Councils. By-laws can be made on the governance of a project under the provisions of this Act.
The Registered Land Act, Cap 300	Provides for the absolute proprietorship over land (exclusive rights). Such land can be acquired by the state under the Land Acquisition Act.
The Land Adjudication Act, Cap 95	Provides for ascertainment of interests prior to land registrations under the Registered Land Act.
Labour Laws of Kenya, including Employment Act 2007	Deals with new conditions of employment and rights of workers, including paternity leave for fathers. All workers, including those employed during the construction phase, will be employed under this Act, which includes provisions with respect to minimum wage, working conditions and time, and also in the resolution of disputes.
The Factories and Other Places of Work Act (Cap 514)	Governs requirements for occupational health and safety at the place of work. The Factories Act identifies up to 43 requirements which include; observing high standards of cleanliness, avoiding overcrowding, constructing and maintaining adequate ventilation, and providing and maintaining suitable natural or artificial lighting, as appropriate. Once again, this will be of particular relevance to the construction phase and operation of temporary worksites, as well as to the operation of substation sites.
Traffic Act Cap 403	Prohibits air pollution through Section 51 which requires that motor vehicles use proper fuels. The Act requires that every vehicle be so constructed and used as not to emit any smoke, or visible vapour. The amendment further prohibits the use of any stationary internal combustion engine, discharging exhaust gas into the atmosphere without treatment.
The Lakes and River Act,	Provides for protection of rivers, lakes and associated flora and fauna. Part

Cap 409	IV of the Act specifies that the Minister may make rules for the protecting bird or animal life on or in a lake or river
National Museums and Heritage Act 2006	Gives provision for an area of land of cultural significance to be set-aside or acquired under compulsory provision and declared a protected area under Sections 34 and 35 of the Act. Monuments gazetted under this Act fall under the management of the National Museums of Kenya. Several of these monuments include forests of cultural and biodiversity significance.
The Antiquities and Monuments Act, 1983 Cap 215	The Act aims to preserve Kenya's national heritage by empowering the National Museums of Kenya to collect, document, preserve and enhance knowledge, appreciation, management and the use of these resources for the benefit of Kenya and the world. Through the National Museums of Kenya, many sites are protected by law by having them gazetted under the Act.
The Penal Code (Cap. 63)	Section 191 of the Penal Code states that any person or institution that voluntarily corrupts or foils water for public springs or reservoirs, rendering it less fit for its ordinary use is guilty of an offence. Section 192 of the same act says a person who makes or vitiates the atmosphere in any place to make it noxious to health of persons/institution in dwellings or business premises in the neighbourhood or those passing along way, commits an offence punishable by law.

4.3: Multilateral Environmental Agreements SDSP SEA

Kenya has ratified various international conventions that deal with the protection of the environment that may be directly or indirectly applicable to activities under the ASDSP. These are as follows:-

- **International Convention on Biological Diversity (CBD) of 1992,** which promotes the protection of ecosystems and natural habitats, respects the traditional lifestyles of indigenous communities, and promotes the sustainable use of resources.
- **National Biodiversity Strategy and Action Plan (NBSAP**)- The country is already reviewing this action plan so as to meet the Aichi Target which aims to halt loss by biodiversity by year 2020. ASDSP is in line with the CBD and NBSAP, including the Aichi target with regards to promoting local communities appreciating and valuing biodiversity so as to conserve and use it sustainably; suing area based conservation; and ensuring biodiversity conservation in agriculture and aquaculture.

- **World Heritage Convention (1972)**, Kenya is also party to this convention which is concerned with cultural and natural heritage. The convention deals with monuments and areas that are deemed to be of "outstanding universal value" in terms of beauty, science and/or conservation. Kenya has several sites that have been declared World Heritage Sites, such as Mt. Kenya's natural forests. Any deterioration or disappearance of such heritage is a loss to all the nations of the world. The importance of wetlands and water birds are also covered under the Ramsar Convention of 1971, which governs wetlands of international importance. The convention entered into force in Kenya in 1990 and Kenya is therefore committed to avoid degradation of wetlands under its jurisdiction. ASDSP is in line with this convention as it tries to conserve natural resources.

- **Agreement of the Conservation of Eurasian Migratory Water Birds (2001) and the African Convention on the Conservation of Nature and Natural Resources (1968)**- Kenya ratified this convention which seeks to protect migratory water birds and also conservation of nature and natural resources. It therefore important ensure that ASDSP value chain development recognizes and safeguards nature and natural resources.

- The **Convention on International Trade in Endangered Species of Wildlife Fauna and Flora** (CITES) 1973, which prohibits trade in species such as Dugongs and also in Ivory.

- **The United Nations Framework Convention on Climate Change (UNFCCC or FCCC)** is an international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, informally known as the Earth Summit. The

objective of the treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The treaty itself sets no mandatory limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the treaty is considered legally non-binding. Instead, the treaty provides for updates (called "protocols") that would set mandatory emission limits. The principal update is the **Kyoto Protocol**, which has become much better known than the UNFCCC itself. ASDSP is in line with this convention as it advocates for value chain development that promotes reduction in green house emission through afforestation programmes, use of biogas plants, and promoting energy efficient appliances.

- **The United Nations Convention to Combat Desertification (UNCDD):** Kenya is also a signatory to this treaty which aims to combat desertification and mitigate the effects of drought through national action programs that incorporate long -term strategies supported by international cooperation and partnership arrangements. The Convention, the only convention stemming from a direct recommendation of the Rio Conference's Agenda 21, was adopted in Paris on 17 June 1994 and entered into force in December 1996. It is the first and only internationally legally binding framework set up to address the problem of desertification. ASDSP is in line with the agreement by supporting establishment of an enabling regulatory/policy environment for equitable NRM and climate adaptation linked to VC development. Kenya is in the process of reviewing its National Action Plan over the next 18 months with UN/GEF support.

5.0: PUBLIC/STAKEHOLDER ENGAGEMENT ACTIVITIES UNDERTAKEN

The main focus of the SEA Study is **Value Chain Development** (Component 3) of the ASDSP. Its aims is to supports viable, equitable and long term commercialization of the agricultural sector as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups. The SEA report benefited from extensive stakeholders' consultations with a wide cross section of programme stakeholders. The consultations were undertaken from the programme stakeholders within the respective counties who would benefit from the implementation if the ASDSP programme. These stakeholders were drawn from line government ministries and departments, as well as the related projects with the ASDSP programme (NEMA, WRMA, NGOs - **see in the Appendixes for the full list of participants in these stakeholder forums).**

Seven (7) programme stakeholders meeting were held between 26th August and 9th of September, 2013. In order to engage stakeholders the client together with the consultant organized a total of 7 workshops with representatives attending from each of the counties in that region (the detailed list of stakeholders is attached in the appendix). The workshops were held as shown in Table 8.

Table 8: Workshop schedule in each various regions of Kenya

Coast Counties	Date	Workshop Venue
1. Mombasa 2. Kwale 3. Kilifi 4. Lamu 5. Taita- Taveta 6. Tana River	26/08/13	Mombasa - Mombasa Beach Hotel
Dry Lands Farming & Urban Counties Machakos	**Date**	**Venue**
1. Machakos 2. Makueni 3. Kitui 4. Kajiado 5. Nairobi	28/08/13	Machakos - Machackos ATC
Highlands – High Potential	**Date**	**Venue**

1. Nyeri 2. Murang'a 3. Kiambu 4. Meru 5. Embu 6. Kirinyaga	30/08/13	Nyeri – Wambugu ATC
Lake Victoria Basin	**Date**	**Venue**
1. Kisumu 2. Siaya 3. Migori 4. Homa Bay 5. Kisii 6. Kericho	02/09/13	Kisumu – Kisumu - Hotel
Western & North Rift	**Date**	**Venue**
1. Turkana, 2. West Pokot 3. Trans-Nzoia 4. Uansin-Gishu 5. Bugoma 6. Vehiga 7. Busia	03/09/13	Kakamega - Kakamega Golf Hotel -
South-Rift	**Date**	**Venue**
1. Bomet 2. Narok 3. Nakuru 4. Nyandarua 5. Laikipia 6. Elgeyo-Marakwet 7. Baringo	05/09/13	Naivasha - Morindat Training Centre
North –Eastern	**Date**	**Venue**
1. Tharaka – Nithi 2. Samburu 3. Mandera 4. Wajir 5. Marsabit 6. Isiolo	09/09/13	Isiolo - Isiolo ATC

The consultation meetings served two purposes. First they offered an opportunity for stakeholder sensitisation on the ASDSP project implementation. Secondly, they presented an opportunity for the SEA study team to gather data on issues relevant to the SEA study on the value chain development of the priotized value chains from the counties for inclusion in the ASDSP. Participants were first taken through the key highlights of the issues to be explored under the SEA study. This initial presentation got the participants to focus on the issues under focus. Presentations were made by the ASDSP team on the objective of the programme as well as the intended activities to be undertaken under the ASDSP programme. The consultant made presentations on the overview of SEA in Kenya, and explained the differences between the EIA and SEA processes. The consultant also introduced the aspects of the ASDSP programme and what was expected of the SEA study. The participants were then divided into groups in accordance to their respective counties so that they can develop management options for the value chain development in their counties.

Key Programme stakeholders that were engaged during the SEA study included:

- Farmers
- Private Sector
- Government (NEMA, ASDSP (County officers), WATER, FORESTRY, WRMA)
- Civil Society and NGOs

The stakeholders were asked to name and rank the prioritized value chain in their counties. Each of the counties stakeholders discussed the Value Chain issues in various focus value chains in their counties and provided the environmental issues affecting the value chain and suggested mitigation measures. The Policy, Legal, and Institutional Framework in each value chain development were discussed with stakeholders including direct, indirect and cumulative environmental impacts for each value chain and recommendations provided thereto.

Group Activities
The participants were divided into groups. Each of the groups tackled each of the following crops value chain development according to the prioritized crop in their respective areas.

Value Chain Analysis
The groups were required to undertake a full value chain analysis of the priority value chains in the region as sampled. e.g. Coast region priority value chain: Sea-Fishing, Cassava, African bird eye chilli, Mangoes, Local Poultry.

Stakeholders Analysis
Stakeholders are individuals or groups who make use of, have impact on, or are impacted by decisions regarding an activity. There is therefore need to do a stakeholder analysis to understand their level of influence and importance. They may be stakeholders-of-place or stakeholders of interest and sometimes they could be both.
The importance of stakeholder involvement/participation in SEA process is to:-

- Bringing a common undertaking and understanding of the value chain
- Enhancing accountability
- Improving value chain design
- Improving value chain performance and hence profit margins
- Entrenches feeling of ownership
- Aggregates efforts hence better marketing strategies
- Helps in dissemination of value chain design

In our analysis, the stakeholders constituted the **farmers, implementing officers, distributors, processors, traders, retailers, consumers, relevant agricultural research institutions and policy makers**.

Stakeholder Activity
The stakeholders were analysed along the value chain. This group activity aimed to;

- Identify and list all the stakeholders along the value chain within each of the priority value chains
- Explore ways of bringing more stakeholders in priority value chains and proposed new ones

Regulatory Framework
The groups described the regulatory framework in each of the sectors and how they affect the sector and compliance thereto. These includes:-

1. Institutions
2. Policy
3. Legislation

Activity

- Are there public policies that get in the way of the chain, or if changed may help it grow?

Social and Environmental Issues
This was the most important section of the group activity. This involved the description of environmental and social factors that underline the activities, impacts and mitigation measures. The groups analysed the underlying factors considering the different aspects and types of environments. The criteria included;

1. What are the Environmental Risks and Benefits of the existing value chain and possible new ones?
2. Can the value chain be made to have more significant multi-stakeholder involvement in chain development?
3. Is the value chain scalable?
4. Are there better alternatives to the value chain?
5. Can other value chains be developed of the same crop?

The groups developed environmental management and management plan at plenary time for each crop and made presentations to the entire seminar members. The outcome was a more responsive information on each value chain. The results were presented in the scoping report.

6.0: PREDICTION AND EVALUATION OF IMPACTS

6.1: Evaluation of severity of impacts

Table 9 can be used to assess the severity of impacts to the environment and livelihoods. Each of the value chain should be subjected into a severity test. The value chains with significant negative impacts can be modified or an alternative developed that has lesser impacts. If such value chains cannot be modified or varied either spatially or temporally, then they should be dropped. Impacts can be direct or indirect. It is also important to assess the cumulative impacts because some activities on their own may not pose a big threat, however over a longer period and collectively, the impact may become significant.

Table 9: Nature of Environmental and Social Impacts that Underline the Value Chain Development

	NO/ LITTLE SIGNIFICANCE	SOME SIGNIFICANCE	SIGNIFICANT	UNCERTAIN
BIOLOGICAL				
1. Habitat loss				
2. Deforestation			-	
3. Loss of biodiversity				
4. Species invasion				
5. Nutrient circulation – micro-organisms				
PHYSICAL				
1. Pollution				
2. Energy				
3. **Climate Change**				
4. Land Use Change				
HYDROLOGICAL				
1. Catchment degradation				
2. Over abstraction of water resources				
3. Pollution of aquifers (sea, lakes, rivers and ground water)				
PEDOLOGICAL				
1. Salinization				
2. Leaching				
3. Soil Erosion				
4. Compaction				
5. Pollution				
SOCIO-ECONOMIC				
1. Livelihoods Changes			+	
2. Social Institutions				
3. Employment				
4. Income Change				

	NO/ LITTLE SIGNIFICANCE	SOME SIGNIFICANCE	SIGNIFICANT	UNCERTAIN
5. Cultural Impacts				
6. Social Amenities				
7. Gender Equity				
8. Health Factors				
9. Food Security				
10. Education				
11. Shelter				

Table 10: Sector activities/projects in VCD that may have high potential environmental and social impacts

	VALUE CHAIN CATEGORY	PRODUCTION	PROCESSOR	DISTRIBUTOR
AGRICULTURE	• Cereal • Pulses (Green Grams) • Rice • Vegetables (Kales ...) • Fruits (Mangoes) • Tubers (Cassava, Sweet Potatoes, Irish Potatoes) • Beekeeping • Cash Crops (Pyrethrum) • Cash Crops (Cotton)	• Large Scale Agriculture Schemes • Irrigation Schemes • Chemicals Application and Disposal • Pest Management Methods • Introduction of Exotic varieties of Plants • Introduction of Exotic varieties / cultivars • Large Scale Beekeeping Schemes • Large Scale Pyrethrum Schemes • Large Scale Cotton Schemes	• Bulk Grain Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal • Bulk Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal • Waste Management • Fruit Processing Plant • Honey Processing Plants • Pyrethrum Processing Plant • Cotton Textile Plants	• Bulk Grain Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal • Bulk Storage Facilities • Animal Feed Milling • Chemicals Application and Disposal
LIVESTOCK	• Beef • Chevon (Goat) • Mutton • Camel meat	• Livestock Dips • Livestock Ranching • Chemicals Application and Disposal	• Abattoir • Slaughter Houses • Waste Management • Tanneries	
	• Dairy	• Introduction of Exotic Breeds of Livestock • Chemicals Application and Disposal	• Milk Processing Plants • Dairy Products Processing Plants (Cheese, Ice Cream ...) • Chemicals Application and Disposal • Waste Management	
	• Poultry	• Large Scale Poultry Schemes • Introduction of Exotic Breeds of Poultry • Chemicals Application and Disposal	• Poultry Slaughter Houses • Waste Management	
	• Beekeeping/Aviary	• Large scale aviary projects • Introduction of exotic bees • Security management	• Bee stings prevention	
FISHERIES	• Fish (Marine, Lakes, Rivers)	• Large Scale Fishing Schemes • Fishing Methods and Techniques (Nets, Lines ... etc)	• Fish Processing Plants • Waste Management	
	• Fish (Aquaculture Ponds)	• Large Scale Aquaculture Programmes	• Fish Processing Plants • Waste Management	

Some of the aspects of Component 3 entails supporting strengthening of systems for timely provision of climate forecasts to different VC stakeholders, in particular women, youth and other vulnerable producers. Timely access to such information will enable stakeholders to make appropriate decisions for adaptation to expected droughts and other climatic effects with regard to production for food security and for income. This will include support the design and implementation of systems through which relevant information will be passed from the national level to counties and from there to local communities. This will involve facilitating collaboration with local farmers and pastoralists, their organizations, and other relevant institutions. Working with indigenous knowledge systems will form part of the strategy where relevant. To be effective, it is necessary to recognize and address socio-cultural constraints to information access by men, women and youth in these communities.

Additionally, under this sub-component the ASDSP will also work to facilitate improved local access to relevant NRM and climate change adaptation technologies and to support the application of such technologies by VC actors, including by disadvantaged producers. The Programme will also support strengthening of advocacy capacity among local communities and producers as needed to influence local NRM/climate change related planning and establish community or VC based plans for resilience strengthening.

Partnerships and collaboration with other programmes and support actors is envisaged and is crucial to coordinate involvement, sharing of lessons learned, and to mobilize resources for strengthened resilience, climate change adaptation and NRM programmes led by these partners.

6.2: Potential Positive Impacts of VCD

1. **Improved Environment and Livelihoods:** The thrust of the programme is exploiting existing opportunities that both improve livelihoods, and the natural environment. This is because poverty contributes to environmental degradation which in turn reduces sustainable livelihood opportunities. The programme thus simultaneously addresses both social and environmental objectives. The improved environment will lead to viable, equitable and long term commercialization of the agricultural sector as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups. Additionally, an improved environment will arise as a result of improved and heightened environmental awareness within the each of the 47 counties. The awareness will be complimented with capacity building in sustainable management of natural resources through training which will in turn assist communities play an active role in reversing the degradation already in place. The county NRM officer within the ASDSP programme, should take a key role in ensuring the upcoming projects and activities do not lead to environmental degradation.

2. Improved water resources management: ASDSP is expected to realize overall environmental and social benefits in improved water resources management due to the nature of the projects expected to be implemented. These include enhancement of water –use efficiency and rationalization of water abstractions from rivers and springs; improved water supply; sound management and communities; remedial work on pollution and environmental hotpots; and protection of wetlands. All these will translate into cleaner water, improved water supplies; less water related conflicts, and improved sanitation and subsequently better health to communities.

3. Enhanced conservation of forests, soils, and other natural resources: ASDSP is also expected to realize environmental benefits from enhanced conservation of natural resources. This will effectively reverse environmental degradation taking place in various parts of the country and promote sustainable management of the natural resource base on which the communities depend for their livelihoods. This will translate into improved tree cover, reduced soil erosion, and improved conservation practices.

4. Climate change mitigation and adaptation: With sound agricultural practices, it will lead to forest restoration and overall tree planting will lead to improved carbon sequestration, thereby helping reduce the accumulation of CO2 in the atmosphere. Coupled with improved water flow, this will also enhance the capacity of local people to cope with climate change through livelihood adaptation. Amelioration of climate change will also arise from the use of efficient energy technologies, and other renewable energy technologies like biogas.

7. Improved incomes and livelihoods: Incomes and livelihoods will improve from increased food production through the adoption of value chain development processes. Incomes and livelihoods will also increase as a result of improved capacity of communities arising from training. The overall goal of the ASDSP is to support the transformation of Kenya's **agricultural sector into an innovative, commercially oriented, competitive and modern industry with a gender perspective that will contribute to poverty reduction, improved food security and equity in rural and urban Kenya**. Its purpose is: 'increased and equitable incomes, employment and improved food security of the target groups as a result of improved production and productivity in the rural smallholder farm and off-farm sectors'. It is based on the assumption that deepened and equitable commercialization of Kenya's agricultural sector, including at the smallholder level, will help to improve the availability and access to food in both rural and urban areas, and in so doing will reduce the need for food imports and food aid.

6.3: Potential Negative Impacts

The activities proposed under ASDSP can actually be described as mitigative measures for the ongoing environmental degradation in Kenya due to unsustainable agricultural practices currently being practiced. It is however important to consider any potential adverse impacts which can arise, as even mitigation measures themselves can give rise to some form of adversity, albeit of a comparatively lesser impact than that being mitigated. The identification of potential impacts is important so that measures to avoid, reduce or offset them are put in place in the project design and in the Environmental Management and Monitoring Plan (EMMP) or Framework (EMMF). Cumulative impacts are also a major consideration among the adverse impacts, as several small impacts may become significant when consolidated.

1. **Change in vegetation pattern**: This can arise from construction related activities which lead to clearing of vegetation. This includes construction of large scale projects like abattoirs, dams, factories, irrigation schemes, etc. This results in the clearing of a lot of vegetation in the form of trees, shrubs and undergrowth which in turn destroys some biodiversity and also reduces wildlife and other habitat. Vegetation also forms part of the overall life supporting resources for animals, and loss of vegetation will result in soil erosion and loss of soil moisture.
2. **Soil erosion**: This is closely tied to loss of vegetation which exposes the soil to soil erosion, lowers soil organic matter, soil carbon, and nutrients, reducing soil fertility and even biodiversity. Soil erosion may also arise from excavation works during any construction of abattoirs, dams, factories, irrigation schemes, etc. Soil erosion may lead to sedimentation of water bodies, especially rivers and dams, impacting on hydrology, freshwater stream flow, light penetration, and hydro electricity generation.
3. **Cumulative impacts:** These may appear insignificant but when the number of interventions and geographical coverage of the area is considered might be the most significant. Cumulative impacts include:-

4. **Compaction of soils:** This can arise from tractor and vehicle movement during cultivation, transportation of materials and persons, distributorship and during monitoring and evaluation activities. Compaction of soils can also arise from livestock convergence at watering points provided through project interventions. The compacted soils facilitate erosion especially at the onset of rains.

5. **Water Pollution:** This can arise from construction works. Others may arise from anthropogenic activities around project activities e.g. washing of clothes at springs leading to pollution downstream. Water pollution may also arise from use of chemicals and pesticides in irrigation projects as these might substantially increase nitrogen, nitrates, potassium, sulphites and phosphates in the soil with subsequent leaching into ground and surface water, potentially leading to eutrophication.

6. **Solid wastes:** These can arise during construction works e.g. from construction spoils, and wastes generated by construction workers in form of waste papers, and packaging materials. Solid wastes may result in subsequent soil pollution, foul smells, and if allowed to pile up or spread, to an eyesore. Solid wastes especially food, also have the potential for affecting some

wildlife behaviour as some become dependent on human foods. Littered plastic paper bags in conservation areas may be swallowed by animals leading to death.

7. **Air pollution:** This can arise from dust and exhaust fumes from vehicles and machinery used in site operations. Air pollution may also arise from foul smells arising from improperly disposed solid and liquid wastes.

8. **Noise:** This may arise from vehicular movement, construction machinery, and construction workers. Noise may impact on communities and animals in protected areas.

9. **Water Losses:** This may arise from burst pipes during construction and operation phases for domestic and irrigation projects. Water losses may also be experienced in irrigation schemes where excess water may be utilized.

10. **Water Logging:** This may arise in irrigation projects and may result in poor drainage and soil salination. This may subsequently impact on water quality in water bodies.

11. **Water-borne diseases:** This may increase as a result of stagnant waters which aid in breeding of disease pathogens and vectors like mosquitoes, nematodes giving rise to diseases like malaria and bilharzia.

12. **Over abstraction of water resources:** Irrigation agriculture uses a lot of water, yet it has become inevitable that crop production has to rely more and more on irrigation. This has been more necessitated by climate change. The consequences of this are more often over abstraction leaving downstream users with less water. Over abstraction may lead to drying of rivers and fresh water lakes, for example due to over abstraction and climate change Lake Chad is now a third of its former size.

13. **Water use conflicts:** Insufficient water for downstream users usually creates conflicts with upstream investment in the catchment. In the medium term it is expected that demand for water will increase as people learn better farming methods, for example, through irrigation. This will inevitably lead to changes in water resources usage which may trigger conflicts. Fortunately, potential areas of conflicts are well known by the community members and can be resolved at the community level.

14. **Increased accidents**: This may arise from occur during transport and construction phases as people handle different machines, tools and vehicles.
15. **Overuse of agro-chemicals:** The use of irrigation has led farmers to shift from traditional crop to grow new crops. The new crops require artificial fertilizers and pesticides and their use will increase substantially during the ASDSP period. Artificial fertilizers and pesticides these will impact on micro-organisms and thus overall soil fertility.

6.4: Alternative Progrmme options considered and compared against VC indicators

The ASDSP is a programme for implementation of the ASDS which is aligned with the MTIP 2010-15. Its emphasis is on increased equitable commercialization of the agricultural sector, including the small and medium scale, through support to profitable and sustainable value chains and/with the private sector as the driver. The programme aims to bring development partners together for complementarities and more efficient and fair use of resources. The lead technical focus of the ASDSP is on agribusiness and market development through making selected value chains more effective. The overall goal of the ASDS and ASDSP is to support the transformation of Kenya's agricultural sector into an innovative, commercially oriented, competitive and modern industry with a gender perspective that will contribute to poverty reduction, improved food security and equity in rural and urban Kenya. Its purpose is: 'increased and equitable incomes, employment and improved food security of the target groups as a result of improved production and productivity in the rural smallholder farm and off-farm sectors'.

This ASDSP under Component 3 supports viable, equitable and long term commercialization of the agricultural sector as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups. The major outcome areas of this Component include the following:

- Analysis and upgrading of value chains that can generate employment, ensure food security and increase incomes for diverse actors
- Increasing equitable market access by improving rural infrastructure and other trade-related interventions in collaboration with the private sector
- Improving equitable access to financial services
- Strengthening local value chain organizations to facilitate collective and equitable agreement on and pursuit of VC development activities
- Identifying and up-scaling promising, innovative and inclusive new value chains

Table 11: Indicators for the value chains health

Nature of Indicator	Quantitative Indicator Measurement
Employment creation	• Number of new persons employed in the VC • Number of persons from vulnerable groups employed in VC
Improved food security	• Amount of food crops harvested (in Metric Tonnes or Kg) • Diversity of food crops • Improved income
Increased market access	• Availability of markets options to farmers • Rate of participation of farmers in market transactions • Rate of participation of vulnerable groups in market transactions
Improved rural infrastructure	• Road network density • Connectivity Index • Improved Road usage and condition • Improved telephone communication rate
Improved access to financial services	• Number of VC beneficiaries members • Rate of financial accessibility by VC members • Rate of access to financial services by vulnerable groups
Improved rate of participation by government, farmers, private sector and Civil Society in value chain from local to national	• Number and types of participants in VC • Number of women involved in value chain • number of youth involved in value chain • number of vulnerable groups involved in value chain • Number of vulnerable groups involved in value chain leadership
Improved environmental awareness	• State of environmental awareness • Number of persons involved in environmentally friendly production

To meet the indicators given in Table 10, several strategies were considered including: -

Agro-ecological targeting: The ASDSP support programme is distributed in all the agro-ecological zones of Kenya because each region is unique in terms of agricultural potential. The agricultural potential is defined by rainfall amount, temporal distribution and frequency. Temperature and altitude are also a major consideration. The programme covers the 47 counties in Kenya and the intervention are spread through-out the main ecological zones of Kenya. The project staff together with local stakeholders undertook analysis of

the value chains which would work well in each of the specific agro-ecological zones for support. For example, one of the priority value chains for Kitui County was Gadam Sorghum which grows well in semi-arid regions while in Nyandarua County Ddairy cattle value chain was prioritized because is best suited for highland regions.

Sustainability: For sustainability and ownership, the programme chose to engage and work with local communities to implement project interventions particularly women, youth and vulnerable groups. The programmee has been building on the local capacity of local communities through awareness creation for VC members to sustainably manage their local natural resources, while at the same time deriving benefits from their conservation. The programme has its officers in each county who assist as extension officers to advise and provide support on sustainability of value chain development. ASDSP County officers also work with local stakeholders not only to support VCD but also make sure environmental and social issues are integrated in the VCD. Some of the main environmental considerations include:-

- Sustainable irrigation – where water conservation is emphasized
- Organic farming – promoting use of natural manure for farming
- Diversity in crops production
- Agroforestry – where friendly trees are planted in farm edges
- Wetland conservation – local wetlands are protected as they purify water and enhance biodiversity
- Reduced use of agro-chemicals, fertilizers and pesticides
- Promotion of integrated crop protection where the biological pest control methods are emphasized
- Climate change adaptation – planting drought resistance and fast maturing crops
- In food processing – practice cleaner production – promotion of reduced pollution at source, recycling and reuse practices
- Social sustainability- ensure women participation and governance structures that are inclusive

No action alternative. The "no action" or no project alternative would maintain the status quo of the situation in Kenya. As such, the ASDSP proposed interventions would not be implemented. This alternative would thus result in:-

- No improvement in the agricultural production in Kenya. There will be no equitable commercialization of Kenya's agricultural sector, including at the smallholder level, that would help to improve the availability and access to food in both rural and urban areas, and in so doing reduce the need for food imports and food aid.
- With rising populations, and with continued unsustainable exploitation of the natural resources, making the poverty–environmental degradation cycle even more vicious. Indeed, the project concept identifies poverty as the main cause of environmental degradation, which leads to even worse poverty levels in the long term. This makes the no project alternative both expensive and unacceptable to the local communities.
- The existing farming systems and their value chains currently experiencing the vagaries of climate change will continue to be affected if adaptation methods proposed in ASDSP are not implemented.

For the reasons mentioned earlier, there no better alternatives to the ASDSP current project design and proposed interventions.

6.5: Linkages with ongoing projects and how they fit in the proposed ASDSP

This section examines the experiences in implementing other programmes in the sector with the purpose of identifying best practices to inform the focus and approaches of the ASDSP. There have been a number of projects in the agriculture sector implemented by the Government with partnership with development partners. Many of these programmes had mixed success. One of these includes the National Agriculture and Livestock Extension Programme (NALEP) supported by Swedish International Development Agency (SIDA). A lot of these programs have major weaknesses for instance:-

- Although vertical integration along the value chain is encouraged through creating and promoting stakeholder forums, in practice, private sector involvement has been low.
- Extension staff are not trained value chain experts and generally have weak business understanding
- The majority lack capacity in market analysis that which can be transferred to farmers
- Many areas suffer from poor physical infrastructure such as a lack of bulking facilities and good roads, resulting in high post-harvest losses and inability to reach markets on time.
- Production and marketing groups (Common Interest Groups) do not necessarily work effectively and, evidence suggests that a significant number of groups collapse following withdrawal of donor support.

Drawing upon this analysis, the ASDSP will promote the commercialization of agriculture by developing a specialized value chain component (component 3) mainly working with and building upon existing institutions instead of creating entirely new institutional arrangements. To enhance horizontal integration of actors and strengthen governance among producers, local structures for organizing farmers / producers, like the CIGs, will be retained but systematically linked to value chain actors. Attempts will also be made to organize the groups into more formalized organizations like cooperatives and limited companies. It is expected that strengthening the market orientation of these institutions will enhance their sustainability. ASDSP will also promote improved information flows in various media among actors across the value chain.

- Progress on gender has been mixed. While female representation in decision-making bodies is quite high overall, this reflects in part the strong feminization of the smallholder sector in Kenya. The associated workload and household level stresses for women are not captured adequately in the statistics, nor is it clear whether female-dominated institutions are 'more successful' in reaching their aims: gender differences may be expected due to differences in the way women and men form social capital. In several parts of the country, extension workers report that women, particularly in male-headed households and in pastoralist areas, are hard to reach.
- Lack of a functioning sector-wide approach (SWAp) in the agricultural sector has impaired the ability of programmes in the sector to perform their expected role in advocacy and policy development at the macro-economic level. ASDSP will therefore contribute to the overall enabling environment through component 1 that aims to facilitate sector-wide co-operation in the agricultural sector. This includes providing support to the functions of ASCU, and its role in coordinating GoK and donor activities in the sector.
- Productivity successes in high-potential areas have generally not been echoed by similar successes in the ASAL. Overall, reliable data on productivity and production is lacking.
- Experience shows that food security for smallholder farmers is a result of a combination of increased and reliable harvest of basic staple food and a diversification of production towards commercial products. ASDSP will address the issue of food security for small-scale farmers, as increased and reliable production, as a means to enable small-scale farmers to be involved in and to benefit from market driven commercial production.
- Several programmes and initiatives in the sector have gained exceptional insights into the needs, constraints and opportunities of its producer clientele. ASDSP will build upon participatory planning and documentation procedures developed by deepening the effectiveness of these methodologies in capturing valid and useful gender-disaggregated baseline data on all farmer categories to enable the effective targeting of beneficiaries. Baseline data from existing sources in programmes and newly collected data will inform ASDSP monitoring and evaluation systems. Participatory value chain analysis will be included in the methods for participatory data collection and planning. Such analyses will be conducted with actors along the chain to (a) strengthen actor understanding of constraints and opportunities to value chain development, and to point ways to overcoming these, (b) lay the foundation for horizontal and vertical integration strategies, and (c) inform ASDSP components about the regulatory and policy constraints that need to be alleviated for successful value chain development.
- Experience suggests that without credit, producers cannot expand their market share or become fully effective value chain partners. ASDSP will address the issue of access to financial services by up scaling various models such as Kilimo Biashara, the Innovation Fund for Agriculture and Agribusiness, credit guarantee, co-financing and promoting insurance schemes through partnerships with the

private sector. Experiences with credit guarantees and insurance schemes will be analysed and up scaled to support the value chain.

7.0: ENVIRONMENTAL MANAGEMENT & MONITORING PLAN (EMMP)

This section forms the heart of the SEA where an Environmental Management and Monitoring Plan is provided. It outlines the measures to be taken during ASDSP value chain development and implementation and operation to control adverse environmental and social impacts and the actions needed to implement these measures.

The Environmental Management and Monitoring Plan (EMMP) is an expansion of the Mitigation Measures highlighted during the prioritization of the key environmental issues. The EMMP is for the various ASDSP Value Chain Development interventions and should be adapted to the actual situation on the ground that is - crop and location specific. The framework EMMPs should also be incorporated into the ASDSP Overall Programme Management Guidelines (OPMG). Feasible mitigation measures have been proposed in the EMMP in order to reduce potentially significant adverse environmental and social impacts. The EMMP is developed based on the activities presented in Table 10.

The value chain development spreads across diverse land uses. These land uses are defined by agro-climatic zones. In order to address the issues comprehensively, we have done EMMP for each of the major sectors namely:-

1. crop based value chain development
2. livestock based value development
3. fisheries based value chain development

Table 12: Crop based Value Chain Development Environmental Management and Monitoring Plan

Strategic Objective	Project Activities	Potential Impact Description	Recommendation	Responsibility & Partners	Verifiable Monitoring Indicators	Duration
Sub-component 3.2: Increase public and private investment in Value Chain Development	**Production** • Large Scale Irrigation Schemes • Introduction of exotic hybrid varieties of crops • Use of improved machinery – eg combine harvesters • Use of chemical fertilizers • Use of chemical pesticides • High use of fossil fuels for energy	- Soil Erosion - Reduced biodiversity - Salinization - Waterloggging - Pollution by dust - Emission of Green House Gases (GHG) - Polluion of surface & ground water resources - eutrophication - Pollution of soils by chemicals - Depletion of pollinators – eg –bees - Mutation of pesticides **Climate change** • Poor harvests • Frequency of droughts • Env. disasters (drought & Floods) • Pest resistance • Pest invasion - Poor harvests	• Soil conservation • Mixed cropping • Promote indigenous crops • Irrigate as per crop water requirement • Use none polluted water for irrigation • Use personal protective gear • Use manure as fertilizer • Reduce application of pesticides • Use biological pest control where possible • Training of farmers on good agricultural practices (GAP) • Monitoring pollution in water and soil • Servicing of machinery regularly • Plant drought resistant crops • Plant early maturing crops • Disaster preparedness • Water conservation	ASDSP – CCUs	• soil fertility analysis • soil structure analysis • analysis of crop chemical composition for heavy metals • conservation projects & activities on site • biodiversity analysis count • levels of env. Awareness • amount of fertilizer being used • change in amount of pesticides being used • reduced water pollution • reduced emission from machinery	Annual Review
	Processing Fruit and other foods processing. Cotton & pyrethrum processing	- pollution of soil - pollution of water resources - air pollution - emission of GHG - climate change - poor waste management	• ensure no spills • practice Clean Production – reduction of pollution at source • Reuse, recycle, reduce and repair of waste and material • Use of personal protective gear	ASDSP - CCUs WRMA,	Periodic Soil and water analysis. ASDSP / CCU Progress reports Number of capacity trainings done	Annual Review

Strategic Objective	Project Activities	Potential Impact Description	Recommendation	Responsibility & Partners	Verifiable Monitoring Indicators	Duration
	Social Issues	• marginalization of vulnerable groups • social ills • increased diseases	• inclusion of vulnerable groups (women, youth & disabled) • improvement of health facilities	ASDSP - CCUs	Agriculture Monitoring Reports	Annual
Sub-component 3.3: Increase equitable access to market	-Transport of goods to markets - Participation in market transactions - Access to credit	- Degradation of Rural Access Roads - Marginalization of vulnerable groups	1. Adequate allocation for maintenance of feeder roads 2. Inclusion of vulnerable groups in transactions governance structures 3. Access to credit to strengthen VC bargaining power	County public works, and Ministry of Public Works	- Number of county roads in motorable condition - % Number of persons from vulnerable groups participating in VCD market transactions - % Increase in access to credit	Annual
Sub-component 3.5: Up-scale and out-scale innovative and inclusive value chains and VC technologies	Systematic Evaluation of existing value chains structures, sizes, weaknesses and strengths for improvement	Environmental and Social costs	1. Ensure environmental considerations are integrated into the chain 2. Ensure social considerations are integrated into the VCD 3. EMPs are fully implemented and reporting to NEMA done also according to the EIA Guidelines.	ASDSP – CCUs ASDSP - CCUs, NEMA, WRMA, Targeted Groups and Other relevant Stakeholders, ESIA evaluation experts	- Monitoring & Evaluation of % Up-scale and out-scale innovative and inclusive value chains and VC technologies - Environmental and social benefits in the VCD - Environmental and Social Impact Assessments prior to project implementation. - Environmental Audits during operations.	Annual Review
	Environemental and social awareness of VCD benefits and costs	Environmental & Social costs	1. Increased capacity building of communities and extension officers 2. Increased stakeholders participation	ASDSP - CCUs, NEMA, WRMA, Targeted Groups and Other relevant Stakeholders, ESIA evaluation experts	% of promising VCs and best-practice VC technologies identified % of VCs and best-practice VC technologies piloted % and type of VCs and best-practice VC technologies used	Annual Review
Sub-component 2.1: Strengthen Environmental resilience for value chain actors, including	Analysis of environmental resilience of existing and proposed value chains	1. Enhanced awareness, knowledge and appreciation of NRM and CC causes/risks 2. Enhanced capacity for equitable engagement in	1. Enhanced use of climate smart technology inputs and /or land management/ husbandry resources by the actors 2. Enhanced training on climate adaptations	All stakeholders	Monitoring and Evaluation % increase in VC actors taking appropriate response measures on climate-related information, disaggregated by gender and vulnerability	Annual Review

Strategic Objective	Project Activities	Potential Impact Description	Recommendation	Responsibility & Partners	Verifiable Monitoring Indicators	Duration
vulnerable groups		local NRM/CC planning 3. Improved access to NRM/weather/CC adaptation advisory services and appropriate technologies				

Table 13: Livestock based Value Chain Development Environmental Management and Monitoring Plan

Strategic Objective	Project Activities	Potential Impact Description	Recommendation	Responsibility & Partners	Verifiable Monitoring Indicators	Duration
Sub-component 3.2: Increase public and private investment in VC Development. **Product & byproduct** • Beef • Chevon (Goat meat) • Mutton • Camel meat • Waste	**Production** • Overstocking • Livestock Dips • Ranching • Chemical sprays • Cattle Dips	• Soil erosion • Dust pollution • Overgrazing • Land degradation • Pollution of chemical during sprays • Pollution of ground & surface water resources from dips **Climate change** • droughts • floods • livestock deaths • locust invasions	• Ensure cattle numbers do not exceed carying capacity • Rotational grazing • Do not use permanent tracks to reduce dust • Emphasise on improved cattle breeds rather than numbers • Provide cattle extension services • Provide vet services support • Rehabilation of overgrazed lands • Do not locate cattle dips near rivers • Contain runoff from spray or dip to safety • Train cattle farmers on environmental management • Climate change adaptations • Climate change preparedness	ASDSP – CCUs	- Ranch health - Pasture health - Pasture biodiversity count - Frequency of gullies - Level and rate of pollution in soil and water	Continuous monitoring
	Processing • Abattoirs • Slaughter Houses • Waste Management • Tanneries	• soil erosion in holding yards • smell from offals • smell from hides & skin tanneries • dust pollution • pollution by blood of water and soil	• Hold cattle in flat grounds to reduce soil erosion • Location of abattoirs should be away from dense settlements • Location of tanneries should be away from dense settlement and downwind • Ensure waste from abattoirs and slaughterhouses is not disposed off	ASDSP – CCUs	- Level and rate of pollution in soil and water - Low air pollution - Low waste from factory - % of waste recycled	Monthly monitoring

		• emission of methane into atmosphere hence climate change • Noise pollution • Emission of Co_2 from vehicles	into the rivers or ground water aquifers • Use cattle waste to genearate biogas for energy • Link up with farmers who can use waste from factory			
Dairy **Products & Byproducts** • Milk Processing Plants • Dairy Products Processing Plants (Cheese, Ice Cream ...) • Chemicals Application and Disposal • Waste Management	**Production & Processing** • Introduction of Exotic Breeds of Livestock • Chemicals Application and Disposal	• threat to indigenous breeds • pollution from poor disposal of spray chemicals • methane emissions from waste dung	• ensure indigenous cattle are conserved • ensure spray chemicals are used as per vet prescription • ensure methane from cow dung is harnessed as source of energy • train farmers on organic farming • use research based advisory on best Dairy breeds and foods • sensitize farmers on climate change adaptations and building reselience • rehabilitate and maintain good road network • ensure participation of vulnerable groups in the value chain especially women • ensure women are involved in the market transactions and setting policies	ASDSP – CCUs Farmers, National & County Govt.	- Level and rate of pollution in soil and water - Low air pollution - Low waste from factory % of waste recycled	Monthly monitoring
Poultry	• Large Scale Poultry Schemes • Introduction of Exotic Breeds of Poultry • Chemicals Application and Disposal	• threat to indigenous chicken • development of chemical resistance of bugs • pollution of soil and water by spray chemicals	• promote indigenous chicken • provide poultry extension services • use chemicals as per the vet prescriptions • contail runoff from spray poultry pen • encourage formation of production groups for better marketing of chicken and its products • train chicken farmers (capacity building)	ASDSP – CCUs, National & County Govt.	- Number of farmers involved in indigenois chicken farming - Frquency of services provided by extension offices - Status of poutry Health	Coninuous monitoring
Beekeeping/Aviary	• Honey harvesting • Honey products processing	• Bee stings on humans and livestock	• Ensure aviary sites are fenced off • Ensure no unauthorised persons into the aviary site • Train farmers on aviary management • Ensure participation of vulnerable	ASDSP – CCUs National & County Govt.	Quality of honey produced	Continuous monitoring

			groups especially women, youth and diasbled • Ensure there are markets for honey & honey products • Ensure training on environemntal management in order to protect bees			

Table 14: Fisheries based Value Chain Development Environmental Management and Monitoring Plan

Strategic Objective	Project Activities	Potential Impact Description	Recommendations	Responsibility & Partners	Verifiable Monitoring Indicators	Duration
Increase public and private investment in **marine VC Development**	• Improved fishing gear • Improved fishing vessels • Improved storage of fish • Diversification in fisheries • Transportation of fish to markets • Marketing of fish • Waste management in processing factories	• Depletion of fishries stocks • Pollution of coastal fisheries • Straddling of non-target marine species • Disease outbrak if waste management is not improved	• Prevent illegal fishing • Control fishing rates • Control and regulate fishing gear • Map fishing zones and control fishing in sensitive environemnts • Reinforce ban of fishing in marine parks • Control development in fish landing sites • Control development in areas near shoreline • Strengthen Beach Management Units (BMU's) • Patrol regulary the EEZ for foreign irregal fishing vessels • Involve fishermen in setting fisheries guidelines and marketing issues • Monitor pollution of the coastal fisheries • Eliminate waste through recycling • Reduce energy use	ASDSP / CCU, MAL & F, County Govt.	- No. of fishing vessels licensed /year - No. of irregal fishing vessels arrested/sighted per annum - Type of fishing gear in operation - Status of fisheries - Capacity of fisher folk - Number of stakeholders involved in fishries value chain	Annual Review
Increase public and private investment in **aquaculture VC Development**	• Preparation of fish ponds • Improved storage of fish • Transportation of fish to markets • Marketing of fish	• pollution of fish ponds • water loss due to evaporation and seepage • risk of accidnts • entry of snakes	• prevent pond pollution • reduce water loss through evaporation and seepage • secure ponds from snakes and birds • secure ponds from kids and other animals	All stakeholders in fisheries	- Number of aquacutlture farmers - Increase in frequency of eating fish - Reduced water	Annual Review

Strategic Objective	Project Activities	Potential Impact Description	Recommendations	Responsibility & Partners	Verifiable Monitoring Indicators	Duration
		and fish birds into ponds	• Sensitization of Kenyans in non-fish eating areas to start consuming fish – this can be done in schools and market barazas • Creating climate change adaptation strategies • Improving rural access roads • Involving stakeholders in decision making on fish marketing		loss through evaporation and seepage	

Commercialization of Value Chain Development may result in the following impacts negative and positive impacts. The negative impacts have been mitigated in other parts of this report.

Table 15: Key Socio-economic and biological benefits and impacts of VCD

Value Chain Crop Category	Input Supplier Finance	Production -Impacts (e.g. Farmer / Fisherman / Pastoralist)	Processor -Impacts	Distributor -Impacts	Retailer - Impacts	Consumer -Impacts
• Cereal • Pulses (green grams)	• Conflicts due to local politics on supply • Improved standards of living • Increased life expectancy	• Food security • Employment creation • Improved Livelihoods • High quality products • improved prices • Conflicts due to local politics on supply	• Effluent discharge • Employment creation • Occupational diseases due to poor design of processing plants • Improved standards of living • Air pollution	• Employment creation • Increased traffic congestion • Improved quality of products through value addition • Better income to the processor • Improved standards of living	• Wealth creation • Poor storage hence threat to public health • Improved standards of living • Sustainable business	• Diseases due to poor or contaminated products • Improved standards of living • Job creation • Food shortage • Poor health • Improved health
• Rice	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply of poor seeds • Water borne diseases and pests infection • Conflicts due to local politics on supply • Improved standards of living	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Creates water conflicts • Child labor • Conflicts between farmers & organized cartels • Competition for natural resources • Improved education levels due to increased incomes	• Employment & wealth creation • Occupational diseases due to poor design of processing plants • Poor solid waste disposal • Improved quality of products through value addition • Better income to the processor • Increase in environmental diseases	• Employment & wealth creation • Increase in traffic congestion • Increase in draft animal abuse • Improved standards of living • Air pollution • Climate change	• Profit making • Wealth creation • Poor storage hence threat to public health • Child labor • Improved standards of living • Job creation	• Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated products • Improved livestock production from by products • Improved health • Poor health • Improved health

Value Chain Crop Category	Input Supplier Finance	Production -Impacts (e.g. Farmer / Fisherman / Pastoralist)	Processor -Impacts	Distributor -Impacts	Retailer - Impacts	Consumer -Impacts
		• Improved standards of living	• Improved standards of living			
• Dairy	• Employment & wealth creation • Pollution • Economic loss due to substandard inputs • Improved standard of living • Source of cheap green energy (Biogas) • Generation of green house gases. • Improved nutrition • Market competition leading to Conflicts • A wide variety of input sources	• Increased resource use (energy, Water etc) • Competition for natural resources • Reduced ground water recharge due to over extraction • Improved soil conservation technologies thus increased ground water recharge • Food security • Improved peace • Increased tax payment • Improved standards of living	• Increased raw material • More income • Improve employment capacity • Increased costs in waste management • Increased turnover	• Employment creation capacity • Increased pollution arising from increased transportation • Competition from distributors • Employment creation	• Increased customer base • Increased income • Improved Employment capacity • Conflict from suppliers straining retailer-supplier relations • Increased customer base • Increased income • Employment	• Improved health • Reduced diseases • Reduced prices of • the product • Increased availability • Of the product. • Improved health • Wider product • Choice
• Beef • Chevon • Mutton	• Business to input suppliers and financiers • Employment opportunities to input suppliers • Higher input demand • Bad loans/ non-performing • loss due to obsolete products • Abuse of agrochemicals • Business income	• Improved on-farm employment and income • improved livelihood • Resource use conflict • Overutilization of the resources • Zoonotic diseases eg. MCF, anthrax • Livestock death due to diseases/ drought/floods • -cattle rustling (human/human conflicts) • Resource use conflict • Land degradation • Livelihoods development	• Job creation • Foreign Exchange • Waste accumulation • Inadequate processing capacity(death losses) • Occupational Health Hazards • Improved living stds. • Over extraction of water resources • Waste menace	• Employment • Income generation • Improved stds of living • Traffic congestion • Improved living stds. • Environmental pollution (air, soil and water)	• Employment • Revenue Income generation • Zoonotic diseases eg anthrax • Beef deterioration • Containers (polythene and tins) • Improved living stds. • Deterioration of meat quality	• Food security • Improved nutrition and health • Lifestyle diseases • Zoonotic diseases eg. anthrax • Improved living stds. • Lifestyle diseases like gout, obesity, cancer
• Fish (marine, lakes, water bodies)	• Cross border conflicts (fish ponds mitigate against border conflicts) • Conflict between value chain actors • Conflicting policies	• Improved livelihood	• Foreign exchange • Degraded/conserved environment along the beaches	• Improved income • Improved Living standards	• Improved health	• Improved heatlh

Value Chain Crop Category	Input Supplier Finance	Production -Impacts (e.g. Farmer / Fisherman / Pastoralist)	Processor -Impacts	Distributor -Impacts	Retailer - Impacts	Consumer -Impacts
	• Increased water scarcity • Improved flood control through the use of fish ponds					
• Fish • (ponds)	• Employment & wealth creation • Livelihood improvement • Conflicts due to local politics • Improved livelihoods	• Increased income • Employment & wealth creation • eutrophication • Improved education levels due to increased incomes • Improved water harvesting technologies • Improved standards of living	• Increased income • Employment & wealth creation • Increased waste • Improved standards of living • Improved standards of living	• Employment & wealth creation • Livelihood improvement • Improved standards of living • Improved livelihoods	• Profit making • Wealth creation • Improved standards of living • Job creation • Improved livelihoods	• Improved nutrition • Food security • Healthy community due to affordable source of protein • Reduced vector borne diseases • Improved livelihoods
• Poultry	• Soil erosion & degradation • Habitat loss • Deforestation Loss of biodiversity • Employment & wealth creation • Side effects of prolonged use of pesticides and fertilizers • Destruction of ecosystem	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Reduced profitability due to high competition . • School dropouts • Chronic diseases • Good fertile soils	• Air pollution • Effluent discharge • Employment & wealth creation Increased soil fertility due to use of manure • Displacement of people • Destruction of ecosystem	• Air pollution • Employment & wealth creation • Reduced family ties • Family breakup	• Profit making • Wealth creation • Improved standard of living • Environmental pollution due to poor waste mgt	• Improved Standards of living via improved • nutrition & • health
• Vegetables (Kales ...)	• Employment & wealth creation • Economic loss due to supply of poor seeds • Increased demand for agro-chemicals • Demand for machinery/equipment • Marginalization- Elite capture-supply dominated by the chosen few. • Social ills-corruption, nepotism, HIV & Aids, drug abuse • Improved livelihoods • More profits	• Increased income • Enhanced living standards • High quality products • Employment & wealth creation • Competition for resources and services • strained workforce • Enhanced knowledge base among community e.g. farm planning. • Improved soil conservation. • Increased productivity • Improved per capita incomes	• Employment & wealth creation • Occupational hazards • solid waste disposal /mgt challenges • Improved quality of products through value addition • Better income to the processor • Increase in environmental related diseases • Improved standards of living • Improved standards of living • enhanced quality of	• Employment & wealth creation • Increase in traffic congestion • Opened transportation networks • Improved standards of living • Contribute to climate change e.g. GHG emissions • Air pollution • Climate change	• Profit making • Wealth creation • Storage and transport challenges • Improved standards of living • Job creation • enhanced lifestyles	• Improved nutrition & health • Food security • Health challenges-lifestyle diseases and effects of pollution • Improved health • Improved literacy levels • Enhanced Disposable income • Social ills-corruption, nepotism, HIV & Aids, drug abuse • Food security • Changes in lifestyles

Value Chain Crop Category	Input Supplier Finance	Production -Impacts (e.g. Farmer / Fisherman / Pastoralist)	Processor -Impacts	Distributor -Impacts	Retailer - Impacts	Consumer -Impacts
			products			
• Tubers (Cassava, Sweet Potatoes)	• Employment & wealth creation • Economic loss due to supply of poor seeds • Increased demand for agro-chemicals • Demand for machinery/equipment • Marginalization- Elite capture-supply dominated by the chosen few. • Social ills-corruption, nepotism, HIV & Aids, drug abuse • Improved livelihoods • More profits	• Increased income • Enhanced living standards • High quality products • Employment & wealth creation • Competition for resources and services • strained workforce • Enhanced knowledge base among community e.g. farm planning. • Improved soil conservation. • Increased productivity • Improved per capita incomes	• Employment & wealth creation • Occupational hazards • solid waste disposal /mgn't challenges • Improved quality of products through value addition • Better income to the processor • Increase in environmental related diseases • Improved standards of living • Improved standards of living • enhanced quality of products	• Air pollution • Employment & wealth creation • Increase in traffic congestion • Opened transportation networks • Improved standards of living • Contribute to climate change e.g. GHG emissions • Air pollution • Climate change	• Profit making • Wealth creation • Storage and transport challenges • Improved standards of living • Job creation • enhanced lifestyles	• Improved nutrition & health • Food security • Health challenges-lifestyle diseases and effects of pollution • Improved health • Improved literacy levels • Enhanced Disposable income • Social ills-corruption, nepotism, HIV & Aids, drug abuse • Food security • Changes in lifestyles
• Beekeeping	• Employment • Income Generation • Competition for business opportunities • Taxation • Exploitation of farmers • Wealth accumulation • Better living Standards • Reduced tree population	• Food Security • Employment • Income Generation • Tree Cutting • Air Pollution (Smoke) • Pollution • Taxation • Environmental Conservation, • Exploitation NR • pollination • Enhanced livelihoods • Wealth accumulation	• Employment • Increased income/profit • Poor Waste disposal • Pollution • Taxation • Increased commodities prices • Improved quality • Wealth accumulation • Waste accumulation • Land degradation	• Job Creation, • Air Pollution • Better living standards • Mechanical breakdown • Air pollution • Road destruction • Wealth accumulation • Road destruction	• Profit Making • Wealth Creation • Better living standards • Price fluctuation • competition • Wealth accumulation	• Medication • Improved nutrition • Better living standards • Improved health
• Cash Crops (Pyrethrum)	• Employment & wealth creation • Economic loss due to supply of poor seeds • Conflicts due to local politics	• Increased income • Employment & wealth creation • Conflicts among farmers in and outside cooperatives	• Air pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due	• Air pollution from dust & vehicle emissions • Employment & wealth creation • Livelihood improvement	• Increased income • Wealth creation • Improved standards of living • Job creation	• Improved Health • Improved living standards

Value Chain Crop Category	Input Supplier Finance	Production -Impacts (e.g. Farmer / Fisherman / Pastoralist)	Processor -Impacts	Distributor -Impacts	Retailer - Impacts	Consumer -Impacts
	• Improved livelihoods	• Improved education levels due to increased incomes • Improved soil conservation • Food insecurity • Improved standards of living	to poor design of processing plants • Improved quality of products through value addition • Improved standards of living	• Improved standards of living • Contribute to climate change • Air pollution • Climate change	• Improved livelihoods	
• Cash Crops (Cotton)	• Employment & wealth creation	• Employment & wealth creation • Reeducation of striga weed Infestation • Loss of Biodiversity (due to heavy use of chemicals) • Increased income • Improved Livelihoods • Use of Cotton Stokes for Fuel supply • Soil Degradation • Soil acidification • High cost of labour (its labour intensive) • Chemical Pollution due to inappropriate use of pesticides • Eutrophication of Water bodies • Species Invasion e.g Water hyacinth	• Creation of Employment • • Increase Income • Improved Livelihood • Competition from the international market and other synthetic products • Use of Cotton seed Cake for animal feeds • Pollution • Waste disposal challenges • Expansion of the livestock industry (e.g cattle, poultry • Social problems e.g Alcoholism,	• Creation of Employment • Increase Income • Improved Livelihood • Competition from the international market and other synthetic products • Enhancement of local cotton industry • Increase volume of trade of other commodities • Decline in trade of Second hand cloths	• Creation of Employment • Increase Income • Improved Livelihood	• High quality Textile products

Table 16 describes the Environmental Performance Monitoring Program for the ASDSP. The objectives of environmental performance monitoring are to ensure that the proposed mitigation measures are effective i.e., have the intended result.

Table 16: Environmental Performance Programme

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
PROGRAMME GOAL			
To support the transformation of Kenya's agricultural sector into an innovative, commercially oriented, competitive and modern industry that will contribute to equitable productivity, poverty reduction, improved food security in rural and urban Kenya.	G1: Increase in agricultural sector contribution to GDP G2: Rural poverty of male and female population reduced by 10% to 37.2% by 2014 G3: Number and frequency of famine alerts reduced G4: Male and female population depending upon food aid reduced by 5% by 2017	National statistics -Annual Economic Survey of PED and Vision 2030, Kenya Household Budget Survey, Monitoring reports	That the data is accurately collected and reflects the real situation in the population
PROGRAMME PURPOSE:			
To increase equitable incomes, employment and food security of both male and female target groups as a result of improved production and productivity in the smallholder farm and off-farm sectors.	P1: On-farm income increase by 5% p.a. in both male and female-headed households by 2017 P2: Off-farm income increase by 6% p.a. in both male and female-headed households by 2017 P3 Gender disparities in on-farm and off-farm incomes reduced by 20% by 2017 P4: Food and nutrition security level increase by 10% in both male and female-headed households by 2017 P5: Productivity for major food commodities increase by 10% by 2017 P6: Household asset index for women, youth and vulnerable groups increased	Programme impact assessment and surveys Periodic evaluation National/county statistic Poverty surveys Annual gender and age disaggregated socio-economic household Survey Annual value chain panel survey	Political will and support sustained for progressive commercialization Socio-economic stability in the country Stable macroeconomic environment with limited deterioration of trade for producers Normal climate conditions
MAJOR OUTCOMES:			
Component 1: Sector coordination A transparent system for realizing agricultural sector coordination and harmonisation and an enabling institutional environment for the realisation of ASDS developed	C1(a) Public spending on agriculture as a percentage of GDP from the agriculture sector	GoK economic development reports Vision2030/ASDS progress reports ASCU sector progress reports	Development partners supports sector-wide institutions Ministries in the sector cooperate for sector coordination Other actors in the sector

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
			join the coordination Political and socio-economic stability is sustained in the country
Component 2: Environmental resilience and social inclusion Environmental resilience and social inclusion of promoted in value chains strengthened	C2 (a) % increase in households who states that their response capacity to climate-related risks has improved, by gender and vulnerability C2(b) Proportion of vulnerable groups who states that they are able to engage in VCs	ASDSP/CCU Progress Reports NRM / CC adaption / mitigation adoption reports Qualitative and Quantitative Gender Assessment Reports VCD Reports Diversity disaggregated data (gender, economic, age and other social stratification) Qualitative surveys	NRM institutions and partners collaborate fully in the NRM / CC awareness building. Technologies suitable for the most vulnerable and the poorest of the poor can be developed and introduced. Community groups and CIG's can act in concert
Component 3: Value chain development Viable and equitable commercialisation of the agricultural sector promoted	C3(a): Turnover from traded agricultural commodities increase by 10% by 2017 C3(b) On farm employment increase by 5% p.a. by 2017, disaggregated by gender and vulnerability C3(c) Off farm employment increase by 6% p.a by 2017, disaggregated by gender and vulnerability C3 (d) % increase in number and types of agro-enterprises in VCs	Baseline survey and M&E reports Published yields and price data Agro-industry and market surveys Household surveys Annual value-chain panel surveys	Government policy supports/ favours the emergence of strong value chain organizations The market price of agricultural inputs and fuel remains stable Access to finance for VC actors progressively grows
OUTCOMES:			
Component One: Outcomes			

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
Outcome 1.1.: Sector-wide coordination and joint programming improved	1.1.1.1 % increase in funding to ASDS coordination mechanism; 1.1.1.2 % increase in ASDS coordination client satisfaction (functionality and outcomes) 1.1.1.3 Increase in horizontal and vertical outreach of ASDS coordination	ASCU annual and other reports Mid-Term and EoP Evaluation Reports	Development partners join and support sector-wide institutions Ministries in the sector cooperate for sector coordination
Outcome 1.2.: Sector institutions and capacities strengthened	1.2.1.1 % increase in fulfillment of performance contracts of key sector institutions at all levels 1.2.1.2: % increase in fulfillment of ASDSP performance 1.2.1.3 % increase in client/customer satisfaction	Capacity Analysis and Needs Assessment Report ASDSP Progress Reports	Appreciation of gender and VC approaches among stakeholders Efficient use of capacity-building resources in the sector.
Outcome 1.3 .: Linkages between key sector stakeholders (programmes, researchers, educational institutions, extensionists and VC actors) improved	1.3.1.1 % increase in proportion of VC actors satisfied with public and private agricultural services 1.3.1.2. % annual increase in proportion of farmers accessing public and or private agricultural services and infrastructure (by type) 1.3.1.3 % of VC actors showing sustained use of one or more relevant technologies and assets (by type)	ASDSP Progress Reports and Impact survey Stakeholders' reports Beneficiary perception reports	High participation of the private sector and / or civil society Programme ownership at middle and lower levels is high Actors willing to share their materials and training Clients find technologies useful. Programmes interested in cooperation and learning exchange with TWGs
Outcome 1.4.: Gender and vulnerability sensitive sector-wide M&E information systems developed and supported	1.4.1.1 % annual increase in proportion of stakeholders (by type) accessing sector-wide M&E services for various uses, including decision making 1.4.1.2 % of stakeholders showing sustained use of one or more sector-wide M&E services 1.4.1.3 % increase in proportion of stakeholders satisfied with sector-wide M&E services	Sector and ASDSP M&E reports ASDSP Progress Report Beneficiary perception reports	Data collection, analysis and reporting system of M&E/ICT platforms adapted to reflect capacities of input providers The technical content and market information is valuable for a wide range of stakeholders in very different conditions

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
Outcome 1.5: Appropriate sector-wide policies, strategies and regulations developed (VC, NRM/CC/social protection)	1.5.1.1 Sector policies, strategies and regulations in use	Sector and ASDSP M&E reports ASDSP progress Reports	Policy-makers and Parliament promulgate policies
Component Two: Outcomes			
Outcome 2.1 Environmental resilience for value chain actors, including vulnerable groups promoted	2.1.1 % increase in VC actors taking appropriate response measures on climate-related information, disaggregated by gender and vulnerability		
Outcome 2.2 Enabling conditions that enable vulnerable groups to engage in value chain development strengthened	2.2.1 % change in productive asset access, disaggregated by gender and vulnerability 2.2.2 % of vulnerable groups who states that existing community organizations enhances their engagement in VCs		Capacity building programmes for VC organizations emphasizes governance Capacity building programme for VC organizations involves accompanying the VC organizations for the long term
Component Three: Outcomes			
3.4.1: Inclusive value chain organizations developed	3.4.1.1 % increase in number of actors who are members of VC organizations, by gender and vulnerability 3.4.1.2 Proportion of horizontal VC organizations capable of meeting the production and marketing needs of their members by gender and vulnerability	ASDSP / CCU Progress Reports MOA reports Service providers/Operators reports	
3.2.1: Public and private investment in VC development increased	3.2.1 increase in number and types of investments under PPP and by VC actors	ASDSP M&E/Progress Report Beneficiary perception reports	Private sector responds to opportunities and incentives provided by government for agribusiness

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
3.2.1: Equitable access to market increased	3.2.1.1 Quantity and Value of agricultural products marketed	ASDSP / CCU Progress Reports Service providers/Operators reports Household surveys	Entities created for such aspects as sanitary, phytosanitary and food safety systems are operating well with adequate supporting legislations
3.3.1: Access to affordable financial and insurance services for value chain actors improved (including women, youth and other vulnerable groups)	3.3.1.1 % increase in VC actors using financial services by type, gender and vulnerability 3.3.1.2 % increase in proportion of enterprises using financial and insurance services of formal financial institutions 3.3.1.3 % increase in lending portfolio to agricultural value chain actors	ASDSP / CCU Progress Reports Service providers/Operators reports Household surveys	
3.5.1 Innovative and inclusive value chains and VC technologies up-scaled and out-scaled.	3.5.1.1 % increase in VC actors engaging in new VCs and using new VC technologies	ASDSP/CCU Progress Reports	
OUTPUTS:			
Sub-Component 1.1: Sector-wide coordination and joint programming improved			
1.1.1 ASDS coordination institutions strengthened 1.1.2 ASCU supported in soliciting funding for operation of ASDS coordination mechanism 1.1.3 ASCU supported in establishing joint sector programming and financing mechanisms 1.1.4 ASCU supported in strengthening DP adherence with Code of Conduct	1.1.1.1 Functional operational mandates and procedures exist for NF, ICC, TC, TWG and ASCU 1.1.2.1 % increase in funding allocated to ASDS coordination from GoK and DP sources 1.1.3.1 Joint sector programming and financing mechanism in place 1.1.3.2 No. of DPs funding ASDSP 1.1.4.1 % increase in programmes adhering to CoC	ASCU Annual Reports	ASCU agrees to do functional review and "system strengthening" DPs willing to support ASDS-CM and joint programming
Output 1.1.5: ASDSP coordinating structures established and operationalised	ASDSP steering, coordination and management structures in place and functioning in accordance with sector-wide approach (PSC, CSC, NPS, CCU) Operational procedures and guidelines reflecting ASDSP's sector-wide approach applied Technical and operational capacity	ASDSP Progress Reports	
Sub-Component 1.2:.Sector institutions and capacities at all levels strengthened			
Output 1.2.1 Capacity of ASDSP coordinating	1.2.1.1 % ASDSP stakeholders expressing satisfaction with	ASDSP / CCU Progress Reports	

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
structures strengthened (individual /Organizational/ Contextual)	programme performance 1.2.1.2 Ratio of posts filled by qualified staff		
Output 1.2.2: Capacity of selected sector institutions of relevance to ASDSP mandate strengthened (individual /Organizational/ Contextual)	1.2.2.1 % of institutions' stakeholders expressing satisfaction with the institutions' performance 1.2.2.2 Ratio of posts filled by qualified staff 1.2.2.3 No of institutional capacity plans being implemented	ASDSP / CCU Progress Reports Capacity survey reports Beneficiary perception reports	
Sub-Component 1.3: Linkages between sector stakeholders improved			
Output 1.3.1: Issued-based partnerships supported Output 1.3.2: Appropriate technologies developed	1.3.1.1 No. and types of functional partnerships 1.3.2.1. No. of technological packages adopted by VC actors	ASDSP / CCU Progress reports. R/E mapping and gap analysis report	R/E stakeholders interested in strengthening of horizontal and vertical linkages
Output 1.3.3: Collaboration between key sector agencies and programmes established	1.3.3.1 No. and types of partnerships 1.3.3.2 No. of sector programmes integrating operations 1.3.2.3Functioning of TWGs	ASDSP / CCU Progress reports.	
Sub-Component 1.4: Sector-wide M&E and information management systems developed and supported			
Output 1.4.1: ASCU's establishment of sector-wide M&E and information systems supported.	1.4.1.1 Functional sector-wide M&E system and information systems in use	ASDSP Progress Reports ICT inventory and gap analysis report ASDSP website	ASCU and sector stakeholders actively pursue establishment and usage of sector M&E and information systems
Output 1.4.2: ASDSP M&E and information system established	1.4.2.1 Functional ASDSP M&E information system in use	ASDSP Progress Reports ASDSP information & M&E system usage data	
Output 1.4.3 Selected sector information management systems strengthened	1.4.3.1 Functional communication mechanisms including interactive ICT platforms to provide agricultural information in use		
Sub-component 1.5: Appropriate sector-wide policies, strategies and regulations supported			

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
Output 1.5.1: Sector-wide policies, strategies and regulations prepared and rolled –out	1.5.1.1 No and types of polices, strategies and regulations prepared and rolled out 1.5.1.2 No and types of implementation frameworks established and in use	ASDSP Progress Reports ASCU Annual Reports Policy, strategy documents	Policies, strategies and regulations passed by competent authorities
Sub-component 2.1: Environmental resilience strengthened for value chain actors, including vulnerable groups			
Output 2.1.1: Awareness, knowledge and appreciation of NRM and CC causes/risks enhanced among VC stakeholders in general and vulnerable groups in particular	2.1.1.1No. of public and private service providers involved in training VC actors on NRM and CC related risks 2.1.1.2 No. of VC actors trained on NRM and CC – related risks, by gender and vulnerability 2.2.1.3 No. of VC actors' trained early warning agents, by gender and vulnerability	ASDSP Progress Reports Bi-annual NRM / CC adaption / mitigation adoption report Gender Assessment Reports	(s) Mitigation and adoption measures are affordable for small farmers
2.1.2: Equitable access to and use of NRM/weather/CC adaptation advisory services and appropriate technologies enhanced, particularly for vulnerable groups	2.2.1.1 No. of VC actors using weather, seasonal forecasting and / or climate scenarios information, by gender and vulnerability 2.2.2.1No. of VC actors using climate smart technology inputs and /or land management resources, by gender and vulnerability	ASDSP VC Panel Survey Reports ASDSP / CCU Progress Reports	(u) NRM / CC advisory services include information specific to vulnerable groups.
2.1.3: Equitable engagement in local NRM/CC planning promoted	2.1.3.1 No. of VC actors trained in local NRM/CC planning, by gender and vulnerability 2.1.3.2 No of VC actors involved in climate risk management plans development at local level, by gender and vulnerability 2.1.3.3 No. of NRM/CC related elements in approved plans that can be attributed to advocacy by ASDSP supported VC groups	ASDSP / CCU Progress Reports	
Sub-component 2.2 Conditions that enable vulnerable groups to engage in value chain development strengthened			
Output 2.2.1: Access to social protection and security services by vulnerable groups improved	2.2.1.1 No. of VC actors using social protection services, disaggregated by gender and vulnerability 2.2.1.2 No. of service providers providing social protection and security services 2.2.1.3 No. and range of social protection services/products provided	ASDSP / CCU Progress Reports	
Output 2.2.3: Community action capability enhanced through support to establishment and functioning of community groups/links to local	2.2.3.1 No. of VC actors involved in decision-making at local level , by gender and vulnerability 2.2.3.2 No. of functional producer CIGs linked to VCs	ASDSP / CCU Progress Reports	

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
CS agents	2.2.3.2 No. of community organizations with internal governance systems		
Sub-component 3.1: Inclusive value chain organizations developed			
Output 3.1.1: Inclusive linkages along the VCs improved (vertical and horizontal)	3.1.1.1 No. and types of VC organizations 3.1.1.2 Number of actors who are members of VC organizations, by gender and vulnerability 3.1.1.3 Number of VC organizations with functional linkages	CCU Progress Reports County VC Reports	
Output 3.1.2: Value chain organizations' advocacy and lobbying capacity strengthened	3.1.2.1 No. and types of issues from the VC platforms addressed in regulations, plans and budgets	ASDSP / CCU Progress Reports County VC Reports	
Output 3.1.4: VC actors' business management skills enhanced.	3.1.4.1 Number of VC actors implementing viable business plans, by gender and vulnerability	ASDSP Progress reports County VC Reports	
Sub-component 3.2: Public and private investment in VC development increased			
Output 3.2.1: PPPs developed	3.2.1.1 No., type and coverage of infrastructure projects established under PPP		
Output 3.2.2: VC actors' investment increased	3.2.2.1 No., type and coverage of projects by VC actors		
Sub-component 3.3: Equitable access to market increased			
Output 3.3.1: Access to market information improved	3.3.1.1 No. of VC actors using market information, by gender and vulnerability 3.3.1.1 No. of VC actors participating in formal market arrangement		
Output 3.3.2 Technical capacity for pre- and post production management improved	3.3.2.2 No. of VC actors undertaking value added initiatives, by gender and vulnerability 3.2.4 No. of VC actors using improved post production management practices, by gender and vulnerability		
Sub-component 3.4: Access to affordable financial and insurance services for value chain actors improved			

NARRATIVE / HIEREARCHY OF OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	RISKS AND ASSUMPTIONS
Output 3.4.1: Access to socially inclusive financial services strengthened	3.4.1.1 Number of VC actors using financial services, by gender and vulnerability 3.4.1.2 Number of financial service providers and type of products	CCU / County VC report Credit Institution Reports CCU Progress Reports	Banking sector responds to opportunities and incentives provided through the programme
Output 3.4.2: Access to agricultural insurance services strengthened	3.4.2.1 Number of VC actors using insurance services 3.4.2.2 Number of agricultural insurance service providers and type of products	CCU Progress Reports County VC report	
Sub-component 3.5: Innovative and inclusive value chains and VC technologies up-scaled and out-scaled			
Output 3.5.1: Capacity of VC actors to identify promising VCs and VC technologies strengthened	3.5.1.1 No. of promising VCs and best-practice VC technologies identified	ASDSP Progress Reports	
Output 3. 5.2 : Support mechanism for up-scaling and out-scaling established	3.5.2.1 No. of VCs and best-practice VC technologies piloted 3.5.2.2 No. and type of VCs and best-practice VC technologies used		

Table 17: Summary of Environmental Management and Monitoring Plan (EMMP)

		PRODUCTION		
		Activity	**Issue**	**Recommendation**
AGRICULTURE		• Large Scale Irrigation Schemes • Use of heavy Machinery in tillage • Chemicals Application and Disposal • Pests Management Methods • Possible introduction of hybrids varieties of Plants & cultivars • Possibility of introducing Genetically Modified Organisms (GMO's)	• Habitat loss • Soil erosion • Emission of Greenhouse Gases (GHS) • Spraying may affect non-targeted insects • Chemical pollution of surface and ground water resources • Eutrophication • Deforestation • Loss of biodiversity • Species invasion • Salinization • Loss of local gene pool • Climate change	• Wetlands conservation • Forests conservation, re-afforestation • Practice agro-forestry • Protect floral & faunal biodiversity • Practice Integrated Pest Management (IPM) • Use energy conservation & renewable energy • Reduce Greenhouse gases emissions • Conserve indigenous varieties • Control runoff from farms • Ensure all precautions are taken before introduction of hybrids • Involve Kenya Biosafety Authority before Introduction of GMOs • If new varieties have to be introduced rigorous procedures must be carried out involving KARI, KEPHIS and other stakeholders
LIVESTOCK	BEEF (CATTLE &	• Livestock schemes • Livestock Dips • Livestock Ranching • Chemicals Application • and Disposal	• Soil degradation • Desertification • Over application of spray chemicals • Poor disposal of spray chemicals • Climate change	• Use ranching in pastoralism areas • Emphasize on livestock quality rather than numbers • Use spray chemicals as per vet prescription • Dispose chemicals as per manufacturer's directions • Reduce Greenhouse gases emissions
	DAIRY	• Introduction of Exotic • Breeds of Livestock • Chemicals Application and • Disposal	• Gene pool depletion • Pollution of water & soil resources • Climate change	• Conserve indigenous breeds • Dispose chemicals as per manufacturer's direction • Use chemicals as per vet prescription • Practice organic agriculture • Use biogas for energy source
	POULTRY	• Large Scale Poultry Schemes • Introduction of Exotic breeds of Poultry • Chemicals Application and Disposal	• Gene pool depletion • Spread of poultry diseases • Diseases resistance	

	BEE KEEPING	• Large scale aviary projects • Introduction of exotic bees	• Bee attacks • Colony Collapse Syndrome	• Ensure beehives are in secure place from public & animals • Do not introduce exotic bees without authority
FISHERIES		• Large Scale Fishing Schemes/Projects • Fishing Methods and Techniques (Nets, Lines … etc)	• Depletion of fisheries • Straddling of non-targeted species • Pollution of fisheries	• Fishing as per authorities regulations • Use nets as per ministry direction • No fishing without license • Return non-targeted species back to water
		• Large Scale Aquaculture Programmes	• Pollution • Depletion of water aquifers • Loss of water by evaporation	• Use aquaculture as per the ministry's direction • No aquaculture ponds in dry areas

	PROCESSOR		
	Activity	**Issues**	**Recommendation**
AGRICULTURE	• Bulk Grain processing & Storage Facilities • Animal Feed Milling • Chemicals processing & storage • Waste Management • Fruit Processing Plant	• Grain weevils attack • Grain contamination • Animal Feeds contamination • Chemicals contamination • Poor waste management	• Treatment of grain • Ensure safety of grain from contamination • Use safe packaging
LIVESTOCK – BEEF (CATTLE & SHOATS)	• Abattoir • Slaughter Houses • Waste Management • Tanneries	• Pollution of water resources • Soil pollution • Air pollution	• Locate abattoirs away from water sources • Neutralize tanneries smells • Do not dispose waste in rivers • Recycle abattoir waste
LIVESTOCK – DAIRY	• Milk Processing Plants • Packaging Plants • Dairy Products Processing Plants (Cheese, Ice Cream …) • Chemicals manufacture & Disposal • Waste Management	• Waste management • Chemicals waste management	• Ensure safe packaging • Reduce use of plastics in packaging • Segregate waste • Recycle waste

	POULTRY	• Poultry Slaughter Houses • Waste Management		
	BEE KEEPING	• Bee stings prevention • Colony Collapse Syndrome (CLS)		• Secure beehive areas from humans & livestock • Monitor colony health
FISHERIES		• Fish Processing Plants • Waste Management • Fish Processing Plants • Waste Management	• Waste management	• Ensure fish processing plants are away from air ports and air routes • Ensure waste is recycled

	DISTRIBUTOR		
	Activity	**Issues**	**Recommendation**
AGRICULTURE	• Bulk Grain Storage Facilities • Animal Feeds Distribution • Chemicals Distribution	• Grain weevils attack • Pests mutation • Pests resistance • Traffic accidents • Climate change	• Ensure safe storage • Ensure safe traffic control • Conserve energy
LIVESTOCK – BEEF (CATTLE & SHOATS)	• Meat Distribution • Skin & hides processing	• Waste Management • Tanneries foul smell	• Ensure safe traffic control • Neutralize foul smell from tanneries
LIVESTOCK – DAIRY	• Milk Distribution • Dairy Products distribution (Cheese, Ice Cream ...) • Chemicals storage, distribution & Disposal • Waste Management	• Traffic accidents • Disposal of expired products • Contamination of chemicals • Waste management • Climate change	• Recycles waste • Store chemicals as per manufacturers direction • Conserve energy

	DISTRIBUTOR		
	Activity	**Issues**	**Recommendation**
	POULTRY • Poultry Slaughter Houses • Waste Management		
	BEE KEEPING • Bee stings prevention	• Honey products adulteration • Products contamination	• Ensure safety guarantee of products by KeBS or other authorities
FISHERIES	• Fish Products Distribution • Waste Management	• Contamination of fish • Waste management • Climate change	• Ensure prescribed food safety guidelines are followed • Recycle fish waste

Table 18: Socio-Economic Impacts

Issue	Recommendation
• Marginalization of vulnerable groups	Ensure improved livelihoods to all rather than few -participation of all stakeholders in value chain and equity in sharing production benefits
• Vulnerability of Social Institutions	strengthen social institutions through mentorship and regular community social forums
• Employment	Ensure fair employment policy (employment of local labour, gender consideration and vulnerable groups)in value chain development programmes
• Fair Income distribution	Ensure fair income distribution throughout the value chain
• Cultural Impacts	Ensure there are cultural safeguards in value chain development
• Social Amenities	Ensure fair distribution and access to social amenities brought by value chain
• Gender Equity	Ensure gender participation in the value chain development and benefits sharing
• Vulnerable groups	Ensure VCD promotes vulnerable groups – women, children & the disabled
• Health Factors	Ensure value chain promotes social cohesion and community health
• Food Security	Ensure VCD promotes food security by ensuring there not all food produced is exported and that food crops are produced for household use
• Education	Ensure VCD promotes transfer and strengthens formal & informal education
• Shelter	Ensure VCD promotes healthy & dignified shelter for local producers

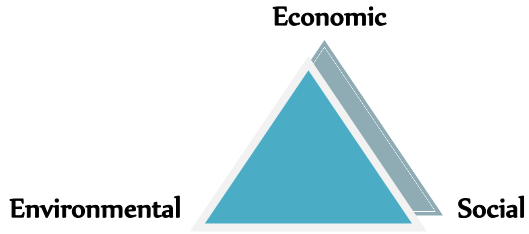
8.0: STRATEGIC RECOMMENDATION PRINCIPLES

A sustainable Value Chain Development should have key tenets of the green growth best practices. Our recommendations are that VCD should deliver sustainable agriculture that has the following tenets:-

1. **Sustainability**
2. **Equity and inclusiveness**
3. **Good governance in the value chain and accountability and,**
4. **Resilience**
5. **Efficiency and sufficiency**

8.1: The Sustainability Principle in VCD

To achieve sustainability of value chain, it is vital to integrate socio-economic and environmental considerations into the value chain. Every value chain must recognise that a healthy environment is the basis for sustainable development and cannot be replaced by any form of manipulation.



A sustainable value chain development should also seek to restore lost crop biodiversity, crop gene pool and also link agriculture with the natural systems and rehabilitate those that are degraded because there is a strong positive link between that which is in the wild and that in the farm. It must not violate, disrupt, or overstep ecological boundaries and limits and should commit to co-operate within them, including reducing pollution, safeguarding ecosystems, biodiversity integrity, other natural resources including air, water, soil, and biogeochemical cycles. It should ensure that environmental integrity is maintained before allocating resources among competing uses in the value chain. Value chain development should also support and respect all form of life, apply precautionary principle in development, assess the potential impacts of new technologies in VCD and innovations before they are released to the users.

8.2: The Equity and Inclusion Principle in VCD

Value chain development in agriculture should reinforce equity between people of same generation (inter-generational equity and people of different generations (intra-generational equity). What we do in our development should not widen the difference between the poor and the rich. If we protect the environment, the basic requirements of life will be available, that is – clean air, water and food. The poor will not need to buy bottled water because the rivers will provide clean water. The forests will provide fruits and foods and hence the poor will not entirely be depending on markets.

Value chain development should respect human rights, cultural diversity and should promote gender equity. It should recognise knowledge, skills and experience of all stakeholders and must not marginalise vulnerable groups of women, disabled and indigenous peoples' rights to land, territories and resources

A values chain development should aim at alleviating poverty, food security and access to basic health, education, sanitation, clean water, energy and other essential services.

Value chain development should also be based on transparency, sound science and the visible engagement of all relevant stakeholders. No groups should be marginalised from local to global and should empower all citizens (including young and old, women and men, poor and low skilled workers, indigenous peoples, ethnic minorities and local communities to participate fully at all levels from production to retail. It should also respect cultural values and be tolerant to religious diversity and lifestyle choices and ethics.

8.3: The Good Governance and Accountability Principle in VCD

VCD should provide a framework to structure markets and production in consultation with all stakeholders and ensure constant monitoring and evaluation for sustainable progress in environmental, social and economic dimensions. It should also promote *common but differentiated responsibilities among stakeholders*

8.4: The Resilience Principle.

A successful value chain should contribute to economic, social and environmental resilience, this includes:-

- Support of the development of social and environmental protection systems, and preparedness against and adaptation for climate change including climate related extreme events and disasters
- Creation of a universal social protection floor of vulnerable groups
- Promotion of variety of VC models relevant to different cultural, social and environmental contexts
- Consideration of indigenous local knowledge and promotion of the sharing of diverse knowledge systems in the VC transactions
- Building on local skills and capacities and developing these further to improve the VC
- Supporting sustainable, diverse economies and local livelihoods and,
- promoting systems approaches, recognising the interdependence and integrated nature of these systems, underpinned by environment, culture and economic values

8.5: The Efficiency and Sufficiency Principle in VCD

A fair and inclusive Value Chain delivers sustainable consumption and production

- It seeks to ensure prices reflect true costs incorporating social and environmental externalities
- It implements the polluter pays principle
- It supports life-cycle management, and strives for zero emission, zero waste, resource efficiency and optimal water use
- It prioritises renewable energy and renewable resources
- It seeks absolute decoupling of production and consumption from negative social and environmental impact
- It delivers sustainable lifestyles supporting a major cultural transformation
- It promotes social, economic and environmental innovation
- It gives fair rights to access intellectual property within a global legal framework

8.6: Recommended Mitigation Measures

Mitigation measures vary from one value chain to the other and from one region to the other because they are influenced by environmental factors, community organization, and infrastructure and market forces. In order to mitigate against negative environmental factors, ASDSP needs to focus on;

- Understanding of local value chains and environmental constraints in Value Chain development and sustainability and devise mitigation measures specific to the value chain
- Available natural resources and management issues that impact and are impacted by VC so that the mitigation measures can be responsive
- Assessment of VC impacts on health, biodiversity and natural resources and hence appropriate remedies
- Life cycle of VC assessment to eliminate waste, emissions and inefficiency. The purpose is to Increase socio-economic benefits and reduce environmental risks,

  Hence:
  - ✓ the need to enhance terms of stakeholder participation
  - ✓ For upgrading particularly for 'upstream' chain actors - since they are clossr to production

8.7: The Need for Subsequent EIA for projects

ASDSP has established a formal environmental and social screening and assessment process, the Natural Resources Management Officer in each of the 47 counties will perform the screening function and identify projects that will require additional environmental assessment under Schedule II of EMCA. ASDSP will establish project management framework with established procedures, elaborated in the Project Implementation Manual, for environmental and social screening and assessment of project activities that may present potential adverse impacts. This SEA has also recommended a screening programme which may be adopted. Projects that may require an EIA, after going through the screening process provided include:-

- Large-scale construction projects e.g. abattoirs, godowns, manufacturing plants;
- Large-scale Irrigation projects;

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TECHNICAL APPENDICES

Stakeholders in workshop forums contributions around the counties developed the entries shown below

Table 19: Legal, Regulatory Framework applicable to VCD

• Cereal • Pulses (green grams)	• EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KEBS • KEPHIS	• AGRICULTURE ACT	• Vision 2030 • Agriculture Act	• Agriculture Act • Public Health Act • KEBS	• Public Health Act • Weights & measures • County Government	• Public Health Act • Consumer protection Act • KEBS
• Rice	• EMCA 1999 • Water Act 2002 • Agriculture Act • Physical planning Act • Quality Control Act	• EMCA 1999 • Water Act 2002 • Agriculture Act	EMCA 1999 Local Govt. Act Industrial Act Public Health Act Occupation Health and Safety	Transport Act	Local Govt. Act	Quality Control Act
• Dairy	• Animal disease Act • Drug and poison Act • KeBS Act	• Animal disease Act • Drug and poison Act • Cattle cleansing Act (Control of Parasites)	• Animal disease Act • Public health Act • Lisencing Act • KeBS Act • EMCA	• Traffic rules • Public health • EMCA	• Trade Act • Licensing Act • KeBS Act	• KeBS Act • Public health
• Beef • Chevon • Mutton	Land use policy Agriculture Act EMCA Drug and poison Act Public Health Act Water Act	Land use policy Agriculture Act EMCA Drug and poison Act Public Health Act Water Act	Agriculture Act EMCA Drug and poison Act Public Health Act Water Act Food, drug and chemical substance Act	Health and safety Act Food, drug and chemical substance Act	Public Health Act	Drug and poison Act Public Health Act Food, drug and chemical substance Act
• Fish (marine, lakes, water bodies)	• Vision 2030 • KebS • Fisheries Act • Occupational health and safety Act	• Vision 2030 • Agriculture Act Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Public Health Act • EMCA 1999 • KeBS Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• KeBS • Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	Public Health Acts Local authority Act KeBS	• Consumer protection Act • Public health Act • KeBS
• Fish • (ponds)	• Vision 2030 • Registered land Act • KebS • Fisheries Act • Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Vision 2030 • Registered land Act • Agriculture Act Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Public Health Act • EMCA 1999 • KeBS Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Plant protection Act cap 324 • KeBS • Occupational health and safety Act Food, drugs and chemical substances Act cap 254	Public Health Acts Local authority Act KeBS	• Consumer protection Act • Public health Act • KeBS
• Poultry	• Veterinary services Act • EMCA • Poultry development bill 2012	• Land use policy • Poultry development bill 2012	• EMCA • Food Processing Standardization • Animal welfare Act.	• Food and Drugs Act • Vet animal movement permit • Traffic Offences Act • Livestock marketing Act	• Food and Drugs Act • County Govt business Permit • Trade License	• Public health Act • Poultry development bill 2012
• Vegetables (Kales ...)	• The Constitution of Kenya • Agriculture Act • KEPHIS • KeBS	• Agriculture Act • EMCA 1999 • Registered land Act • Physical planning Act • Pest control Act • Plant protection Act cap 324	• Weights and measures • Public Health Act • EMCA 1999 • OSH Act • KeBS • Energy Act • Water Act	• Weights and Measures • Legal Notice 9 of 2005/2008 • Traffic Act	• Public Health Acts • County Govt By-laws • KeBS	• Consumer protection Act • Public health Act • Weights and measures
• Tubers (Cassava, Sweet Potatoes)	• The Constitution of Kenya • Agriculture Act • KEPHIS	• Agriculture Act • EMCA 1999 • Registered land Act • Physical planning Act	• Weights and measures • Public Health Act • EMCA 1999	• Weights and Measures • Legal Notice 9 of 2005/2008 • Traffic Act	• Public Health Acts • County Govt By-laws • KeBS	• Consumer protection Act • Public health Act • Weights and measures

	• KeBS	• Pest control Act • Plant protection Act cap 324	• OSH Act • KeBS • Energy Act • Water Act			
• Beekeeping	-Enterprise funds policies -Vision 2030	Public health Act Beekeeping policy	Public health Act KEBS	Public health Act	Public health Act	Public health Act KEBS
• Cash Crops (Pyrethrum)	• Vision 2030 • Registered land Act • Agriculture Act • Cooperative Societies Act • SASRA	• Public Health Act • EMCA 1999 • KeBS	• Plant protection Act cap 324 • KeBS	• Public Health Acts • Local authority Act	• kebs	• Consumer protection Act • Public health Act • KeBS
• Cash Crops (Cotton)	• Agriculture Act • Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KEBS	• KARI • Pest Control Licensing Board • KEPHIS • Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KEBS	• Plant protection Act cap 324 • KEBS	• Public Health Acts • Local authority Act • KEBS	• Consumer Protection Act • Public health Act • KEBS

Table 20: Legal, Regulatory Frameworks applicable to VCD and mitigation measures

POLICY INSTITUTIONAL AND LEGISLATION FRAMEWORKS	MITIGATION STRATEGIES	RESPONSIBLE BODIES
• Constitution of Kenya 2010 • EMCA 1999 • EIA & Audit Regulations, 2003 • EMC (Water Quality) Regulations • EMC (Waste Management) Regulations, 2006 • EMC (Noise & Vibrations) Regulations, 2009 • SEA Guidelines, Revised 2011 • EMC (Fossil Fuels) Regulations • Protection of Biodiversity • Plant protection Act (cap 324)	• Adherence to principles of intergenerational equity • Adherence to environmental best practices during commercialization of VC • Protection of species endemic to Kenya	• National Environment Management Authority (NEMA) • County Governments • Contracted EIA & Audit Experts
• Agriculture Act • Veterinary services Act • Animal disease Act • Cattle cleansing Act (Control of Parasites) • Fisheries Act • Plant protection Act (cap 324) • Vet animal movement permit • Livestock marketing Act • Animal welfare Act.	• Adherence to agricultural best practices during commercialization of VC • Compliance to legal and regulatory frameworks in the agriculture sector	• State Department of Agriculture • ASDSP
• Physical planning Act • Registered land Act • Land use policy	• Compliance to legal and regulatory frameworks for infrastructure development	• National Government • County Government
• Public Health Act • Drug and poison Act • Food, drug and chemical substance Act • Consumer protection Act • Poultry development bill 2012	• Compliance to legal and regulatory frameworks in the health sector (predominantly public health)	• State Department of Health • NEMA

POLICY INSTITUTIONAL AND LEGISLATION FRAMEWORKS	MITIGATION STRATEGIES	RESPONSIBLE BODIES
• Occupation Health and Safety Act	• Compliance to legal and regulatory frameworks in the agriculture sector	• State Department of Industrialization • State Department of Health
• Quality Control Act • Food Processing Standardization	• Compliance to legal and regulatory frameworks in the food and beverage sector	• KEBS
• Vision 2030 • Land Use Policies Local authority Act	• Alignment of ASDSP goals with National Policies	• National Government • County Governments
• Trade License	• Compliance to legal and regulatory frameworks for trade laws sector	• State Department for Industrialization
• Traffic Offences Act	• Compliance to all other legal and regulatory frameworks in Kenya	

Table 21: Stakeholders Identified for VCD

PRIORITISED CROPS	INPUT SUPPLIER FINANCE & SUPPORT	PRODUCTION & SUPPORT AGENCIES	PROCESSOR & SUPPORT AGENCIES	DISTRIBUTOR & SUPPORT AGENCIES	RETAILER & SUPPORT AGENCIES	CONSUMER
• Cereals • Pulses (green grams)	• KENYA SEED • SEED COMPANIES • PIONEER • MAE • NCPB • KFA • EQUITY BANK • AFC • ONE ACRE FUND • KARI • KEPHIS • AGROVETS • CABDA • KEBS	• FARMERS • KARI • AGRICULTURAL COLLEGES • PRISONS	• LOCAL POSHO MILLERS • NATIONAL & DISTRICT MILLERS	• NCPB • LOCAL TRADERS	• NCPB • FARMERS • FARMERS GROUPS	• SCHOOLS • HOSPITALS • COLLEGES • HOTELS • HOUSE HOLDS
• Rice	• Rice Growers Multi – purpose Cooperative (MRGM) • NIB/MIAD • G.K Mwea prisons • KARI • Financial Institutions • Pests Chemicals and Poisons Control Board (PCPB) • KeBS	• JICA • MOA • ADS(CCS) • Individual farmer • Desert Locust Control Organisation (DLCO)	All Millers (Private & Cooperatives) NIB MIAD Centre G.K Mwea Prisons	• Transporters • Private traders • NIB • MRGM	• Cereal stockists • Super markets	Consumer
• Dairy	• Livestock dept • Kenya Dairy Board • Banks, • New KCC • Brookside • Doinyo Lessos • Grain Millers • Kenya seed • KARI • Government Programs (ASDSP, SDCP, EAPP) • NGOs (SNV) • UN Agencies (FAO)	• Livestock Dept • Kenya Dairy Board • Banks • Grain Millers • Government Programs (ASDSP, SDCP, EAPP) • NGOs (SNV) • UN Agencies (FAO)	• CBOs • New KCC • Brookside • Doinyo Lessos • Milk cooling plants	• Limited Companies (Buzeki) • New KCC • Brookside • Doinyo Lessos	• Farmers • Traders (Hawkers & Milk bars) • Super markets • Retail shops	• Consumer Protection Organizations • Kebs • Traders (Hawkers & Milk bars) • Super markets • Retail shops • Kenya Dairy Board • Public Health
• Beef • Chevon • Mutton	• ILRI • MOLD • Farmers • Breeders • Feed manufacturers	• CBO, Co-ops, Groups • UAP and heritage insurance	• Vet, NEMA, Public health. KMC	• Transporters	• Butchers • Turneries • Horns and hooves merchants	• Relevant institutions

PRIORITISED CROPS	INPUT SUPPLIER FINANCE & SUPPORT	PRODUCTION & SUPPORT AGENCIES	PROCESSOR & SUPPORT AGENCIES	DISTRIBUTOR & SUPPORT AGENCIES	RETAILER & SUPPORT AGENCIES	CONSUMER
	• AFC/BANKS/MFIs -- • PCPB/ KEPHIS/ KARI/ILRI • Youth/Women/CDF/ Narok County Govt/NGOs eg. World Vision • Kenya Seed Co./Coopers/ Syngenta/ Norbrooks/Agric machineries • Universities: Egerton, Moi, UoN	• Individual and • Groups of pastoralists • MoALF • NRM	• KMC • KEBS • Veterinary services • Butcheries/ abattoirs • Public Health and sanitation • NEMA • -Water Act	• KLMC • Local livestock traders	• KMC • Butcheries • Supermarkets	- Households - Institutions - Hotels • International markets • Researchers
• Fish (marine, lakes, water bodies)	• Boat constructors, fishing gear suppliers, ice production (from Malindi & Mombasa), Equity bank, KCB, First community bank, DTB, AFC, Cooperative bank, Saccos	• Fisher folk.	• Fisher folk, traders, hotels, fish mongers, fillet processors (processed in Malindi & Mombasa)	• Transporting companies, traders, transporters	• Hotels, fish mongers, individuals traders • fish shops	• Hotels, • household, • schools, • hospitals, • export markets
• Fish (ponds)	• Ministry of Fisheries	• Fish farmers • Dept. of Fisheries	Fisher folk, traders, hotels, fish mongers, fillet processors	• Transporting companies, traders, transporters	• Hotels, fish mongers, individuals traders fish shops	• Hotels, • household, • schools, • hospitals, export markets
• Poultry	• Vision 2030 • EMCA 1999 • Veterinary Act • KeBS	• Vision 2030 • EMCA 1999 • Veterinary Act • SACCO Societies Regulatory Authority(SASRA)	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS • Animal Welfare Act	• -Animal Welfare Act	• Public Health Acts • County Government • Animal Welfare Act	• Consumer protection Act • Public health Act • KeBS
• Vegetables (Kales ...)	• Local farmers • Seed companies	• Seed companies • Farmers • NGOs	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KEPHIS	• KEPHIS • COFAK	• Public Health regulatory framework • Consumer Org	• Schools • Hotels • Kiosks • Households
• Tubers (Cassava, Sweet Potatoes)	• HCDA • KEPHIS • AFC • Faulu Kenya • Equity Bank • KCB, KWFT • MoALF	• CBOs • Self-help groups • Individual farmers	• Proposed processing unit (Crisps Starches etc)	• Marketing cooperative • Individual transporters	• Market stalls	• Community • Schools • hotels
• Beekeeping	• MOLD • NDMA • KVDA • Banks	• Individuals • CBOs/Groups	• CABESI • KVDA • Pokot Bee Products Co. • Kitalakapel SHG • Kodich SHG	• CABESI • KVDA • Pokot Bee Products Co. • Kitalakapel SHG • Kodich SHG • Transporters	• CABESI • Pokot Bee Products Co. • Kitalakapel SHG • Kodich SHG • Supermarkets	• Individuals • Hotels
• Cash Crops (Pyrethrum)	• Pyrethrum board • Farmer groups • NEMA • universities • KARI • KEPHIS	• Farmer groups • CBOs • MOA/agric sector • Pyrethrum board • cooperatives	• Pyrethrum boar • Farmer groups • manufacturers	• Pyrethrum boar • Farmer groups	• stalls • Supermarkets • hypermarkets	• Community
• Cash Crops (Cotton)	• Cotton Development Authority(CODA) • Cotton Rehabilitation and Management (CRÈME)-NGO • Ministry of Agriculture • Ministry of industrialization • County Government	• Ministry of Agriculture • NEMA • County Government	• CREME(NGO) Ministry of Agriculture • Ministry of industrialization • NEMA • County Government	• CODA • Ministry of Agriculture • Ministry of industrialization • County Government	• County Government	• County Government

Table 22: Prioritised Crop / Animal Categories

	Name of stakeholder category	Focus crop/product
1.	Cereal	Maize, Rice, Gadam Sorghum
2.	Dairy	Cow Milk and Camel Milk
3.	Beef	Cattle, Shoats (Chevon, Mutton), Camel
4.	Fish	Fish
5.	Poultry	Indigenous Poultry, Broilers
6.	Fruits	Mangoes And Bananas, passion fruit
7.	Vegetables	Kales, Local Vegetables, Tomatoes, Chillis
8.	Tubers	Cassava, Irish potatoes
9.	Pulses	Green Grams
10.	Beekeeping	Bees
11.	Others	Cotton, Pyrethrum

Table 23: Summary of Key Environmental and Socio-economic Aspects Identified in VCD

BIOLOGICAL	PHYSICAL	HYDROLOGICAL	PEDOLOGICAL	SOCIO-ECONOMIC
• Habitat loss • Deforestation • Loss of biodiversity • Species invasion • Nutrient circulation – micro-organisms	• Pollution • Energy • **Climate Change** • Land use change	• Catchment degradation • Over abstraction of water resources • Pollution of aquifers (sea, lakes, rivers and ground water)	• Salinization • Leaching • Soil erosion • Compaction • Pollution	• Livelihoods changes • Social institutions • Employment • Income change • Cultural impacts • Social amenities • Gender equity • Health factors • Food security • Education • Shelter

Appendix 2: Results from stakeholder engagement workshops in 47 Counties

ISIOLO FORUM

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Camel Milk	Agro-vets, Gok Vet clinics , CBOs & NGOs Banks,	Camel herders, CBOs, Vet & livestock Ext. workers	Direct market	Individual suppliers To various market outlets within town and outsid	Individual sellers at market milk yards/groups	Local residents, exports outside the county ie NRB, Farm africa Nanyuki, institutions
Stakeholders	Camel herders, camel traders, groups, Gok MALD, Banks, Agrovets	Camel herders, camel traders, groups, Gok MALD, Banks, Agrovets	Direct Market	Camel herders, Groups, Middle groups, Hotels.	Mamas, middle men, hotels,kiosks, milk yards	Local residents, hotels, exports outside the county - NRB
Legal Regulatory Frameworks	DVS Act, County By laws, public health Act.	Public Health Act. DVS Act	None	DVS Act, Public Health Act, Traffic Act.	Dvs Act, County by laws, Public Health Act.	Consumer Act, KBS
Direct Impacts	Increased sales Agrovet Products, sale of Expired drugs,	Improved quality of milk, Increased volume of milk production. Improved nutrition in the county	None	High turnover-More profits, high income to transporters	Increased milk production for retailers,	Nutrition status improved, high availability of milk, low prices
Indirect Impacts	Creation of employment,	Employment.	None	More market outlets created. Creation of employment by the transporter.	Employment creation.	Low prices.
Cumulative Impacts	Employment	Improved Nutrition	None	Improved roads Income generation, Employment creation	Income generation improved lively hoods	Better nutrition, less diseases, active population
Climate Change	Environmental pollution due to chemicals, green house gases	Green houses gases from camel dung	None	Emission from transporters.	Soil erosion on beaten paths.	Improved climate.

GARISSA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1.Hassan 2. David .K. Mwanzia	ASDSP-Garissa Kenya Forest Service-Garissa

RECOMMENDATIONS

Tomatoes to be grown under irrigation, plants to be put up for value addition. i.e tomato paste, Sauce and paste for domestic use and export.

Camel milk to be packed for long life and distribution to super markets and export outside the Country

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
TOMATO	Agrovet, CBOs & NGOs bank	Farmers & Groups, Agric. Ext. Officers (all done through irrigated agriculture)	Direct Market	Individual Farmer, Groups, Hotels	Individual Farmer, Tomato vendors,	Local residents, export markets
Stakeholders	Farmers, Agrovets, MALD Ext. staff , CBOs & NGOs, Banks	Farmers, Agrovets, MALD Ext. staff, Banks, CBOs & NGOs	Direct Market	Vendors, Farmers, Middle men, transporters	Vendors, Farmers, Hoteliers	Hotels, local residents, Export outside the county
Legal Regulatory Frameworks	Agric. Act County By laws, public health Act.	Public Health Act. DVS Act	None	Agri. Act, Public Health Act, Traffic Act.	Agric.Act, County by laws, Public Health Act.	Consumer Act, KBS
Direct Impacts	Increased sales , Agrovet Products, sale of Expired/fertilers drugs,	Improved quality of tomatoes, Increased volume of Tomatoes production. Improved nutrition in the county	None	High turnover-More profits, high income to transporters	Increased tomatoes production for retailers,	Nutrition status improved, high availability of tomatoes, low prices
Indirect Impacts		Employment.	None	More market outlets created. Creation of employment by the transporter.	Employment creation.	Low prices.
Cumulative Impacts	Employment	Improved Nutrition	None	Improved roads Income generation, Employment creation	Income generation improved lively hoods	Better nutrition, less diseases, active population
Climate Change	Environmental pollution due to chemicals, green house gases	Green houses gases from camel dung	None	Emission from transporters.	Soil erosion on beaten paths.	Improved climate.

RECOMMENDATIONS

ISIOLO COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION	
Bonface Manyara	ASDSP	
Steve Machan	ASDSP	
Antonela Dokhe	NEMA	
Abdi Ibrahim	ISIOLO DISABLED ORGANIZATION	
Jackson Muturo	NEMA	

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
BEEF	-AGRO-VETS -PASTRALISTS -BANKS	-LIVESTOCK FARMERS -RANCHERS	ISIOLO ARBATOUR (has capacity 1,000 cattle per day) & OTHER SLAUGHTER HOUSES	KLMC	BUTCHERIES	HOTELS SCHOOLS & INSTITUTIONS H/Hs
Stakeholders	-FARMERS -LIVESTOCK MARKETING ASSOCIATIONS -MICRO-FINANCE -PASTRALISTS	-VETS-for livestock inspection -MOALF PERSONNEL -NEMA	-NEMA -PUBLIC HEALTH -MEAT INSPECTORS	-TRANSPORTERS -LOADERS -MERCHANTS	-BUTCHERIES -KLMC -SUPERMARKETS	IMPORTERS HOTELS SCHOOLS HHS INSTITUTIONS
Legal Regulatory Frameworks	-EMCA 99 -P-H. ACT -LOCAL G. ACT -LAND ACT -WATER ACT	-AGRIC ACT -LAND USE POLICIES -D@PACT -KEPHIS	-PUBLIC HEALTH ACT -EMCA 99 -NEMA regulations	-Health and safety Act -PUBLIC HEALTH ACT -FOOD, DRUG AND CHEMICAL SUBSTANCES ACT	-HEALTH -trade license	Health and safety Act
Direct Impacts	-WASTE WATER -SLUDGE -AIR POLLUTION -income generation	-ENVIRONMENTAL DEGRADATION	-solid & liquid wastes -POLLUTION -SLUDGE -income generation	-Traffic congestion -pollution -job creation	Income generation	Improved nutrition
Indirect Impacts	-CATTLE RUSTLING -INSECURITY -CHEMICAL POLLUTION(ARCARICIDES)	-improved livelihood -	-job creation	-diseases (aids)	Income	Income loss
Cumulative Impacts	-soil degradation -overgrazing -conflicts over resources	Improved livelihoods	Environmental degradation (wastes emanating from processing plant)	pollution	Environmental pollution	Improved health
Climate Change	-Pollution -deforestation	-pollution -deforestation -desertification	-pollution (due to waste from the plants)	Pollution	Pollution deforestation	Pollution Deforestation

RECOMMENDATIONS

- Sensitization of farmers on chemical handling
- Proper disposal of wastes
- Workers should be given protective gears
- Distributing vans should be serviced properly.
- Farmers should get access to recommended inputs and protected from frand.
- Road infrastructure should be improved for market access
- Sensitization of farmers, pastoralist or community involve on climate change mitigation measures and adoption mechanism
- Soil and water conservation measures observed

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
TOMATOES	AGRO-VETS Land Water labour	Farmers VC Groups	Processing plant Cottage industries	Transporters Loaders Individual farmers Boda boda Donkey carts	Fresh markets Supermarkets	Hotels Institutions Households
Stakeholders	Individual farmers Farmers groups MOALF Agrodealers Stockists Bank and Microfinance institutions WARMA NEMA	MOALF Individual farmers Farmers groups	Industries Labourers Bank and Microfinance institutions	Vehicle owners Individual farmers Loaders	Groceries Fresh markets Supermarket	Hotels Institutions Households
Legal Regulatory Frameworks	Land use policy Agriculture Act EMCA Drug and poison Act Public Health Act Water Act	Land use policy Agriculture Act EMCA Drug and poison Act Public Health Act Water Act	Agriculture Act EMCA Drug and poison Act Public Health Act Water Act Food, drug and chemical substance Act	Health and safety Act Food, drug and chemical substance Act	Public Health Act	Drug and poison Act Public Health Act Food, drug and chemical substance Act
Direct Impacts	Chemical misuse	Health hazards	Pollution	Income	income	Improved nutrition
Indirect Impacts	Health problems	Health complication	Waste menace	Health problems	Health problem	Bad health, diseases
Cumulative Impacts	Disorders Water pollution Soil pollution	Death	Environmental pollution	Environmental pollution	environmental degradation	Good health
Climate Change	Desertification	Desertification	Environmental degradation	Greenhouses gases	Green house gases	Deforestation

RECOMMENDATIONS

- Sensitization of farmers on chemical handling
- Proper disposal of wastes
- Workers should be given protective gears
- Distributing vans should be serviced properly.

- Farmers should get access to recommended inputs and protected from frand.
- Road infrastructure should be improved for market access
- Sensitization of farmers, pastoralist or community involve on climate change mitigation measures and adoption mechanism
- Soil and water conservation measures observed

MANDERA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION	
BENARD O OGUTU MOHAMED N ADHAN MOHAMED A MOHAMED	MAOLD&F /CDA ASDSP COORDINATOR ECOSYSTEM CONSERVATOR KFS	

CAMEL MILK: VALUE CHAIN MATRIX

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
CAMEL MILK VC	-Agro vets - Financial institutions -GoK -County Livestock Marketing Council (CLMC) -Kenya Camel Association -NGOs- Practical Action -Women 'chamas"	-Pastoralists -CIGs, -Farmer Groups -Extension services	-Women groups -Youth groups	-Milk traders -Transporters	- Mini-markets -Hotels -Roadside market	- Households -Institutions./schools - Hotels -Travellers
Stakeholders	-Banks -MFIs -Youth -Women -CDF -County Govt -NGOs -Pastoralists -Agrovets - County Livestock marketing Council (CLMC) -Kenya Camel Association	-Pastoralists -MoALF -NGOs -Agrovets	-KEBS - Veterinary services - Public Health and sanitation -Milk traders	- Milk traders -Transporters -CLMC	-Milk traders - Women groups -Minimarkets	- Households - Institutions - Hotels -Travellers
Legal Regulatory Frameworks	-Veterinary services Act -EMCA -PCPB Act -Kenya Dairy Board Act -Food safety Act	-ALFA -Land use policy	-EMCA -Food Processing Standardization Public Health Act. -Animal welfare Act.	-Food and Drugs Act -Livestock marketing Act	-Food and Drugs Act -County Govt business Permit - Trade License	-Public health Act

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Direct Impacts	-Increased business to input suppliers and financiers. -Employment opportunities to input suppliers. -Higher input demand	-Improved on-farm employment and income -improved livelihood -Increased business for the youth and women involved in the milk trade	-Job creation	-Employment -Income generation	-Employment -Revenue Income generation	-Food security -Improved nutrition and health
Indirect Impacts	-Bad loans/ non-performing	-Resource use conflict -Overutilization of the resources -Zoonotic diseases eg Brucellosis - Livestock death due to diseases/ drought/floods -Pastoralist/Farmer conflict	- Inadequate processing capacity -Improved living stds.	Improved standards of living -Job creation	–Zoonotic diseases eg Brucellosis -Milk deterioration -Containers (polythene and tins) -Improved living standards.	- Zoonotic diseases eg Brucellosis -Inproved nutrition and health
Cumulative Impacts	- Abuse of vet drugs -Increased business	-Resource use conflict - Land degradation -Better livelihoods	-Waste accumulation	- Environmental pollution (air, soil and water)	- Deterioration of milk quality. -Poor hygiene standards of handling	-Improved nutrition and health
Climate Change	-Greenhouse gases	-Drought from depletion of vegetative cover due to overgrazing. -Reduction in water availability	-Air pollution	-Carbon emission from transportation vehicles	- Use of poly-carbons	- Use of poly-carbons

RECOMMENDATIONS

1. Improved grazing management systems(Dry and wet season grazing patterns)
2. Infrastructure improvement (water sources , processing, milk cooling system)
3. Research on better breeds with provision of timely extension/veterinary services
4. Improvement of rural access roads for
5. Capacity building in terms of training for production and management of camels
6. Advocacy on land tenure and land use policy to reduce unplanned settlements.
7. Research on improved breeds and pasture varieties.
8. Reclamation of degraded lands in pastoral areas to increase available land.
9. Use of more hygienic metallic containers for transporting milk.
10. Sharia compliant financial institutions to be upscaled

SAMBURU COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1. DAVID LESOWOPIR	DESERT EDGE
2. SAMUEL KIRUI	MOALF
3. JOEL ROP	NEMA
4. CHARLES NDIRITU	ASDSP

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
HONEY V C	KVDA , Hope for Samburu,NDMA,Desert edge, Tuum PCEA church- Honey producers,Local Artisans,	Individual farmers CIGs,	Desert Edge Tuum PCEA Hope for Samburu Individuals	Desert Edge Tuum PCEA Hope for Samburu Individuals	Supermarkets, retail shops	Individuals Lodges Hotels
Stakeholders	KVDA , Hope for Samburu,NDMA,Desert edge, Tuum PCEA church- Honey Producers,KFS, AWF,P.G.D.P	Individual farmers CIGs,	Desert Edge Tuum PCEA Hope for Samburu Individuals	KVDA , Hope for Samburu, Desert edge, Tuum PCEA church- Honey Producers	- Individual farmers Supermarkets, retail shops	Individuals
Legal Regulatory Frameworks	Kenya bureau of standards,	ALFA	Public health Act,	Local government Act	Public health Act,	Public health Act, Consumer protection Act
Direct Impacts	Increased demand for inputs Increased income Employment creation	Increased income Improve nutrition Employment creation	Increased profit margins Creation of employment	Increased income Improve nutrition Employment creation	Increased profit margins Creation of employment	Improve nutrition
Indirect Impacts	Business diversification	Improved health Increased productivity				Improved health
Cumulative Impacts	Improved livelihoods	Enhanced environmental conservation Improved livelihoods				Improved lifestyles
Climate Change	loss of tree covers,	Promotes crop and tree pollination	Waste generation (packaging materials) Generation of Gaseous emissions(from candles)	- Gaseous emissions(from distribution vehicles	Waste generation (packaging materials)	Waste generation (packaging materials)

RECOMMENDATIONS

- Honey VC should be encouraged due to many positive impacts to the environment, social and economic well being of the society.
- Proper waste management structures to be put in place to mitigate the few negative impact (reduce recycle and reuse)
- Use environmental friendly inputs

THARAKA- NITHI COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
FRASHIAH W. MWEBIA	ASDSP – NRM/SI
JOHN G. KAMAU	MOEW&NR/ UTaNRMP – CPC
JAFFARI J. GITONGA	MOAL&F - SCAE

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Banana	Agro-input suppliers JKUAT Banks SACCO Group nurseries KARI	Producer groups Individual farmers CBOs Banks SACCO	Establishing Of Processing Plant Farmers/ farmer groups Traders	Processing plants Traders Transporter	Traders	Local consumers External consumers
Stakeholders	Farmer/ farmer groups HCDA SNV Exporters – Meru Greens Banks SACCO MOAL&F Insurers Transporters Agro-input dealers JKUAT KARI KEPHIS	Producer groups Individual farmers CBOs Banks SACCO MOAL&F HCDA KARI Transporters Agro-input dealers SNV Exporters – Meru Greens	Farmers/ farmer groups Traders Banks SACCO MOAL&F Cooperatives KeBS Transporters Packaging material suppliers	Farmer/ farmer groups Traders County governments- tax Transporter	Traders Super markets Stalls County governments- tax KeBS	Consumers
Legal Regulatory Frameworks	Vision 2030 EMCA 1999 Registered land Act KeBS Financial acts Cooperative acts Agriculture Act Physical planning Act	Vision 2030 EMCA 1999 Registered land Act KeBS Financial acts Cooperative acts Agriculture Act EUREP GAP Kenya GAP AAK – safe and effective use of agro-inputs	Vision 2030 EMCA 1999 KeBS Public health Act Financial acts Cooperative acts Kenya GAP EUREP GAP AAK – safe and effective use of agro-inputs	Vision 2030 EMCA 1999 Public health Act Financial acts Cooperative acts County governments-bylaws	Vision 2030 EMCA 1999 Public health Act Financial acts Cooperative acts County governments-bylaws	Consumer protection Act Public health Act KeBS County Govt Act.
Direct Impacts	Income generation Employment creation Increased use of manures and fertilizer Environmental pollution Soil degradation Air pollution	Income generation Employment creation Increased use of manures and fertilizer Environmental pollution Soil degradation Air pollution Increased Food security	Income generation Employment creation Environmental pollution Air pollution Increased Food security Prolonged self life Increased road damages	Income generation Employment creation Environmental pollution Air pollution Increased Food security Increased road damages	Income generation Employment creation Environmental pollution Air pollution Increased Food security	Improved health Impaired health

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
		Increased road damages				
Indirect Impacts	Increased fertilizer demands Increased returns from borrowing Increased awareness and demand for agri-insurance policies Increased Tax collection	Increased fertilizer demands Increased returns from borrowing Increased awareness and demand for agri-insurance policies Increased Tax collection Increased road infrastructure cost	Increased returns from borrowing Increased awareness and demand for agri-insurance policies Increased Tax collection Increased road infrastructure cost	Increased returns from borrowing Increased awareness and demand for agri-insurance policies Increased Tax collection Increased road infrastructure cost	Increased returns from borrowing Increased Tax collection	Improved work force
Cumulative Impacts	Improved living standards GHGs scaled up	Encroachment forested and riparian areas Deforestation-propping Land degradation Increased road accidents Improved living standards GHGs scaled up	Improved living standards GHGs scaled up Environmental degradation	Improved living standards GHGs scaled up Environmental degradation	Improved living standards	Environmental degradation
Climate Change	Green House Gases air pollution- Increased negative effects of on climate change	Green House Gases air pollution- Increased negative effects of on climate change	Green House Gases air pollution- Increased negative effects of on climate change	Green House Gases air pollution- Increased negative effects of on climate change		Green House Gases air pollution- Increased negative effects of on climate change

RECOMMENDATIONS

- Improved infrastructural network to include railways
- Improved use of Climate information to improved production
- Conservation of Soil and environmental systems, proper waste management and catchment reclamation
- Implementation environmental management plan in EIA reports
- Bring in more stake holders to strengthen the value chain sustainability and create window for feedback mechanisms from implementation and consumer level
- Self-Regulatory and legal framework for horticultural crops to strengthen marketing and provide gateway for insurance services provision
- Explore Technological advances in agriculture to ensure climate friendly methods of Agri-production

WAJIR COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
ABDIRAHMAN GAFOW ABDULLAHI LEKARTIWA SIMON ADHOLA, PAUL WANDERE	COUNTY COORDINATOR, ASDSP WAJIR MoAL&F-WAJIR ERSIO, ASDSP WAJIR

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
CAMEL MEAT VC	-Breeders (KARI). -Wajir Vet Clinic - Financial institutions; KCB, Equity, First Community -GoK (Livestock Production & Veterinary Depts.) -NGOs; VSF, SCUK, WASDA, Mercy Corps, DPA,	-Pastoralists -CIGs, -Farmer Groups -Extension services	-KMC -Community abattoirs/ slaughter slabs. - Wajir Export Slaughter house (in progress) -Buna Rural tannery -Community hides and skins processors	-Local livestock traders -Wajir Livestock Marketing Associations/ Councils (DLMC) -individual traders -Wajir international airport.	- Butcheries -Retail shops (Nyir nyir sellers)	- Households -Institutions./schools - Hotels -International markets (nyir nyir- quantity unaccounted for)
Stakeholders	-GOK (MoAL&F& Governor) -NGOs (SCUK, WASDA, DLMC, DPA, Mercy Corps, Oxfam GB, VSF), Banks	-Individual farmers, - pastoralists groups -MoAL&F, NDMA -NEMA - ASDSP -County Government -Kenya Wildlife Service	- Veterinary services -Butcheries/ abattoirs - Public Health and sanitation -NEMA -KEBS,	- Local livestock traders -DLMC -Wajir airport	- Butcheries -Basabra Supermarket -Retail shops	- Households - Institutions - Hotels -International markets -Researchers
Legal Regulatory Frameworks	-Veterinary services Act -EMCA 1999 -Meat Act -Poisons Board Act	-Land use policy -The draft wild life conservation and management policy and bill	-EMCA -Food Processing Standardization -Animal welfare Act. -ALFA Act	-Food and Drugs Act -Vet animal movement permit -Traffic Offences Act -Livestock marketing Act	-Food and Drugs Act -County Govt business Permit - Trade License	-Public health Act -Meat Act. -Consumer protection Act
Direct Impacts	-More business base (Higher input demand) -Employment creation -Invasion by unscrupulous dealers	- increased input accessibility -Improved on-farm employment and income -improved food security	-Job creation -Foreign Exchange -Waste disposal -water pollution -Water shortages due to increased usage -Lesser costs incurred on transport unlike taking live animals to KMC	-Employment -Income generation -Livelihood diversification once income improve -Market penetration	-Employment -improved Income -increased customer/ clientele base	-Food security -Improved nutrition and health -Improved Market demand (accessibility)
Indirect Impacts	-Soil and water pollution (expired supplies) -economic loss due to obsolete products -Legislative/ Policy / standardization/ taxation constraints	-Resource use conflict -Overutilization of the resources - Livestock death due to diseases/ drought/floods -cattle rustling -human- wildlife conflicts	- Inadequate processing capacity(death losses) -Occupational Health Hazards. -Work place safety hazards (damages/ injury compensations).	-Traffic congestion -Taxation/ Levies -Losses due to poor transport and telecommunication networks. -Corruption	-Storage/ preservation costs -Unhygienic handling by butchers.	- Livestock diseases e.g.RVF

				- Storage/ preservation costs		
Cumulative Impacts	-wider business base -Increased income -Better customer clientele -Emergence of counterfeits. - Environmental pollution	-improved living standards -Resource use conflict - Land degradation -Employment creation	-increasedutilization of water resources -Waste disposal	- Environmental pollution. -More income -More business opportunities	- improved income -losses due to spoilages/ expired stores	-Improved nutritional status -Improved living standards -Lifestyle diseases like gout, obesity, cancer
Climate Change	-Greenhouse gases (more CFCs emitted when plastic containers burnt)	-Methane from livestock -Drought from depletion of vegetative cover	-Water pollution from industrial wastes	-Carbon emission from transportation vehicles	- Environmental pollution.(polythene bags used)	- Environmental pollution from polythene bags used

RECOMMENDATIONS

- Upscale camel meat value addition in the county
- Pasture improvement be done through irrigation since rainfall is unreliable.
- Infrastructure improvement (access roads, water sources, slaughter houses/ slabs, meat coolers)
- Enhance sanitary and phyto-sanitary camel meat standards to meet international trade requirements.
- Capacity building in terms of training on sound and environmentally resilient camel husbandry practices.
- Advocacy on land tenure and land use policy.
- Research on improved camel breeds.
- Recycling of by-products for Generation of Biogas and dung manure (organic farming).
- Better human/ solid waste disposal to reduce ground water pollution
- Reclamation of denuded rangelands through reseeding, afforestation.
- Research on the nutritional content/ utilization of the invasiveplant species e.g. *Prosopis juliflora*by camels

LOCAL POULTRYVALUE CHAIN MATRIX

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Local Poultry VC	-Breeders (Kenchic, Muguku). -Wajir Vet Clinic - Financial institutions; KCB, Equity, First Community -GoK (Livestock Production & Veterinary Depts.) -NGOs; VSF, SCUK, WASDA, Mercy Corps, DPA, Care Kenya, ALDEF	-Poultry Keepers -CIGs, -Farmer Groups	-Hotels	-individual traders - Basabra supermarket	-Retail shops -Basabra supermarket	- Households -Institutions./schools - Hotels
	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER

Stakeholders	-GOK (MoAL&F & Governor) -NGOs (SCUK, WASDA, DLMC, DPA, Mercy Corps, Oxfam GB, VSF, Care Kenya, ALDEF)	-Individual farmers, -MoAL&F - ASDSP -County Government -KAPAP	- Veterinary services - Public Health and sanitation -NEMA	- Local Poultry traders - Basabra Supermarket	-Basabra Supermarket -Retail shops	- Households - Hotels
Legal Regulatory Frameworks	-Veterinary services Act -EMCA -Poultry development bill 2012	-Land use policy -Poultry development bill 2012	-EMCA -Food Processing Standardization -Animal welfare Act.	-Food and Drugs Act -Vet animal movement permit -Traffic Offences Act -Livestock marketing Act	-Food and Drugs Act -County Govt business Permit - Trade License	-Public health Act -Poultry development bill 2012
	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Direct Impacts	-More business base (Higher input demand) -Employment creation -Invasion by unscrupulous dealers	- increased input accessibility -Improved on-farm employment and income -improved food security -enhanced alternative livelihood diversification	-Job creation -Waste disposal -water pollution	-Employment -Income generation -Livelihood diversification once income improve -Market penetration	-Employment -improved Income -increased customer/ clientele base	-Food security -Improved nutrition and health -enhanced dietary choices and preferences -Improved Market demand (accessibility)
Indirect Impacts	-Soil and water pollution (expired supplies) -economic loss due to obsolete products -Legislative/ Policy / standardization/ taxation constraints	-Overutilization of the resources - Poultry deaths due to diseases/ drought/floods - Wildlife predation	- Inadequate processing capacity(death losses) -Occupational Health Hazards.	-Traffic congestion -Taxation/ Levies -Losses due to poor transport and telecommunication networks. -Corruption - Storage/ preservation costs	-Storage/ preservation costs	- Poultry diseases e.g.Coccidiosis
	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Cumulative Impacts	-wider business base -Increased income -Better customer clientele -Emergence of counterfeits. -Environmental pollution	-improved living standards -Employment creation	-Over extraction of water resources -Waste disposal	- Environmental pollution. -More income -More business opportunities	- improved income -losses due to spoilages/ expired stores	-Improved nutritional status -Improved living standards -Lifestyle diseases like gout, obesity, cancer
Climate Change	-Greenhouse gases (more CFCs emitted when plastic containers burnt)		-Water pollution from industrial wastes	-Carbon emission from transportation vehicles	- Environmental pollution from polythene bags used	- Environmental pollution from polythene bags used

RECOMMENDATIONS

1. Infrastructure improvement (access roads, water sources, slaughter houses/ slabs, meat coolers)
2. Promote development of local input stockist
3. Promote on-farm feed formulation
4. Capacity building in terms of training for production and management

5. Research on improved ASAL poultrybreeds.
6. Recycling of by-products for Generation of Biogas and dung manure (organic farming).
7. Better human/ solid waste disposal to reduce ground water pollution
8. Research on the nutritional content/ utilization of the invasiveplant species e.g. *Prosopis juliflora*

KAKAMEGA FORUM

BUNGOMA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION	
JACOB ASEMBO	NEMA	
EMMANUEL MASAKE	KAREU-MPYA	
EDWARD MASINDE	VI-AGROFORESTRY	

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
TOMATO	Kenya seed Simlow East African co. Mea ltd. Syngenta Farmchem Bayer Money maker Banks MFIs VSLAs Amiran	Individual farmers Common interest groups		Farmers Middlemen Supermarkets Horticulture markets Municipal markets	Farmer Vendors Greengrocers Hotels	Public
Stakeholders	Kenya seed Simlow East African co. Mea ltd. Syngenta Farmchem Bayer Money maker Banks MFIs VSLAs Amiran KARI	Farmer CIGs CBO s MoA,L & Fisheries NGOs vi-agro,WRCCS Syngenta		County government Public health KEBs CBOs Supermarkets	County government. Vendors Greengrocers Hotels	Public

Legal Regulatory Frameworks	Agriculture Act Pests control Act Water Act 2002 Land Act	Agriculture Act Pests control Act Water Act 2002	KEBs Kephis	Public health Act CAP 242 KEBs	Public health Act CAP 242 KEBs	Public health Act CAP 242 KEBs
Direct Impacts	Employment Pollution Soil degradation	Food and nutritional security Employment Pollution Soil degradation	Pollution Waste Employment Tax	Employment Wastes Pollution Tax	Employment Tax Wastes	Food and nutritional security
Indirect Impacts	Diseases Improved livelihood Food insecurity	Diseases Improved livelihood Food security Population growth	Diseases Growth of GDP	Diseases Growth of GDP	Improved livelihood	Improved livelihood Population growth
Cumulative Impacts	Poverty	Economic empowerment		Improved livelihood	Improved livelihood	Improved health
Climate Change	GHGs	GHGs	GHGs	GHGs		

RECOMMENDATIONS

- Adopt sustainable land use management practices
- Practice climate smart agriculture
- Carry out environmental education and awareness

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
DAIRY	Kenya seed ADC. LBDA Mea ltd. Farmchem Bayer Banks MFIs VSLAs ILRI ATC KARI	Individual farmers Common interest groups	KCC Brookside	Farmers Middlemen Supermarkets Municipal markets KCC Milk coolers	Farmer Vendors Hotels Institutions	Public
Stakeholders	Kenya seed co. Mea ltd. ADC ATC	Farmer CIGS CBO s MOA,L&fisheries		County government Public health KEBs CBOs	County government. Vendors institutions Hotels	Public

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
	Farmchem Bayer Banks MFIs VSLAs KARI	NGOs vi-agro,WRCCS		Supermarkets		
Legal Regulatory Frameworks	Veterinary Act Pests control Act	Veterinary Act Pests control Act	KEBs	Public health Act CAP 242 KEBs	Public health Act CAP 242 KEBs	Public health Act CAP 242 KEBs
Direct Impacts	Employment Pollution Soil degradation	Food and nutritional security Employment Pollution Soil degradation	Pollution Waste Employment Tax	Employment Wastes Pollution Tax	Employment Tax Wastes	Food and nutritional security
Indirect Impacts	Diseases Improved livelihood Food insecurity	Diseases Improved livelihood Food security Population growth	Diseases Growth of GDP	Diseases Growth of GDP	Improved livelihood	Improved livelihood Population growth
Cumulative Impacts	Poverty	Economic empowerment		Improved livelihood	Improved livelihood	Improved health
Climate Change	GHGs	GHGs	GHGs	GHGs		

RECOMMENDATIONS

- Adopt sustainable land use management practices
- Carry out value addition and agro processing
- Use high quality germplasm

BUSIA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Enock Tallam	ASDSP-NR&M
Emily Oyoo	GIZ-ACCI
Eugene Nyongesa	PAFID-CARP

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
GROUNDNUTS	Banks Micro financing institutions(FSA,SACCOS) Agrovets Research institutions e.g KARI,KEPHIS	Individual farmers CIGs CBOs Institutions Seed companies	CBOs e.g baba foundation,odiado	CIGs CBO Traders Brokers	Individual farmer Traders Supermarkets	Community Hotels Institutions Individual households
Stakeholders	KARI SEED COMPANIES BANKS-EQUITY,COOPERATIVE,KCB CBOs Farmer groups Microfinancing institutions	CBOs Farmer groups MOA Seed companies PAFID ACCI/GIZ PALWECO KAPAP ADS WKCDD/FMP Agrovets	CBOs e.g baba foundation,odiado Public health	CIGs CBOs Traders Transporters	Traders Super markets Individual farmer Municipal markets	Community Institutions Hotels
Legal Regulatory Frameworks	KEBS Vision 2030 EMCA 1999 Registered land Act Agriculture Act	Vision 2030 EMCA 1999 Forest Act 2005 Registered land Act Agriculture Act	KEBS Public Health Act EMCA 1999 – Waste Management Regulation & Water Quality Regulations	Plant protection Act cap 324 KEBS	KEBS Public Health Acts Local authority Act	KEBS Consumer protection Act Public health Act
Direct Impacts	Losses due to poor quality of seeds Employment & wealth creation Increased input availability to the producers	Land use change Increased income Improved household status Improved product quality Employment & wealth creation Loss of biodiversity Soil degradation Deforestation Loss of biodiversity	Improved prices Employment & wealth creation Increased market access Health hazards Increased incomes	Improved prices Improved distribution of the produce Employment & wealth creation Improved infrastructure Air pollution	Porofit making Wealth creationPoo	Improved Standards of living via improved nutrition & health. Improve d Food security Poor health due to poor or contaminated products

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Indirect Impacts	Competition among service providers Improved quality input Improved livelihoods	Improved quality output. Improved soil control strategies Increased land leasing rates Conflicts among farmers Competition for land for hiring Improved education levels due to increased incomes Reduced ground water recharge due to soil erosion Improved soil conservation technologies.	Improved quality of products through value addition Improved incomes Improved skill base Improved standards of living	Increased market chains and linkages Increased turnover Improved standards of living	Increased client base Enjoys economies of scale Improved standards of living Employment creation	Increased life expectancy due to Improved health status
Cumulative Impacts	Employment & wealth creation Pollution due to supply of substandard inputs Economic loss due to supply of poor quality seeds	Increased income Improved Livelihoods High quality products Employment & wealth creation Soil degradation Loss of biodiversity Deforestation Loss of biodiversity	Employment & wealth creation Occupational diseases due to poor design of processing plants Poor solid waste disposal	Air pollution Employment & wealth creation Increase in traffic congestion	Profit making Wealth creation Poor storage hence threat to public health	Improved Standards of living via improved nutrition & health Poor health due to poor or contaminated products
Climate Change	Increased GHGs emmissions Moisture retention in the soil hence minimize evaporation.	Conflicts among producers Competition for natural resources Increased education levels due to improved incomes Reduced ground water recharge due to soil erosion Improved soil conservation technologies	Improved quality of products through value addition Better income to the processor Increase incidences of diseases Improved standards of living	Improved standards of living Contribute to climate change	Improved standards of living Job creation	Increased life expectancy due to Improved health

RECOMMENDATIONS

- ✓ **Aggressive Promotion Of Appropriate Technologies Across The Country To Increase Productivity**
- ✓ **Adoption Climate Smart Technologies Such As Conservation Agriculture**
- ✓ **Use Of High Quality Preferred Varieties By The Consumers**

KAKAMEGA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1, Tobias Anyanje Ochenje	ASDSP/ NRM Officer
2, Ernest Odwori	Water /CDW
3, Dancan Osale	NEMA/CEO
4, Joel Siele	Nature Kenya/ Project Manager

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
MAIZE	• Kenya Seed • Western seed company • Pioneer • Mae • NCPB • KFA • Equity bank • AFC • One Acre fund • KARI	• Farmers • KARI • Bukura Agricultural College • Prisons	• Local maize millers	• NCPB • Local Traders	• Shops • Traders in open market	• Schools • Hospitals • Collages • Hotels • House holds
Stakeholders	• Kenya Seed • Western seed company • Pionier • Mae • NCPB • KFA • Equity bank • AFC • One Acre fund • KARI • KEPHIS • AGROVETS • CABDA • KEBS	• Farmers • KARI • Bukura Agricultural College • Prisons	• Local Posho millers	• NCPB • Local Traders	• NCPB • Farmers • Farmers groups	• Schools • Hospitals • Collages • Hotels • House holds
Legal Regulatory Frameworks	• EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KEBS	• Agriculture Act	• Vision 2030 • Agriculture Act	• Agriculture Act • Public Health Act • KEBS	• Public Health Act • Weights & measures • County Government	• Public Health Act • Consumer protection Act • KEBS

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
	• KEPHIS					
Direct Impacts	• Poor germination • Late planting • High interest rates • Insufficient fertilizer/seeds • High rate of defaulters • Creation of employment	• Low yields	• High income • Low income	• Increased Employment	• Improved standards of living • Job creation	• Food Secure • Employment
Indirect Impacts	• Bureaucracy in acquiring licenses • High inflation	• High inflation	• High inflation	• Improved livelihood	• Job creation	• Country food secure
Cumulative Impacts	• Foot secure	• Crop failure	• High returns • Break down	• Job creation	• Reduced poverty	
Climate Change	• Water/air pollution	• Soil depletion	• Increased negative effects of climate change • increased Gases emissions depending on technologies employed	• Air pollution	• Increased maize pests	

RECOMMENDATIONS:

- There is need to have maize milling plant.
- Research on maize lethal necrotic disease.
- Diversify on use of maize products.
- Introduce irrigation instead of rain fed farming.

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
LOCAL CHICKEN	• Kenfap • KARI • AGROVETS • KITO GROVET • Micro financial institutions	• Famers	• Hotels • Kakamega poultry slaughter slab	• Local trader • Farmer groups • CBO's	• Hotels • Super markets	• Hotels • Hospitals
Stakeholders	• MOAL&F • KARI • CBO's • KAPP	• KARI • Farmers majoring in local poultry • CBO's	• Hotels	• Local trader • Farmer groups • CBO's • KAPP	• Hotels • Super markets	• Hotels • Hospitals

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Legal Regulatory Frameworks	• MOAL&F • KEBS	• MOAL&F	• MOAL&F • Public health	• MOAL&F	• Public health	• Public health
Direct Impacts	• Food secure • Diseases • Increased employment	• Increased poultry meat production • Increased employment	• Increased poultry products	• Increased employment	• Available poultry meat at the market place	• Improved nutrition
Indirect Impacts	• Improved soil fertility	• Job creation	• Availability of poultry meat at the market	• Job creation	• Job creation	• Improved human health
Cumulative Impacts	• Increased food secure	• Improved livelihood	• Improved export market			• More poultry meat
Climate Change	• Air pollution					

RECOMMENDATIONS

- More research on local chicken.
- Planned marketing structures.
- Research on feeds for local chicken
- Processing plant

TRANS NZOIA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1. Jusper Omwenga	NEMA -County Director
2. Jackson Mang'oli	KAPAP-County Coordinator
3. Evans Mutange	ASDSP-County Natural Resource Management Officer

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
MAIZE	Kenya Seed Co Western Seed Co FRESHCO PANNAR East Africa SCO MAZOP NCPB SABOTI STORES KFA MEA LTD Agro Vets AFC Equity Bank KCB Family Bank KWFT Faulu ECO Bank COOP Bank National Bank Barclays Standard Bank Trans National Bank Diamond Trust Post Bank	ADC Kenya Seed Western Seed Large Scale farms Small Scale farms	Kitale Industries Simba Mtoto Kitale Main Millers Kitale Grain Handlers Kapkoi Grain Handlers	INPUTS DISTRIBUTORS Kenya Seed Co Western Seed Co FRESHCO PANNAR East Africa SCO MAZOP NCPB SABOTI STORES KFA MEA LTD Agro Vets DRY MAIZE AND PRODUCTS DISTRIBUTORS Kitale Industries Simba Mtoto Kitale Main Millers Kitale Grain Handlers Kapkoi Grain Handlers TSS Mombasa maize millers Kabansora LTD United Millers LTD Unga LTD	INPUT RETAILERS Kenya Seed Co Western Seed Co FRESHCO PANNAR East Africa SCO MAZOP NCPB SABOTI STORES KFA MEA LTD Agro Vets MAIZE PRODUCT RETAILERS Khetias, Transmattresses, Suam Tuskys, Nakumat, Ukwala, Uchumi, KFA	House Holds Schools, Colleges, Universities, Hotels, Livestock
Stakeholders	KENFAP, NGOMA, KARI, Farmers, NPCB, KEPHIS, MOA,ASDSP,NCPB,	Farmer, Machinery dealers, Fuel outlets, KARI, NPCB,	Public Health, KEBs, Fed of Kenya Employers, Kenya Ass of Manufacturers (KAM), Occupational Health and safety,	Transporters, Min Of Trade, Min of Transport, Traders,	Min of Trade, County Govts, Public health, Weights and Measures,	Kenya Consumers Association;
Legal Regulatory Frameworks	EAGC, NPCB,EMCA, Agric Act Cap318, Water Act	EAGC, NPCB,EMCA, Agric Act Cap318, Water Act	Public Health Act, Occupational Health and safety, KEBS,	Public Health Act, Occupational Health and safety, KEBS	County Government, Public Health Act, Occupational Health and safety, KEBS	Kenya Consumers Association, Public Health Act
Direct Impacts	Improved standards of living, Acidification, generation of solid waste due to wrapping, Occupation health and safety risks, Water pollution.	Better utilization of land, employment creation, increased income Land degradation such as deforestation, soil erosion, soil	Employment creation, Value addition, Noise and air pollution, occupation health and health risks,	Employment creation, Noise and air pollution, occupation health and health risks, solid waste generation, better prices,GHG emissions	Increased profits, employment creation, pollution due to wrappings, occupation health and health risks	Improved health

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
		exhaustion, soil contamination,				
Indirect Impacts	Deterioration of the ecosystem	Poor health	Environmental degradation, Climate change	Environmental degradation, Climate change,	Improved standards of living	Food security
Cumulative Impacts	Improved standards of living	Improved standards of living	Enhanced profits	Enhanced profits	Enhanced profits	Enhanced food security
Climate Change	Enhances CC due to deforestation	Enhances CC due to deforestation	Enhances CC due to deforestation	Enhances CC due to deforestation	Enhances CC due to deforestation	Enhances CC due to deforestation

RECOMMENDATIONS

- Encourage sustainable exploitation of land resources
- Proper handling of inputs to reduce occupational health and safety risks.

TURKANA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1. Ruth Lokol 2. Eliud Emeri 3. Paul Njuguna	• Diocese of Lodwar, Asst. Co-ordinator Community Development and Livelihoods Programme • TUBAE, Programme Manager • Ministry of Agriculture, Livestock and Fisheries(Sub-County Agricultural ,Loima)

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Goat meat	NGO's GoK Research & breeding institutions FBO's CBO's Banks Agro vets Village bank DLMC & LMAs	Pastoralists Agro-pastoralists	Lomidat abattoir Slaughter slabs Sale yards	Local butcheries Traders Transporters Middlemen and brokers	Local butcheries Open air butcheries Middlemen & brokers Traders	Local communities (public institutions & residence) Neighbouring counties consumers (mainly: Nairobi & Chwele market)
Stakeholders	Pastoralists GoK Development partners: DOL Oxfam VSF- Belgium World Vision LWF e.t.c DLMC	Pastoralists & Agro-pastoralists representatives LMAs'	Lomidat abattoir management Slaughter slabs managers		Middlemen and brokers representatives	
Legal Regulatory Frameworks	• Vision 2030 • Veterinary • Public health Act • EMCA 1999 • CoK 2010 • Local Authority Act	• Veterinary • Public health Act • EMCA 1999 • CoK 2010 • Local Authority Act	EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS Public Health Act	Veterinary Public health Act EMCA 1999 CoK 2010 Local Authority Act	Veterinary Public health Act EMCA 1999 CoK 2010 Local Authority Act	Consumer protection Act Public health Act KeBS
Direct Impacts	Employment & wealth creation	Danger to animal and human health due to use of inappropriate vet drugs Increased income Improved Livelihoods Improved animal health/condition Employment & wealth	Effluent discharge (wastes from slaughter) Employment & wealth creation Occupational and place of work hazards	Contamination during transportation Employment & wealth creation Loss due to inadequate transport and poor infrastructure	Profit making Wealth creation Poor storage hence threat to public health	Improved Standards of living via improved nutrition & health Danger to personal health from contaminated products

		creation Devegetation and rangeland degradation				
Indirect Impacts	Conflicts due to competition	Increased theft of livestock Pressure on grazing ground and pastures improved husbandry skill	Improved quality of products through value addition Better income to the processor Increase in environmental diseases Improved standards of living	Improved standards of living	Improved standards of living Job creation	
Cumulative Impacts	Improved living standards	Improved living standards Rangeland degradation	Land & water pollution Improved incomes	Improved income Improved prestige	Improved income Improved prestige	
Climate Change	Enhanced climate change	Loss of vegetation (rangelands) due to increase production to climate change adaptation	Loss of vegetation (holding grounds)	High consumption of pasture along delivery routes		

RECOMMENDATIONS

1. Formation of strong butchers and retailers association
2. Strengthen farmers organizations & mgt structures
3. Provision of affordable processing, handling and storage facilities
4. Strengthen the livestock marketing council and LMAs
5. Improve market linkages and market infrastructure
6. Breed improvement and farmers husbandry skills
7. Resource mapping; pastures, water sources/ points, livestock population and distribution

UASIN GISHU COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1. Joseph Cheboi	Agriculture / DAO
2. Kuto Josephat	Livestock/DLPO
3. Simon Cheptot	Meteorology/Environmental HydroMeteorologist

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Dairy	• Agrovets • Cooperatives and CBOs • Financial service institutions • AI Services • Livestock Breeders • Technical Service providers • Livestock feed formulators • Commercial fodder and pasture suppliers • Grain millers	• Individual farmers • CIGs • CBOs	• Individual farmers • Cooperatives • CBOs • Private Companies	• Individuals • CIGs • CBOs • Traders • Cooperatives • Companies	• Farmers • Traders (Hawkers & Milk bars) • Super markets • Retail shops	• Local markets (Community & Institutions) • External markets (National & International)
Stakeholders	• Livestock dept • Kenya Dairy Board • Banks, • New KCC • Brookside • Doinyo Lessos • Grain Millers • Kenya seed • KARI • Government Programs (ASDSP, SDCP, EAPP) • NGOs (SNV) • UN Agencies (FAO)	• Livestock dept • Kenya Dairy Board • Banks • Grain Millers • Government Programs (ASDSP, SDCP, EAPP) • NGOs (SNV) • UN Agencies (FAO)	• CBOs • New KCC • Brookside • Doinyo Lessos • Milk cooling plants	• Limited Companies (Buzeki) • New KCC • Brookside • Doinyo Lessos	• Farmers • Traders (Hawkers & Milk bars) • Super markets • Retail shops	• Consumer Protection Organizations • Kebs • Traders (Hawkers & Milk bars) • Super markets • Retail shops • Kenya Dairy Board • Public Health
Legal Regulatory Frameworks	• Livestock Acts • Water Act • Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KeBS	• Livestock Acts • Water Act • Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KeBS	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS	• Public Health Act • Kenya Dairy Board	• Public Health Act • Kenya Dairy Board • KeBS	• Consumer Protection Act • EMCA 1999 • Constitution of Kenya 2010

Direct Impacts	• Employment & wealth creation • Pollution • Economic loss due to substandard inputs • Improved standard of living • Improved soil nutrition by use of manure • Source of cheap green energy (Biogas) • Generation of green house gases. • Improved nutrition	• Increased resource use (energy, Water etc) • Siltation of dams due to soil erosion	• Increased raw material • More income • Improve employment capacity	• Employment creation capacity	• Increased customer base • Increased income • Improved Employment capacity	• Improved health • Reduced diseaes
Indirect Impacts	• Market competition leading to Conflicts	• Competition for natural resources • Reduced ground water recharge due to over extraction • Improved soil conservation technologies thus increased ground water recharge	• Increased costs in waste management	• Increased pollution arising from increased transportation	• Conflict from suppliers straining retailer-supplier relations	• Reduced prices of the product • Increased availability Of the product.
Cumulative Impacts	• A wide variety of input sources	• Food security • Improved peace • Increased tax payment • Improved standards of living	• Increased turnover	• Competition from distributors • Employment creation	• Increased customer base • Increased income • Employment	• Improved health • Wider product Choice
Climate Change	• Deforestation resulting from ploughing for pasture growing • Gaseous wastes from feed manufacturers.	• Generation of green house gases • Deforestation reducing carbon sinks • Use of acaricides increase Chlorofluorocarbons	• Pollution (Solid and Gaseous wastes) produce GHG during decomposition	• Pollution during product transportation (Gaseous wastes)	• Solid Waste generation	• Solid Waste generation

RECOMMENDATIONS

1. Facilitate harvesting of biogas
2. Enhance the use farmyard manure (Nutrient recycling and cost saving)
3. Enhancing the farmers skills on sustainable use of resources
4. Strengthen & increasing the marketing channels
5. Improve infrastructure (Roads, Water, Electricity etc)
6. Embrace integrated solid waste management (Reduce, Recycle or Reuse)

VIHIGA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
1. HAGGAI KASASI 2. MOSES INJENDI 3. ANNE A. OWINO	ASDSP/ ER & SIO WATER/ WATER OFFICER NEMA/ COUNTY DIRECTOR OF ENVIRONMENT

ENTERPRISE	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
BANANAS	• Agrovet • Research institutions eg KARI, KEPHIS • CBOs/NGOs e.g. REFSO, • Financial Institutions e.g. Equity Bank	• Individual Farmers • CIGs • CBOs • Schools	• Hamisi Tissue culture • Banana Group	CIGs CBOs Traders Brokers Individual farmers	• Retail markets • Corner Shops	Institutions Individual Household Community
Stakeholders	Research Institutions Farmers Service providers including extension workers, KENFAP Transporters Financial institutions Agro-vets CBOs/ NGOs	• Individual Farmers • CIGs • CBOs • Schools	Hamisi Tissue culture Banana Group Cooperatives	Traders CIGs	Traders Surrounding Community Farmers	Individual Households Kenyans Institutions
Legal Regulatory Frameworks	Agricultural Act EMCA 1999 Water Act Vision 2030 KeBs Physical planning Act Forest Act 2005	Agricultural Act EMCA 1999 Water Act Vision 2030 KeBs Physical planning Act Forest Act 2005	Agricultural Act EMCA 1999 Water Act Vision 2030 KeBs Physical planning Act Forest Act 2005	Plant protection Act cap 324 KeBS Trade Act	Plant protection Act cap 324 KeBS Trade Act Public health Act	Agricultural Act EMCA 1999 Water Act Vision 2030 KeBs Physical planning Act Forest Act 2005
Direct Impacts	Increased food production Soil erosion control; Employment creation Water pollution Diseases spread e.g. banana wilt. Increased cost of production	Increased food production Soil erosion control; Employment creation Water pollution Diseases spread e.g. banana wilt.	Improved prices Improved market access Improved infrastructure Soil air and water pollution Increased traffic congestion	Improved prices for the farmers Improved market access and marketing for the farmers Improved infrastructure Easier distribution of goods and services	Increased market price for the consumers Improved infrastructure Increased air pollution	Increased market price for the distributors Improved infrastructure Improved Standards of living via improved nutrition & health Poor health due to poor or contaminated products

ENTERPRISE	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
				Soil air and water pollution Increased traffic congestion		
Indirect Impacts	Food security Improved livelihood Reduced insecurity	Conflicts among farmers in the programme and those outside Competition for natural resources Improved education levels due to increased incomes Reduced ground water recharge due to soil erosion Improved soil conservation technologies thus increased ground water recharge.	Improved livelihoods More investment in the area Increased prevalence of HIV and AIDS	Easier access to other goods and services	Availability of different varieties of goods and services	Availability of different varieties of goods and services Improved health
Cumulative Impacts	Improved standards of living High standard of education	Land degradation Improved ecosystem services Improved living standards	Accumulation of caesinogenic chemicals leading to cancers	Acid rain	More produce in the market	Improved living standards Higher Education standards
Climate Change	Green house gases	Manifestation of climate change effects	Manifestation of climate change effects	Manifestation of climate change effects	Manifestation of climate change effects	Manifestation of climate change effects

RECOMMENDATIONS

- Adopt green technologies
- Adopt climate resilient technologies

WEST POKOT COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Lossnge Koolic	NDMA
Micheal Arekow	PADO
Lazarus Wepukhulu	ASDSP

ENTERPRISE	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
Bee Keeping	KVDA, CCS, NDMA, ABL, Honey Care, CABESI, Manor House Centre, AFC	Individuals, CBOs/Groups	CABESI, KVDA Pokot Bee Products Co. Kitalakapel SHG Kodich SHG	CABESI KVDA Pokot Bee Products Co. Kitalakapel SHG Kodich SHG	CABESI Pokot Bee Products Co. Kitalakapel SHG Kodich SHG Supermarkets	Individuals Hotels
Stakeholders	MOLD NDMA KVDA Banks	Individuals CBOs/Groups	CABESI KVDA Pokot Bee Products Co. Kitalakapel SHG Kodich SHG	CABESI KVDA Pokot Bee Products Co. Kitalakapel SHG Kodich SHG Transporters	CABESI Pokot Bee Products Co. Kitalakapel SHG Kodich SHG Supermarkets	Individuals Hotels
Legal Regulatory Frameworks	KeBS, National Beekeeping Station, Livestock Policy KFS Act	Forest Act 2005 KeBS Vision 2030 Public Health Act KFS Act	KeBS Public Health Act EMCA 1999	KeBS	County Government, Public Health Act Weighing and Scale Act (MOT)	KeBS Public Health Act Consumer Act
Direct Impacts	Employment Income Generation Competition for business opportunities Taxation	Food Security Employment Income Generation Tree Cutting Air Pollution (Smoke) Pollution Taxation	Employment Increased income/profit Poor Waste disposal Pollution Taxation	Job Creation, Air Pollution	Profit Making Wealth Creation	Medication Improved nutrition
Indirect Impacts	Exploitation of farmers	Environmental Conservation, Exploitation NR pollination	Increased commodities prices Improved quality	Better living standards Mechanical breakdown Air pollution Road destruction	Better living standards Price fluctuation competition	Better living standards
Cumulative Impacts	Wealth accumulation Better living Standards Reduced tree population	Enhanced livelihoods Wealth accumulation	Wealth accumulation Waste accumulation Land degradation	Wealth accumulation Road destruction	Wealth accumulation	Improved health
Climate Change	Reduced precipitation Prolonged droughts	Reduced productivity	Reduced quantities processed	Reduced transportation		

RECOMMENDATIONS

- Embrace modern technologies in honey production
- Promotion of access to credit facilities

- Environmental conservation e.i. tree planting, range rehabilitation
- Enhanced collaboration among stakeholders
- Capacity building of actors along the value chain

KISUMU FORUM

HOMABAY COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Mrs. Anne Ludenyo	ASDSP/Coordinator Homa Bay County
Ms Pamela Liech	ASDSP/NRM Officer Homa Bay County
Mr. Joseph Ochoro	CEFA-NGO/Field Coordinator
Mr. George Okoth	State Dept of Fisheries/Principal Fisheries Officer, Homa Bay Sub County
Mr. Gerishom Mukanzi	Kenya Forest Service/Sub County Forest Officer, Homa Bay Sub County
Mr. Michael Omondi	State Dept of Fisheries/Sub County Director of Fisheries, Mbita/Suba

Enterprise	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
SORGHUM	Stockists Finance Institutions	Individual farmers Farmer groups Cooperative societies	Millers Feed manufacturers Brewers	Producer Marketing groups Traders Middlemen Individual farmers EABL	Traders Supermarkets	Community National market Regional market
Stakeholders	Kenya Seed Co EABL KARI- Maseno University Equity Bank Coop Bank KWFT KEPHIS	Farmer groups Cooperative societies	EABL Unga Ltd United Millers Sigma Unga Feeds	Producer Marketing groups EABL	Shops Supermarkets	Schools Hospitals Hotels Restaurants
Legal Regulatory Frameworks	Agriculture Act AFFA Act EMCA 1999 KEBS	Agriculture Act AFFA Act EMCA 1999 KEBS Land Act Water Act	KEBS Public Health Act Labour Act EMCA 1999	Trade Act Transport Act	Public Health Act Trade Act Local Authority Act	KEBS Consumer watch Public Health Act
Direct Impacts	Employment and wealth creation Pollution from chemicals used during production	Employment and wealth creation Nutrition and food security Soil degradation Insurgence of diseases and pests	Availability of raw material Employment and wealth creation Air pollution	Employment and wealth creation Degradation of roads Air pollution	Employment and wealth creation Fluctuation in pricing and formation of cartels	Nutrition and food security Palatability and acceptance may take time

Indirect Impacts	Compromise in seed quality Political interference in licensing suppliers	Overproduction flooding market Striga infestation Competition from other crops	Alcoholism Bio-fuel production Improved livestock production Diversified processing labour	Entrepreneurship skills	Inadequate storage facilities	Relief food
Cumulative Impacts	Improved standards of living	Improved standards of living Degradation of the soils Competition for land from farmers	Improved standards of living	Improved standards of living	Improved standards of living	Improved standards of living Improved nutrition
Climate Change	Loss of biodiversity	Temperatures will increase as crop absorbs carbon dioxide				

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Local poultry	Agrovet Finance Institutions Feed manufacturer	Individual farmers Farmer groups Cooperative societies	Butcher Packaging Chicken processing plants Freezers/roasters Curio artisans Supplement manufacturers	Producer Marketing groups Traders Middlemen Individual farmers	Traders Supermarkets	Community National market Regional market
Stakeholders	Kenchic Equity Bank Coop Bank KWFT Veterinary services Livestock production	Farmer groups Cooperative societies	Kenchic Butchery CBO and WG	Producer Marketing groups Kenchic	Shops Supermarkets Markets	Schools Hospitals Hotels Restaurants
Legal Regulatory Frameworks	Livestock Act EMCA 1999 KEBS	Livestock Act Veterinary Act EMCA 1999 KEBS Land Act	KEBS Public Health Act Labour Act Occupational Health & Safety Act EMCA 1999	Trade Act Transport Act	Public Health Act Trade Act Local Authority Act	KEBS Consumer watch Public Health Act
Direct Impacts	Employment and wealth creation	Employment and wealth creation Nutrition and food security Insurgence of diseases and pests	Availability of raw material Employment and wealth creation Air pollution	Employment and wealth creation Degradation of roads Air pollution	Employment and wealth creation Fluctuation in pricing and formation of cartels	Nutrition and food security
Indirect Impacts	Compromise in seed quality Political interference in licensing suppliers	Overproduction flooding market	Improved livestock production Diversified processing labour	Entrepreneurship skills	Inadequate storage facilities	
Cumulative Impacts	Improved standards of living	Improved standards of living Degradation of the soils Competition for land from farmers	Improved standards of living	Improved standards of living	Improved standards of living	Improved standards of living Improved nutrition

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Climate Change	Loss of biodiversity	Temperatures will increase as crop absorbs carbon dioxide				

KERICHO COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
PALAPALA MUTESHI ABSAE N SEDAH	COUNTY DIRECTOR ENVIROMENT-ASDSP/NRM CHAIR KERICHO COUNTY COUNTY DIRECTOR METEOROLOGICAL SERVICES- ASDSP/NRM VICE-CHAIR KERICHO COUNTY

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
TOMATO	Agro Chem Cooperatives Banks Financial services (Micro)associations AFC	Individual farmers CIGs CBOs Farmers Cooperative Societies	Establishing Of Processing Plant* Farmers Traders	Processing plant Traders	Traders Super markets	Community National
Stakeholders	KARI MOALF MEWNR Banks Insurance NGOs-Green Energy Kenya Seed Company	CBOs / Groups Farmers County Steering Committee County Govt.			stalls Supermarkets	Community
Legal Regulatory Frameworks	Vision 2030 EMCA 1999 Registered land Act Agriculture Act Physical planning Act KeBS Financial acts Cooperative acts	Vision 2030 EMCA 1999 Forest Act 2005 Registered land Act Agriculture Act Physical planning Act Biodiversity regulation	Public Health Act EMCA 1999 – Waste Management Regulation & Water Quality Regulations KeBS	KeBS Public health Act	Public Health Acts County Govt. Act KeBS	Consumer protection Act Public health Act KeBS County Govt Act.
Direct Impacts	Employment & wealth creation Increased sales Pollution due on transportation of inputs Increased manure hence reduced fertilizer use Demand for farm inputs Increased demand for improved	Increased income Improved Livelihoods High quality products Employment & wealth creation Soil degradation Increased demand for trees as part of tomato production-Loss of biodiversity	Air & Noise pollution Employment & wealth creation Occupational diseases due to poor design of processing plants Poor solid waste disposal	Air pollution Employment & wealth creation Increase in traffic congestion	Profit making Wealth creation Poor storage hence threat to public health	Improved Standards of living via improved nutrition & health

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
	tomato breeds	Pollution due Spraying of insecticides herbicides Habitat imbalance Methane production from green waste decomposition	Increased opportunity for value chain addition Increased effluent production Pollution due to increased effluent from processing industry			
Indirect Impacts	Conflicts due to local politics on supply Decreased fertilizer demands Increased returns from borrowing Increased awareness and demand for agri-insurance policies	Susceptibility to chemical related health risks Increased knowledge and technology Conflicts among farmers in the programme and those outside Competition for natural resources Improved education levels due to increased incomes	Improved quality of products through value addition Better income to the processor Improved standards of living Increased methane gas production(GHGs) Poor riparian health due to poor effluent discharge	Improved standards of living Contribution to climate change (GHGs)	Improved standards of living Job creation	Improved health
Cumulative Impacts	Improved earnings& standards of living GHGs scaled up	Improved standards of living Land use improved Improved ecosystem services Climate change due to GHGs Poor nutritional practices	Improved standards of living Improved options for value addition	Air pollution Climate change due to GHGs		Poor health due to pollution Improved nutrition due improved standard of living
Climate Change	Green House Gases air pollution Increased negative effects of on climate change	Increased negative effects of climate change Green House Gases Reduction of green house gases depending on technologies employed Water Scarcity Erratic rains Extreme weather events (e.g. increased events of hail storms) Habitat destructions Extinction	Increased negative effects of climate change Green House Gases Reduction of green house gases depending on technologies employed Reduced quality of raw materials Poor transportation Increased cost of production Poor mechanism of waste disposal due to water scarcity	Infrastructural collapse due to extreme weather events Increased cost of transportation	High cost of due business	High cost of living

RECOMMENDATIONS:

- Improved infrastructural network
- Implementation environmental management plan in EIA reports

- Improved use of Climate information ensuring resilience to extreme weather events
- Explore Technological advances in agriculture to ensure climate friendly methods of Agri-production
- Conservation of Soil and environmental systems through agro forestry, proper waste management catchment reclamation, plant and animal sanctuaries
- Bring in more stake holders to strengthen the value chain sustainability and create window for feedback mechanisms from implementation and consumer level
- Self-Regulatory and legal framework for horticultural crops to strengthen marketing and provide gateway for insurance services provision

KISII COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Sophia Wena	KENFAP/ County coordinator
Oloo Vincent Ochieng	NEMA/ County Environment Officer
Edwin Muga	MoALF/ County Director of Fisheries

Value Chain	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
Banana	✓ KARI ✓ agro vets ✓ ATC-kisii ✓ financial institutions ✓ Banks and saccos ✓ Agro-plant	✓ Individual farmers ✓ CIGs ✓ CBOs ✓ Farmers Clusters	✓ KIRDI ✓ Farmer groups ✓ CBOs	✓ Traders ✓ CIGs ✓ Individual Farmers	✓ Supermarkets ✓ Fruit vendors	✓ Hotels ✓ Schools ✓ Local Communities ✓ National Communities
Stakeholders	✓ KARI-KISII ✓ KEPHIS ✓ Financial institutions ✓ Wakenya Pamoja ✓ Ministry of Agriculture ✓ Kisii University	✓ Farmers ✓ Farmer groups	✓ KIRDI-KISII	✓ Middlemen ✓ Transporters	✓ Traders	✓ Local Community ✓ National Community
Legal Regulatory Frameworks	✓ Vision 2030 ✓ Agric Act-CAP 318 LOK ✓ Agricultural Policy ✓ ASDS 2010-2020	✓ Land policy ✓ Lands ACT ✓ Physical planning Act	✓ EMCA 1999 ✓ KEBS standards	✓ Local administration bylaws ✓ KEBS	✓ Public Health Act ✓ Local administration bylaws ✓ KEBS	✓ Consumer Protection Act ✓ Public Health Act
Direct Impacts	✓ Employment Creation ✓ Wealth generation ✓ Soil Degradation ✓ Deforestation ✓ Biodiversity loss	✓ Employment Creation ✓ Improved livelihoods ✓ Soil Degradation ✓ Chemical pollution from pesticide use	✓ Source of employment ✓ Improved incomes from value added products ✓ Effluent discharge to the environment	✓ Air pollution ✓ Wealth creation	✓ Source of income	
Indirect Impacts		✓ Improved soil conservation technologies Conflicts among farmers in the programme and those outside ✓ Competition for natural resources ✓ Improved education levels due to increased incomes	✓ Improved quality of products through value addition ✓ Better income ✓ Increase in environmental diseases ✓ Improved standards of	✓ Improved standards of living ✓ Contribute to climate change	✓ Creation of job opportunities	✓ Good health

Value Chain	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
			living			
Cumulative Impacts	✓ Standard of living improved	✓ Soil degradation ✓ Wealth creation ✓ Gender equity		✓ Air pollution ✓ Climate change		✓ Improved health
Climate Change	✓ Green House Gases	✓ Increased negative effects of climate change ✓ Green House Gases ✓ Reduction of green house gases depending on technologies employed		✓ Increased negative effects of climate change		

RECOMMENDATIONS

Formulate policies that discourage further land fragmentation
Enforce policies which protect Environmentally Sensitive Areas(hill tops, riparian catchment, forests etc)
Priority projects to be given on rain harvesting, agro forestry, terrace construction /contour farming
Employ GAP in banana husbandry
Utilization of banana byproducts(production of biogas)

VALUE CHAIN	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Local chicken	Agrovets Hatcheries Banks & saccos	Individual farmers Farmer groups(cigs) Hatcheries	hotels	Traders	Chicken traders Supermarkets Butcheries	Hotels Local community
Stakeholders	extensionists, WARMA Agrodealers	Groups CBOs NGOs(new horizon for Africa) extensionists		Traders Transporters	Traders butcheries	Local community & other institutions
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • KEBs	• Vision 2030 • EMCA 1999	✓ Public Health Act ✓ EMCA 1999 – Waste Management Regulation & Water Quality Regulations ✓ KeBS		• Public Health Acts • Local authority Act • KeBS	Hotels & restaurants Act
Direct Impacts	• Employment & wealth creation	• Zoonotic diseases				
Indirect Impacts						

VALUE CHAIN	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Cumulative Impacts						
Climate Change						

KISUMU COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
WILSON ODONGO NYARIWO	VI-AGROFORESTRY PROJECT KISUMU
ISAAC OTIENO DAWO	ASDSP
MARCELLAH OJIAMBO	NEMA

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
COTTON	• Agrovet Dealers • Cotton Ginneries • AFC • Commercial Banks • Cooperatives	• Individual Farmers • Cooperatives	• Cotton Ginneries • KICOMI • Cottage Industry (Spinners/ Apparel Making)	• Individual traders • Whole salers	•	• Local • International Markets
Stakeholders	• Cotton Development Authority(CODA) • Cotton Rehabilitation and Management (CRÈME)-NGO • Ministry of Agriculture • Ministry of industrialization • County Government	• Ministry of Agriculture • NEMA • County Government	• CREME(NGO) Ministry of Agriculture • Ministry of industrialization • NEMA • County Government	• CODA • Ministry of Agriculture • Ministry of industrialization • County Government	• County Government	• County Government
Legal Regulatory Frameworks	• Agriculture Act • Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KEBS	• KARI • Pest Control Licensing Board • KEPHIS • Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KEBS	• Plant protection Act cap 324 • KEBS	• Public Health Acts • Local authority Act • KEBS	• Consumer Protection Act • Public health Act • KEBS

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Direct Impacts	• Employment & wealth creation	• Employment & wealth creation • Reeducation of striga weed Infestation • Loss of Biodiversity (due to heavy use of chemicals) • Increased income • Improved Livelihoods • Use of Cotton Stokes for Fuel supply • Soil Degradation • Soil acidification	• Creation of Employment • • Increase Income • Improved Livelihood • Competition from the international market and other synthetic products • Use of Cotton seed Cake for animal feeds	• Creation of Employment • Increase Income • Improved Livelihood	• Creation of Employment • Increase Income • Improved Livelihood	•
Indirect Impacts	•	• High cost of labour (its labour intensive) • Chemical Pollution due to inappropriate use of pesticides	• Pollution • waste disposal challenges • Expansion of the livestock industry (e.g cattle, poultry	• Competition from the international market and other synthetic products	•	•
Cumulative Impacts	•	• Eutriphication of Water bodies • Species Invasion e.g Water hyacinth	• Social problems e.g Alcoholism,	• Enhancement of local cotton industry • Increase volume of trade of other commodities • Decline in trade of Second hand cloths	•	• High quality Textile products
Climate Change	•	• Increased accumulation of GHGs /Global warming	• Increased accumulation of GHGs /Global warming	•	•	•

RECOMMENDATIONS

- Cotton will require supportive policies and legislations from county and national government
- Strong private sector support in revitalizing the "dying cotton section"
- Research need for better seed cotton e.g. BT cotton (fast growing, disease and pest resistance)

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
FISH	Fingerlings Government Banks	Lake Basin Development Authority (LBDA) Beach Management Units(BMUs) Cooperatives	Fish Factories Fish Dryers Fish smokers	Fish Factories Bodabodas "joringi"	Traders Fish Mongers	Hotels Individuals Institutions Local market International Market
Stakeholders	Department of Fisheries County Government KEMFRI LBDA LVEMP II	County Government LBDA NEMA	County Government LBDA NEMA	County Government	County Government	County Government
Legal Regulatory Frameworks						
Direct Impacts						
Indirect Impacts						
Cumulative Impacts						
Climate Change						

NANDI COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
CHARLES BARCHIGEI	CHAIRMAN CSC
JOHN K. TOO	COUNTY WATER DIRECTOR
MARY N TONUI	COUNTY LIVESTOCK PROD. DIRECTOR

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
DAIRY	• Agrovets • Cooperatives • Banks • Financial services associations • ADC and other genetic and breeding institutions	• Agrovets • Cooperatives • Banks • Financial services associations • Individual farmers • CIG • CBO • KENFAP	• Milk Coolers • New KCC • Brookeside Dairies • Molo Milk • Oldoinyo Dairies • Kaptel Dairies • ,Homeland foods,	• CIGs • CBOs • Traders	• Traders • Milk Bars • Super markets • Chamber of commerce	• Community • National • International
Stakeholders	• Agrovets • Cooperatives • Banks • Financial services and associations	• Agrovets • Cooperatives • Banks • Financial services associations • CBO	• Milk Coolers • New KCC • Brookeside Dairies • Molo Milk • Oldoinyo Dairies	• CBOs	• Chamber of Commerce	• KDB • KEBS

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
	• Livestock ,Public Health and Water Depts		• Kaptel Dairies • ,Homeland foods,			
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Agriculture Act • Livestock Dev. Act • Disease Control Act • Physical Planning Act • KeBS • County Gov. policies	• Vision 2030 • EMCA 1999 • Agriculture Act • Livestock Dev. Act • Disease Control Act • Physical Planning Act • KeBS • County Gov. policies	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS • County Gov. policies	KDB kebs	• Public Health Acts • Local authority Act • KeBS • County Gov. Policies	• Consumer Protection Act • Public Health Act • KeBS
Direct Impacts	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply of Inadequate and or poor AI service , and other inputs •	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil erosion & degradation • Habitat loss • Deforestation • Loss of biodiversity • Increased organic manure production • Employment & wealth creation • Poverty and food security • Improved standards of living • Busy community,redused crime	• Improved business • Increase in environmental pollution through effluent	• Improved business	• Improved business	• Food security • Increase in environmental pollution through solid waste
Indirect Impacts	• Conflicts due to local politics on supply • Unfair competition	• Conflicts among farmers in the programme and those outside • Competition for natural resources • Improved education at all levels due to increased incomes	• Improved quality of products through value addition/ competition	• Improved infrastructure • Prices	• Prices regulated by law of supply and demand	• Affordable price of dairy products

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
		• Reduced ground water recharge due to soil erosion				
Cumulative Impacts	• Increase business	• Increased food security and ,wealth creation and employment, improved livelihoods • Increased use of organic fertilizers	• Increase business	• Increase business	• Increase business • Efficient storage to erradicate wastages	• Quality product accesss
Climate Change	• Increased negative effects of climate change • Green House Gases	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed (good nutrition to dairy cow) and earn carbon credit	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases		• Management of solid waste initiatives

RECOMMENDATIONS

- Uniform Green Technologies To Be Adopted Across The Country (Biogas, Manure Composting).
- Capacity Building On The Enterprise And Legal Requirements In The Industry.
- Improve Infrastructure(Road Network For Quick Delivery Of Milk, Install Milk Coolers).

SIAYA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Ken Owuor	ASDSP [NRMO]
Melzedeck Arimba	VI Agro forestry
Elias Omondi	Lower Nzoia water resource users association.
Daniel Nyatuoro	KFS

FRUITS VALUE CHAIN

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
GRAFTED MANGOES	• Agro vets • Banks • Microfinance institutions • KFS • NGOs	• Individual farmers • CBOs • CIGs • Farmer field school groups	• Cottage industries [juice processor] • Agriculture technology development centre [juice processor]	• Traders • CIGs • CBOs	• Super markets • traders	• community • Other counties [proposed]
Stakeholders	• KARI • KFS • VI Agro forestry • ASDSP • KEPHIS • HCDA	• CBO • groups	• Fruit growers and processors association	• Farmer groups	• Individual farmers	• Local community
Legal Regulatory Frameworks	• Vision 2030 • ASDS • MDGS • Agriculture Act • Constitution of Kenya • GoK policies • EMCA	• Vision 2030 • ASDS • MDGS • Agriculture Act • Constitution of Kenya • Jubilee manifesto • KEBS	• Public health Act • Waste management Act • KEBS • County policies	• Plant protection Act • Public health Act • Food and beverage Act • County policies	• Plant protection Act • Public health Act • Food and beverage Act • County policies	• Public health Act • Food and beverage Act • County policies
Direct Impacts	• Employment • Wealth creation and • Income generation • Pollution • Land degradation	• Improved income • Improved lively hood • Soil erosion and degradation • Employment creation • Habitat loss	• Air and noise pollution • Poor waste disposal • Employment and wealth creation • Occupational diseases	• Air pollution • Employment creation	• Profit making • Wealth creation • Poor storage	• Improved standards of living • Increased nutritional security

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Indirect Impacts	• Conflicts between actors	• Conflict between the groups • Improved knowledge status • Improved environmental conservation • Increased competition of natural resources.	• Better income to the processor • Better quality of products • Increased environmental diseases • Improved packaging of the final products	• Improved standards of living • Contribute to climate change.	• Improved income and employment creation	• Improved health standards
Cumulative Impacts	• Improved lively hood	• Improved biodiversity conservation	• Improved standard of living	• Contamination of air • Change of ecosystem	• Sustainable income.	• Improved/poor health status
Climate Change	• Adverse effects on climate • Extinct of biodiversity	• Sustainable land management practices • Emission/reduction of green house gases.	• Sustainable land management practices • Emission/reduction of green house gases	• Sustainable land management practices • Emission/ reduction of green house gases	•	•

RECOMMENDATIONS

- SEA to be conducted in a larger scale and EIA on specific stages along the value chain to check on efficacy and adequacy of the whole process.
- Actors along the value chain to be well sensitized to increase their capacity to perform.
- Need to adapt sustainable land management practices in resilience to climate change

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
FISH	Agrovets NGOs Private companies Ministry of agriculture l/stock and fisheries. e.g. Dominion Farm provides fingerlings	CBOs Individual farmers Cooperative societies Beach management committees	Fish processing factories	Traders Fish mongers Private companies	• Fish monger • Traders • Super markets	Community Others counties International communities
Stakeholders	• Dominion farms • Ministry of agriculture and fisheries • Department of special programmes	• Dominion farms • Individual farmers • CBOs • CIGs • Farmer groups	• East African sea foods	• Individual farmers • Private companies • Traders	• Fish mongers • Dominion farms • Super markets • Food restaurants	• Learning institutions • Local community • International community

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
	• Governs office • Other NGOs					• Other counties
Legal Regulatory Frameworks	Water trans boundary Act Vision 2030 MDGs ASDS Food security Act Public health Act EMCA Fisheries Act	Water trans boundary Act Vision 2030 MDGs ASDS Food security Act Public health Act EMCA Fisheries Act County policies	• Public health • Food and beverages Act • Fisheries Act	• Public health • Food and beverages Act • Fisheries Act	• Public health • Food and beverages Act • Fisheries	• Public health • Food and beverages Act • Fisheries
Direct Impacts	Employment Income generation Water pollution Food security Unsustainable fishing	• Water pollution • Income generation • Employment • Food security • Biodiversity loss	• Effluent discharge • Pollution • Employment and wealth creation • Increased income	• improved income • creation of employment • pollution • traffic congestion along the beaches	Employment Increased income Poor storage Poor disposal	• food secure • improved diet •
Indirect Impacts	• Cross border conflicts (fish ponds mitigate against border conflicts) • Conflict between value chain actors • Conflicting policies • Increased water scarcity	• Improved lively hood • Decommissioning	Foreign exchange Degraded/conserved environment along the beaches	• Improved income •	• Improved health	• Improved health
Cumulative Impacts	• Improved flood control through the use of fish ponds • Depletion / Reduction of species Diversity in Lake Victoria		•	•	•	•
Climate Change	• Increased green house emissions from fish waste by-products •		•	•	•	•

RECOMMENDATIONS

1. The need for early warning systems need to be enhanced

2. Clear definition should be made between lake fishing and fish ponds. Technologies applicable to controlled net farming in Lake Victoria needs to be explored, however this will require a proper ecosystem / ecological study.
3.

MACHAKOS FORUM

KAJIADO COUNTY

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
BEEF	Agro vets Feeds dealers Cooperatives Banks Breeders	Pastorists Ranchers CIG	KMC Slaughter houses (Kiserian, Kajiado and Bisil)	Transporters	Super markets Local butcheries	Schools Outside caterers Institutions (Schools, Hos, Prisons, ATCs) Dog Breeders
Stakeholders	ILRI MOLD Farmers Breeders Feed manufacturers	CBO, Co-ops, Groups UAP and heritage insurance	Vet, NEMA, Public health. KMC	Transporters	Butchers Turneries Horns and hooves merchants	Relevant institutions
Legal Regulatory Frameworks	EMCA Livestock movement	Forest Act	Public health Act Animal health and production Act. EMCA	Public health Act. Traffic Act	Public health	Public health
Direct Impacts	Employment Wealth creation	Improved food security Income generation	Employment Income generation.	Employment creation Income generation	Employment creation Income generation	"Employment creation Income generation
Indirect Impacts	Reduced level of insecurity Conflict Environmental pollution	Soil erosion Competition for Natural resources	Waste management	Reduced level of insecurity Competition	Competition	Unscrupulous traders
Cumulative Impacts	Regular supply of inputs Empowered community	Empowered community	Empowered community			
Climate Change	Increased Green house gases	Increased Green house gases				

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
TOMATO	Agro vets Agro chemicals Cooperatives Banks Researchers(KARI) Seed companies	Farmers CIGs	Proposed food processors	Transporters	Super markets Local markets	Schools Outside caterers Institutions (schools, Hos, Prisons, ATCs)
Stakeholders	KARI MOA Farmers KEPHIS HCDA Seed Companies	CBO, Co-ops, Groups MOWD Interior Ministry (conflict resolution ... for natural resources)	WRMA, NEMA, Public health.	Transporters Ministry of Roads (requires infrastructure development)	Farmers Middle men Supermarkets	Relevant institutions
Legal Regulatory Frameworks	EMCA Warma Kephis Public health Act	HCDA Agricultural Act	Public health Act EMCA	Public Health Act.	Public Health	Public Health
Direct Impacts	Employment Wealth creation	Improved food security Income generation	Employment Income generation.	Employment creation Income generation	Employment creation Income generation	"Employment creation Income generation
Indirect Impacts	Reduced level of insecurity Conflict Environmental pollution	Soil erosion Competition for Natural resources	Waste management	Reduced level of insecurity Competition	Competition	Unscrupulous traders
Cumulative Impacts	Regular supply of inputs Empowered community	Empowered community	Empowered community			
Climate Change	Increased Green house gases	Increased Green house gases				

KITUI COUNTY

ASDSP SEA SCOPING WORKSHOP HELD AT ATC MACHAKOS ON 28/08/2013

Members
1. JOHN K SILIMAN
2. PATRICIA M WAMBUA
3. AUGUSTUS K MALII

LOCAL POULTRY :VALUE CHAIN MATRIX

Enterprises	Input suppliers / Finance	Production/ Farmer	Processor	Distributor	Markets	Retailer	Consumer
LOCAL POULTRY	Local farmers breeds,KARI,Agrovets, Middle men,CBOs and self help groups.	Individual farmers Farmers associations/ groups.	Local processors Farm level.	Individual farmers middle men.	Local Hotels, supetrmarkets Big markets eg.Thika ,Nairobi and Mombasa.	Kiosk owners Shopkeepers Restauarants Super markets	Community County National
Stakeholders	KARI Framers Middlemen Agrovets Dept Livestoct BANKS	Banks Vet officers Agrovets The farmers	CBOs Farmers associations Kenchic Hotels supermarkets	Transporters	Local Hotels, supetrmarkets Big markets eg.Thika ,Nairobi and Mombasa.	•Kiosk owners/ shop keepers/restuarants, (nyama choma) •Super markets	•Community •County •National •
Legal regulatory framework	• Vision 2030 • Livestock Movement Permit	• Acts on Animal Health & Production • Veterinary Regulation	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations	• Livestock Movement Acts	• Livestock Movement Acts	• Public Health Acts	•
Direct impact	• Soil erosion • Deforestation • Employment & wealth creation	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation •	• Air & Noise pollution • Effluent discharge • Employment & wealth creation	• Air pollution • Employment & wealth creation	• Profit making • Wealth creation	• Improved • Standards • of living via • improved • nutrition & • health	• Improved • Standards • of living • improved • nutrition
Indirect Impact	• Competition for grain with humans	• Improved quality of products through value addition • Better income to the	Increased cost of production	Variability of transport costs	Inadequate market outlets	Inadequate storage facilities Inadequate investment capital	• Improved nutrition • Improved living standards

		processor (new market-abattoir)					
Cumulative Impact	• Under development • High illiteracy levels • High Poverty Levels	Inadequate feed resources Inadequate skills on diasese control	Strigent legal regulatory requirements				•
Climate change	• Increased negative effects of climate change Green House Gases						•

MACHAKOS COUNTY

PRESENTERS: NACODEV, KENFAP, HAND IN HAND

ENTREPRISE	INPUT/ SUPPLIER	PRODUCTION	PROSSOCER	DISTRIBUTORS	RETAILERS	CONSUMERS
LOCAL POULTRY	Agro- vets Trainers Financiers Farmers Org GOK	Farmers Groups	Group	Supermarkets Local hotels Middle men	Supermarkets Local hotels	Hotels Local community Schools
DAIRY COW	Agro- vets Trainers Financiers Farmers Org GOK	Farmers Farmer groups Co-op	Dairy co-op Farmer groups	Farmers Co-op Middle men	Milk bar Supermarkets Local hotels	Community Hotels Tea kiosk
STAKEHOLDERS	Banks KENFAP KARI MOALF	Groups CBOS Farmers	Public health MOALF KARI	Businessmen Milk co-op Farmer	Supermarkets Shops retailers	Community institutions
Legal Regulatory Frameworks	Livestock Movement Permit Drugs and poisons board	acts on animal health and production vertinary regulation	KEBS – Waste Management Regulation Public health	Vertinary Act Livestock movement permit KEBS	Local authority permit KRA regulations Public health regulations	Consumer protection Act.
Direct impact	Soil erosion & degradation Habitat loss Deforestation Loss of biodiversity Employment & wealth creation	Increased income Improved Livelihoods High quality products Employment & wealth creation	Air pollution Effluent discharge Employment & wealth creation Increased soil fertility due to use of manure	Air pollution Employment & wealth creation	Profit making Wealth creation	Improved Standards of living via improved nutrition & health

ENTREPRISE	INPUT/ SUPPLIER	PRODUCTION	PROSSOCER	DISTRIBUTORS	RETAILERS	CONSUMERS
Indirect impact	Side effects of prolonged use of pesticides and fertilizers	Reduced profitability due to high competition . School dropouts	Displacement of people	Reduced family ties	Improved standard of living Environmental pollution due to poor waste mgt	
Cumulative effects	Destruction of ecosystem	Chronic diseases Good fertile soils	Destruction of ecosystem	Family breakup		
Climate change	Emission of green house gases	Reduced production because of irregular rainfall	Reduced processing due to reduced production			

RECOMMENDATIONS

- discourage dependence on rainfall and
- use of organic manure

17. MAKUENI COUNTY

Enterprises	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
GREEN GRAMS	• Agrovets • NCPB • Cooperatives • Banks • Financial services associations • KARI	• Individual farmers • CIGs • KARI	• CIGs • CBOs (sorting and Dehulling) And Milling	• CIGs • CBOs • Traders	• cereal shops • Super markets	• Community • National • Learning institutions
Stakeholders	• KARI kambi mawe substation • Banks-equity,	• CBOs / Groups	• CBOs	• CBOs	• Jamii food store-wote • Shops	• Community
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KeBS	• Vision 2030 • EMCA 1999 • Forest Act 2005 • Registered land Act • Agriculture Act • Physical planning Act	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS	• Plant protection Act cap 324 • KeBS	• Public Health Acts • Local authority Act • KeBS	• Consumer protection Act • Public health Act • KeBS
Direct Impacts	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due to	• Air pollution • Employment & wealth creation • Increase in traffic congestion	• Profit making • Wealth creation • Poor storage hence threat to public health	• Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated

	of poor seeds •	• Soil erosion & degradation • Habitat loss • Deforestation • Loss of biodiversity	poor design of processing plants • Poor solid waste disposal			products
Indirect Impacts	• Conflicts due to local politics on supply	• Conflicts among farmers in the programme and those outside • Competition for natural resources • Improved education levels due to increased incomes • Reduced ground water recharge due to soil erosion • Improved soil conservation technologies thus increased ground water recharge.	• Improved quality of products through value addition • Better income to the processor • Increase in environmental diseases • Improved standards of living	• Improved standards of living • Contribute to climate change	• Improved standards of living • Job creation	• Improved health
Impacts Cumulative	• Improved standards of living	• Improved standards of living • Land degradation • Improved ecosystem services	• Improved standards of living • Improved standards of living	• Air pollution • Climate change		• Poor health • Improved health
Climate Change	• Increased negative effects of climate change • Green House Gases	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases		

RECOMMENDATIONS

- UNIFORM GREEN TECHNOLOGIES TO BE ADOPTED ACROSS THE COUNTRY
- ADOPT LIMATE RESILIENT TECHNOLOGIES (DRIP IRRIGATION) AND AVOID RAIN DEPENDANT AGRICULTURE
- PRIORITY PROJECTS TO BE GIVEN ON RAIN HARVESTING, AGROFORESTRY, BUNDU/ TERRACE CONSTRUCTION /COUNTOUR FARMING

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
GRAFTED MANGOES	• Agrovets • Cooperatives • Banks • Financial services associations • KEFRI • KFS	• Individual farmers • CIGs • CBOs		• CIGs • CBOs • Traders	• Traders • Super markets	• Community • National
Stakeholders	• KEFRI -KIBWEZI • Banks-equity, • KFS-MAKUENI	• CBOs / Groups		• CBOs	• stalls • Supermarkets	• Community

Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KeBS	• Vision 2030 • EMCA 1999 • Forest Act 2005 • Registered land Act • Agriculture Act • Physical planning Act	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS	• Plant protection Act cap 324 • KeBS	• Public Health Acts • Local authority Act • KeBS	• Consumer protection Act • Public health Act • KeBS
Direct Impacts	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply of poor seeds •	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil erosion & degradation • Habitat loss • Deforestation • Loss of biodiversity	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due to poor design of processing plants • Poor solid waste disposal	• Air pollution • Employment & wealth creation • Increase in traffic congestion	• Profit making • Wealth creation • Poor storage hence threat to public health	• Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated products
Indirect Impacts	• Conflicts due to local politics on supply	• Conflicts among farmers in the programme and those outside • Competition for natural resources • Improved education levels due to increased incomes • Reduced ground water recharge due to soil erosion • Improved soil conservation technologies thus increased ground water recharge.	• Improved quality of products through value addition • Better income to the processor • Increase in environmental diseases • Improved standards of living	• Improved standards of living • Contribute to climate change	• Improved standards of living • Job creation	• Improved health
Impacts Cumulative	• Improved standards of living	• Improved standards of living • Land degradation • Improved ecosystem services	• Improved standards of living • Improved standards of living	• Air pollution • Climate change		• Poor health • Improved health
Climate Change	• Increased negative effects of climate change • Green House Gases	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases		

RECOMMENDATIONS

- UNIFORM GREEN TECHNOLOGIES TO BE ADOPTED ACROSS THE COUNTRY
- ADOPT LIMATE RESILIENT TECHNOLOGIES (DRIP IRRIGATION) AND AVOID RAIN DEPENDANT AGRICULTURE
- PRIORITY PROJECTS TO BE GIVEN ON RAIN HARVESTING, AGROFORESTRY, BUNDU/ TERRACE CONSTRUCTION /COUNTOUR FARMING

NAIROBI COUNTY

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
DAIRY	• Agrovets • Feeds dealers • Cooperatives • Banks • Micro finance • Saccos	• Farmers	• K.C.C • Brookside	• Transporters • Middle men	• Kiosk owners/ shop keepers / restaurants. • Super markets	• Community • National • International
Stakeholders	• ILRI • Banks • Cooperatives	• CBOs / Groups	• K.C.C	• Transporters	• Supermarkets • Shops	• Community
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Livestock Movement Permit	• Acts on Animal Health & Production • Veterinary Regulation	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations	• Livestock Movement Acts • Traffic acts	• Public Health Acts • KEBS standards.	
Direct Impacts	• Employment & wealth creation	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil erosion & degradation • Habitat loss • Loss of biodiversity	• Air & Noise pollution • Effluent discharge • Employment & wealth creation	• Air pollution • Employment & wealth creation	• Profit making • Wealth creation	• Improved nutrition and health. • Poor health due to intake of contaminated products.
Indirect Impacts	• Insecurity • Loan defaulting	• Competition for natural resources • High education levels • Development • Competition for market.	• Improved quality of products through value addition • Better income to the processor .	Competition for distribution.	Competition for sales.	Good health.
Cumulative Impacts	• Development • High literacy levels • High research levels.					Good health.
Climate Change	• Green House Gases	Improved access to fertilizers.	Green house gases.			

Enterprises	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
SUKUMA WIKI	• Agrovets • Cooperatives • Banks • Micro finance • Saccos • Seed/seedling dealers	• Farmers	• Farmers	• Transporters • Middle men	• Kiosk owners/ shop keepers / restaurants. • Super markets	• Community • National
Stakeholders	• Ministry of Agriculture. • Banks • Cooperatives • Saccos	• CBOs / Groups	• Farmer	• Transporters	• Supermarkets • Shops • Restaurant owners	• Community
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999	• Land use Act.		• Traffic acts	• Public Health Acts • KEBS standards.	
Direct Impacts	• Employment & wealth creation	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil erosion and degradation. • Loss of biodiversity	• Employment & wealth creation	• Employment & wealth creation • Air pollution	• Profit making • Wealth creation	• Improved nutrition and health.
Indirect Impacts	• Insecurity • Loan defaulting	• Competition for natural resources • High education levels • Development • Competition for market.	• Better income to the processor .	Competition for distribution.	Competition for sales.	Good health.
Cumulative Impacts	• Development • High research levels.	• Development • High literacy levels • High research levels.				Good health.
Climate Change		Improved access to fertilizer.				

KWALE COUNTY

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
African Bird eye Chilli	Equator Kenya Frigoken (Suppliers of Chilli)	Community groups and individual farmers	Equator Kenya Frigoken	Equator Kenya Frigoken	Equator Kenya Frigoken	Local and International communities
Oranges	KARI (supply seeds, pesticides...) Individual farmers	Individual farmers	Informal ... Acquired by middlemen and traders.	Motorbikes, Pickups and Canters	Open markets, Supermarkets and Groceries	Local and international communities
Passion	KARI (supply seeds Individual farmers	Community groups and Individual farmers	Acquired by middlemen and traders	Motorbikes, Pickups and Canters	Open markets, Supermarkets and Groceries	Local and International communities
Local poultry	Individual farmers	Community groups and individual farmers	Acquired by middlemen and traders.	Public transport (matatu)	Open markets and individuals	Local and regional communities.
Stakeholders	-MOA -Community -Equator Kenya -Frigoken					
Legal Regulatory Frameworks	EMCA Agricultural Act					
Direct Impacts	-Income generating -Employment opportunities					
Indirect Impacts	-Elephant deterrent -Pesticide					
Cumulative Impacts						
Climate Change						
	Input Supplier Finance	Farmer	Processor	Distributor	Retailer	Consumer
Oranges	KARI Individual farmers	Individuals	Acquired by middlemen and traders.	Motorbikes, Pickups and Canters	Open markets, Supermarkets and Groceries	Local and international communities
Stakeholders	MOA KARI Community					
Legal Regulatory Frameworks						
Direct Impacts	-Income generating -Job creation	-Leaching -Soil degradation				
Indirect Impacts	Food nutrition Vitamin uptake					
Cumulative Impacts						

Climate Change	-Air pollution					
	Input Supplier Finance	Farmer	Processor	Distributor	Retailer	Consumer
PASSION FRUIT	KARI Individual farmers	Community groups and Individual farmers	Acquired by middlemen and traders	Motorbikes, Pickups and Canters	Open markets, Supermarkets and Groceries	Local and International markets
Stakeholders	MOA KARI Community					
Legal Regulatory Frameworks	Vision 2030					
Direct Impacts	-Income generating -Employment opportunities					
Indirect Impacts	Vitamin uptake					
Cumulative Impacts						
Climate Change	Air pollution					
	INPUT SUPPLIER FINANCE	FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Local poultry	Individual farmers	Community groups and individual farmers	Acquired by middlemen and traders.	Public transport	Open markets and individuals	Local and regional markets.
Stakeholders	MOLD Community					
Legal Regulatory Frameworks	No idea					
Direct Impacts	-Income -generating -Job creation -Organic manure					
Indirect Impacts						
Cumulative Impacts						
Climate Change	Air pollution					

LAMU COUNTY

	INPUT SUPPLIER FINANCE	PRODUCER / FARMER / FISHERMAN	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
SEA FISHING	Boat constructors, fishing gear suppliers, ice production (from Malindi & Mombasa), Equity bank, KCB, First community bank, DTB, AFC, Cooperative bank, Saccos	Fisher folk.	Fisher folk, traders, hotels, fish mongers, fillet processors (processed in Malindi & Mombasa)	Transporting companies, traders, transporters	Hotels, fish mongers, individuals traders , fish shops	Hotels, household, schools, hospitals, export
CASHEW NUTS (highly prioritised)	KARI, Farmer groups, agrovets, Equity bank, KCB, First community bank, DTB, AFC, Cooperative bank, Saccos	Cashew Nut farmers	Equatorial nut, Kenya nut, Jungle nut, Macadamia nut, millennium. (processed in Thika or Mombasa)	Equatorial nut, Kenya nut, Jungle nut, Macadamia nut, millennium.	Supermarkets, individual shops, hawkers	Individuals, airlines, hotels, bus companies.
Poultry (indigenous and broilers)	KARI, Farmer groups,ATDC agrovets, Equity bank, KCB, First community bank, DTB, AFC, Cooperative bank, Saccos	Poultry Farmers	Hotels, households,	Individuals, companies, poultry firms	Hotels, individuals, butcheries, companies	Individuals, Hotels, schools, hospitals, ATC.
Stakeholders	Finance institutions(all) Agrovet (C,P)	CBOs, Social services, Associations, CIG(all)	Equatorial nut, Kenya nut, Jungle nut, Macadamia nut, millennium(c) Wananchi marine products and seaharvest(F)	Equatorial nut, Kenya nut, Jungle nut, Macadamia nut,millennium(c) Wananchi marine products and seaharvest(F)	Hotels, supermarkets,	Hotels,household, institutions
Legal Regulatory Frameworks	Poisons and chemical Act, EMCA, kebs, Public Health Act	EMCA,	Public Health Act, EMCA (Waste Mgt. Regulations 2006)	Public health, EMCA	Public health, EMCA	Public health, EMCA
Direct Impacts	Increase in insurance cost	Diminishing fish reserves , Coral and seagrass damage.(F)food insecurity/security, low/high household income(ALL), beach erosion(F) pollution(ALL), Malnutrition of male and low living standards	Less stock(ALL)	Pollution(ALL)	Pollution(ALL)	Pollution(ALL)
Indirect Impacts	Low/High damand for credit/input	Food insecurity/security, improved livelihood,	Low/high processing stock	Low/high stock	Low/high stock	
Cumulative Impacts		Poverty, poor health, access/lack of access to education,	Low/high returns,			
Climate Change		Sea rise, acidification, increase of sea temperatures, destruction of breeding sites	Increase of temperature			

MOMBASA COUNTY

Value Chains	Input Supplier Finance	Producer / Farmer	Processor	Distributor	Retailer	Consumer
• Local Vegetables – Amaranthus (Mchicha), Cowpeas (Mkunde)	Agrovets e.g. Coast Farm care abd Institutions (Banks)	Individuals, Self Help Groups, and Institutions	Companies, Individuals, Self Help Groups, and Institutions (e.g. .	Individuals, Groups and Institutions	Local Vendors e.g. mama mboga and Supermarkets (Naivas, Nakumatt),	Individuals (Local shoppers), and Institutions
• Poultry	Companies (Kenchic and Sigma feeds), Agrovets,	Individuals, Self Help Groups, and Institutions e.g. Kenchic	Companies, Individuals, Self Help Groups, and Institutions e.g. Kenchic	Individuals, Self Help Groups, and Institutions e.g. Kenchic	Hotels, Vendors, Butcheries and Supermarkets	Individuals, and Institutions (e.g. hotels)
• Fish	Groups and Institutions	Individuals, Self Help Groups, and Institutions	Companies, Individuals, Self Help Groups, and Institutions	Individuals, Institutions and Self Help Groups, and e.g. Beach Management Units	Hotels, Vendors, Butcheries and Supermarkets	Individuals, and Institutions
Stakeholders	Min of Agriculture, Livestock and Fisheries, KARI, KEMFRI, Local NGO's, CBO's, Financial Institutions, Insurance Companies, MOWASCO, Kenya Asso. of hoteliers &Caterers KENFAP, HCDA, NEMA, KIRDI, KEPHIS,					
Legal Regulatory Frameworks	NEMA Act, KEBS, Public Health Act, County Government By - laws					
Direct Impacts	• Increased Nutrition and food security, • Source of income, • Diminishing fish reserves in ocean,					
Indirect Impacts	• Protection of Natural Resource (KMFRI, WWF), • Production of foods local thereby reducing overreliance on food from other regions					
Cumulative Impacts	• Increased food reserves and improved health and Nutrition of the locals, • Empowerment of Vulnerable groups, • Enhanced Community Integration, • Land degradation	Extreme harvesting of water aquifers'.				
Climate Change	• Pollutions from Effluent discharges due to processing and farming from use of pesticides,					

MOMBASA - URBAN CENTRE - Built up Environment
RECOMMENDATIONS

UPAP - Multi-storeys Gardens

TAITA TAVETA COUNTY

Presenters: Mwang'ombe, Mlamba and Mnjama

	INPUT SUPPLIER FINANCE	FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
• DAIRY	• Agro vets-Pamtech,palmland,Lomasta,Fariji chemistry. • Micro finance-TT sacco,commercial banks,kwft,FSA • A.I. providers-Wumweri,Werugha,Mghange,Mazi wa trust	• Taita Taveta dairy cooperative • Wumweri dairy Farmers group • Wundanyi zero grazing • Mghange -mwanda dairy group	• Taita Taveta dairy cooperative (Maziwa Trust) • Fryingpan • Tsavo milk bar(Henry) • (Mwandigha) Tamuu milk shop • Milk bars	• Brookeside • Werugha distributors • Tatama sacco • Individual middlemen	• Dairies(Milk bars) • Supermarkets • Retail shops	• community
Stakeholders	Ministry of livestock Semen provider-Cais,abs,wws Agro vets-Pamtech,palmland,Lomasta,Fariji chemistry. Micro finance-TT sacco,commercial banks,kwft,FSA A.I. providers-Wumweri,Werugha,Mghange,Mazi wa trust, Insurance of Dairy Animals (Platnum, Equity)	Taita Taveta dairy cooperative Wumweri dairy Farmers group Wundanyi zero grazing Mghange -mwanda dairy group Ministry of livestock Heifer international NGO(biogas and roof catchment)	Taita Taveta dairy cooperative (Maziwa Trust) Fryingpan Tsavo milk bar(Henry) (Mwandigha) Tamuu milk shop Milk bars Ministry of –livestock,public health Kenya dairy board Financial institution Butterfat recording center	Brookeside Werugha distributors Tatama sacco Individual middlemen	Dairies(Milk bars) Supermarkets Retail shops KeBs Public health Ministry of trade County government	Kenya consumer Association Community
Legal Regulatory Frameworks	Animal disease Act Drug and poison Act KeBS Act	Animal disease Act Drug and poison Act Cattle cleansing Act (Control of Parasites)	Animal disease Act Public health Act Lisencing Act KeBS Act EMCA	Traffic rules Public health EMCA	Trade Act Licensing Act KeBS Act	KeBS Act Public health
Direct Impacts	Land pollution Water pollution Health hazard Job creation	Land pollution Water pollution Health hazard Biodiversity loss Land degradation Emission of methane Job creation	Water pollution Air pollution Emission of green house gases High energy demand Job creation	Air pollution High energy demand Emission of greenhouse gases Access to better market Job creation	Increased solid waste (Polythene bags) Market outlet to the farmer Job creation	Improved nutrition Affordable products
Indirect Impacts	Loss of biodiversity Human diseases Job creation	Loss of biodiversity Human diseases Low crop production Job creation	Negative human health Deforestation Job creation	Negative human health Deterioration of infrastructure Job creation	Job creation	Improved immunity Population increase

Cumulative Impacts	High cost of living Increased dependency of chemicals	Wealth increase Low life expectancy	Increased shelf life Sustainable supply of commodity			
Climate Change		GHG emission Deforestation Water availability Global warming Prolonged droughts Flash floods Erratic rainfalls Emerging diseases	GHG emission Eutrophication Global warming	GHG emission Global warming	Global warming	

TANA RIVER COUNTY

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Beef	• Agrovets • Feeds dealers • Cooperatives • Banks	• Pastoralists	• KMC (Mombasa) • Slaughter houses • By-products Hides and s skins and bones	• Transporters • Middle men	• Kiosk owners/ shop keepers / restuarants, (nyama choma) • Super markets	• Community • National • International
Stakeholders	• ILRI • Banks • Cooperatives	• CBOs / Groups	• KMC	• Transporters	• Supermarkets • Shops	• Community
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Forest Act 2005 • Livestock Movement Permit	• Acts on Animal Health & Production • Veterinary Regulation	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations	• Livestock Movement Acts	• Public Health Acts	
Direct Impacts	• Soil erosion & degradation • Habitat loss • Deforestation • Loss of biodiversity • Employment & wealth creation	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation	• Air & Noise pollution • Effluent discharge • Employment & wealth creation •	• Air pollution • Employment & wealth creation •	• Profit making • Wealth creation	• Improved Standards of living via improved nutrition & health
Indirect Impacts	• Conflicts • Insecurity • Peoples' displacements	• Source of conflicts • Competition for natural resources • Displacement of people	• Improved quality of products through value addition • Better income to the			

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
		• Impacts on Migratory Routes • Low education levels • Underdevelopment	processor (new market-abattoir garsen)			
Cumulative Impacts	• Under development • High illiteracy levels • High Poverty Levels					
Climate Change	• Increased negative effects of climate change • Green House Gases					

RECOMMENDATIONS

Tana River demarcation of land during land use planning exercise. Set up of farming zones. Conservation Areas.

ENTERPRISES	INPUT SUPPLIER FINANCE	FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
• Mango	• Agrovets • Banks • Cooperatives	• Crop farmers •	• Milly fruit processor • e.g. Malindi Farmers Cooperative -	• Transporters • Middle men	• Kiosk owners/shop keepers • Super markets	• Community
Stakeholders	• KARI • Banks • Cooperatives	• CBOs / Groups	• Milly Fruit Processors •	• Transporters •	• Supermarkets • Shops	• Community
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Forest Act 2005 • Charcoal Production Regulations					
Direct Impacts	• Soil erosion & degradation • Habitat loss • Deforestation • Loss of biodiversity • Species invasion • River pollution					
Indirect Impacts	• Conflicts • Insecurity • Peoples' displacement	• Reduction of fish species in the river (leaching of pesticides into river)				

Cumulative Impacts	• Under development • High illiteracy levels • High Poverty Levels					
Climate Change		Increased water abstraction				

NAIVASHSA FORUM

BARINGO COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Eng Jirma H.A.	NDMA (National Drought Management Authority)
Tallam Wilson K	Ministry of Livestock

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
HONEY	Bee keepers KVDA BORESHA SACCO AFC Equity/commercial bank Baraka-agriculture college-nakuru Insurance	Bee keepers(individuals or farmer groups-CIG) CBO-training/capacity building Livestock extension officers	Refineries: KVDA Rachemo Kapkuikui Tabuikian- Barpelo mission maron self help Kibingor-refinery	Rachemo KVDA Transporters/traders Koriema beekeepers Mogoswok beekeepers coop. Tabukian Baraka agric. College Honey care- Nairobi Insurance	Beekeepers Self help groups Women groups	-Residents -traditional breweries -super markets
Stakeholders	Egerton university NDMA	Egerton university NGOS/CBOs NDMA KARI KEFRI KFS ICIPE	Commercial Banks Micro finance/saccos KEBS	Transporters	Commercial banks/ Micro finances	Pharmaceuticals Urban/rural Population Churches-candles
Legal Regulatory Frameworks	-Enterprise funds policies -Vision 2030	Public health Act Beekeeping policy	Public health Act KEBS	Public health Act	Public health Act	Public health Act KEBS
Direct Impacts	Job creation Growth in financial services Enhance d financial management by farmers Technology transfer	Enhanced environmental conservation Research Livelihood diversification Good crop pollination Stronger cohesive groups	Job creation Technology transfer Increased income Stronger cohesive groups	Job creation Increased income	Job creation Increased income	Improved nutrition Medicinal Increased consumption of traditional brews

Indirect Impacts	Stronger inter county collaboration/trade	Increased food production Environmental conservation/biodiversity +- Governance	+-Governance	Improved road network	Increase in investments from profits	Improved health
Cumulative Impacts	Growth in micro enterprises Enhanced research	Improved environment Improved livelihoods Research Technology transfer	Industrialization Product diversification	Containerization Stronger insurance co.	Increase in investments from profits Job creation	Improved health
Climate Change	?	Carbon sinks increased Less soil erosion Increased river flows/recharge	Energy consumption-pollution Solid waste	Pollution-green house gases		

RECOMMENDATIONS

Product diversification

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
CHERVON (GOAT MEAT)	Rangeland Feeds/fodder Livestock insurance Financial institution Micro enterprises Dips Breeders(AI,Hybrids)	Agrovets CAHW Veterinary deprt. Farmers KVDA/KARI KIMOSE- sheep/goat multiplication station	Slaughter houses/slabs	Traders transporters	Livestock traders Butcheries bars	Residents-Urban/rural super market(Nakuru) institutions hotels/bars
Stakeholders	Banks Saccos Research institution-KARI, vet labs CBO/.NGOS farmers	Farmers Banks Saccos Research institution-KARI, vet labs CBO/.NGOS Vet department Training institution- AI Service providers Private vetshops	KMC Tanneries-Mogotio Animal feed companies	Transporters Livestock traders KMC		Supermarkets KMC-to process further -Kia-maiko ,njiru, dagoreti terminal markets
Legal Regulatory Frameworks	Livestock feeds policy Veterinary service policy Animal breeding policy	Cap 364 animal disease control Act CAP 358 animal cleansing Act Cap 356 meat hygiene Act cap 242Public Act cap 366Vet surgeons Act	Cap 364 animal disease control Act CAP 358 animal cleansing Act Cap 356 meat hygiene Act cap 242Public Act cap 366Vet surgeons Act KEBS	Cap 364 animal disease control Act CAP 358 animal cleansing Act Cap 356 meat hygiene Act cap 242Public Act cap 366Vet surgeons Act	Cap 364 animal disease control Act CAP 358 animal cleansing Act Cap 356 meat hygiene Act cap 242Public Act cap 366Vet surgeons Act	Cap 364 animal disease control Act CAP 358 animal cleansing Act Cap 356 meat hygiene Act cap 242Public Act cap 366Vet surgeons Act KEBS

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Direct Impacts	Knowledge management-research Growth in saccos, Financial institutions Job creation	Job creation Increased income Enhanced animal disease control Zoonotic Diseases	Job creation Pollution Air Pollution from Tanneries Zoonotic Diseases		Stronger marketing groups	Improve health/nutrition Zoonotic Diseases
Indirect Impacts	Insecurity-stock theft Infrastructure/training institutions increases	Diversified investments Increase in manure	Competition of water use(industrial and commercial) Communal conflict- water and pastures Animal#/wildlife conflicts Increase water infrastructure		Improved marketing in frastructure-sale yards/	Tanneries-skins Animal feed companies
Cumulative Impacts	Job creation , stronger financial institutions/groups	Industrialization- Improved crop production from manure				Industrialization- tanneries, animal feed companies
Climate Change	Environmental degradation	Less use of artificial fertilizers	Soil and water pollution			

RECOMMENDATIONS

Planting of more trees/ forage
Increased water harvesting
Product diversification
To set up disease free zone (quarantine areas at production and processing levels)
Market Sale yards. Make optimal usage of by-products. (e.g. bio-gas)
Set up mechanisms for early warning systems (for drought and severe changes in weather patterns and diseases)

BOMET COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION	
JOHN SEREM L.N. RATEMO MR OMWANSA DAVID KORIR	 MINISTRY OF INDUSTRIALIZATION AND ENTERPRISE DEV'T NEMA ASDSP	

LOCAL POULTRY VALUE CHAIN

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
LOCAL POULTRY	• Agrovets • Cooperatives • Banks • Financial services associations • KARI Naivasha • Kenbrid Naivasha • KENFAP • Bomet County Agri-system and mktg Ass. • Bomet County coop. dvt committee	• Individual farmers • CIGs • CBOs • Youth Groups • Women groups • Faith Based Orgs.	Poultry slaughter houses-small scale	• CIGs • CBOs • Traders • Transporters	• Traders • Super markets • Hotels	Community Schools/colleges Hospitals hotels
Stakeholders	• SACCOs • Banks- • KFS-Bomet • Agro-Chemical companies • KARI Naivasha • KENFAP • Bomet county coop. development committee • Bomet county agri-systems and marketing association	• CBOs / Groups • Livestock department • Veterinary department	• Veterinary dept-inspection • Public health dept	• CBOs • CIGs • Marketing Associations • Transporters	• stalls • Supermarkets • Hotels	• Community • Schools/Colleges • Hospitals • Hotels
Legal Regulatory Frameworks	-Vision 2030 -EMCA 1999 -Veterinary Act -KeBS	-Vision 2030 -EMCA 1999 -Veterinary Act -SACCO Societies regulatory	-Public Health Act -EMCA 1999 – Waste Management Regulation & Water Quality Regulations -KeBS -Animal Welfare Act	-Animal Welfare Act	-Public Health Acts -County Government -Animal Welfare Act	• Consumer protection Act • Public health Act • KeBS

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
		authority(SASRA)				
Direct Impacts	-Employment& wealth creation -Pollution due to supply of substandard inputs and poor disposal of drug containers -Economic loss due to supply of inferior inputs	-Increased income -Improved Livelihoods -Employment & wealth creation -Soil fertility improved -Enterprise diversification -Environmental pollution-poor disposal of drug containers,	-Air pollution -Employment & wealth creation -Occupational hazards -Poor solid waste disposal -Air pollution-bad smell	-Employment & wealth creation -Increase in traffic congestion -Pollution as a result of poor waste disposal	-Profit making -Wealth creation	-Improved nutrition -Poor health due to poor or contaminated products -increased variety of food products
Indirect Impacts	-Conflicts due to local politics on supply	-Conflicts among farmers in the programme and those outside -improved education levels due to increased incomes -Improved soil fertility	Improved quality of products through value addition -High prices-availability of market -Better income to the processor -Increase in environmental diseases -Improved standards of living	-Improved standards of living -Employment creation	• Improved standards of living • Job creation	• Improved health
Cumulative Impacts	Improved standards of living	- Improved standards of living	- Improved standards of living	-Improved standard of living	Improved std of living -Wide product distribution	• Improved health
Climate Change	-Increased negative effects of climate change(pollution –solid waste)	-Increased positive effects of climate change-poultry manure	Green House Ga	Increased negative effects of climate chang		

RECOMMENDATIONS

- Environmentally friendly technologies to be employed in all stages of poultry processing to ensure a clean and secure environment for all.
- Ensuring appropriate solid waste management practices compliant to solid waste management regulations.
- Promotion of use of organic manure from poultry droppings in crop production activities.
- Establishment of Hatcheries
- Transportation: Laws should be enforced

ELGEYO MARAKWET COUNTY

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
DAIRY	• Agro vets • Cooperatives • Financial Institutions • VETERINARY • KAVES (USAID) • SNV • KENFAP • KARI • KEVEVAPI • Kenya Seed (Grasses / • Artificial insemination	• Individual farmers • Farmer Cooperatives • Self-help groups/CBOs • Educational Institutions	• KCC • Mountain mala plant	• Farmer cooperatives • Traders • Processors • Individual farmers	• Traders • Marketing cooperatives	• schools • Local markets • National
Stakeholders	• KEPHIS • AFC • Faulu Kenya • Equity Bank • KCB, KWFT • MoALF • Kenya Dairy Board • Co-operatives & Saccos • KENDAPO	• Self-help groups • Individual farmers	• KCC • Mountain Mala • Mindililwo Zero-grazing group.	• Farmer cooperatives • Individual transporters • processors	• Local shops • Individual farmers	• Community • Schools • hotels
Legal Regulatory Frameworks	• The Constitution of Kenya • Veterinary and surgeons Act • Pests control Act • KeBS • Co-operatives Societies Acts • SASRA	• Veterinary and surgeons Act • EMCA 1999 • Physical planning Act • Pest control Act • Animal welfare Act • Co-operatives Societies Acts	• Weights and measures • Public Health Act • EMCA 1999 • OSH Act • KeBS • KDB	• Weights and measures • Livestock movement regulation	• Livestock movement regulation • Public Health Acts • County Govt By-laws • KeBS	• Consumer protection Act • Public health Act • Weights and measures
Direct Impacts	• Employment & wealth creation • Economic loss due to poor breeds . • Increased demand for agro-chemicals, acaricides and drugs • Demand for machinery/equipment	• Increased income • Enhanced living standards • High quality products • Employment & wealth creation • Habitat loss • Deforestation • Loss of biodiversity • Land, air and water pollution	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Occupational hazards • solid waste disposal /mgn't challenges	• Air pollution • Employment & wealth creation • Increase in traffic congestion • Opened transportation networks	• Profit making • Wealth creation • Storage and transport challenges	• Improved nutrition & health • Food security
Indirect Impacts	• Elite capture-supply dominated	• Competition for resources and	• Improved quality of products	• Improved standards of living	• Improved standards of	• Improved health

	by the chosen few.	services • strained workforce • Enhanced knowledge base among community through trainings • Improved soil fertility	through value addition • Better income to the processors • Improved standards of living	• Contribute to climate change eg GHG emissions	living • Job creation	• Improved literacy levels due to affluence • Enhanced Disposable income
Impacts Cumulative	• Improved livelihoods • More profits	• Increased productivity • Improved per capita incomes • Land reclamation through manure use	• Improved standards of living • enhanced quality of products	• Air pollution • Climate change	• enhanced lifestyles	• Food security • Changes in lifestyles due to affluence
Climate Change	• Increased negative effects of climate change	• Unpredictable weather patterns. • Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases	• increased profits	• food security • Lifestyle related ailments

RECOMMENDATIONS

- ESTABLISHMENT OF COOLING PLANTS .
- PRIORITY PROJECTS TO BE GIVEN TO DISEASE CONTROL AND IMPROVED DAIRY BREEDS AND ZERO GRAZING, SEMI-ZERO (Paddocks).
- ADOPT GREEN TECHNOLOGIES FOR SUSTAINABLE DEVELOPMENT
  - E.g. rain water harvesting
- ADOPT CLIMATE RESILIENT TECHNOLOGIES E.G.USE OF BIOGAS
- Need for infrastructure development (e.g. roads very vital
-

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
IRISH POTATOES	•Agrovets •Cooperatives •Financial Institutions •KARI •Kenya Agriculture Value chain Enterprises (KAVES-USAID)	•Individual farmers •Farmer Cooperatives •Self-help groups/CBOs •Educational Institutions		•Farmer cooperatives •CBOs •Traders	• Traders • Marketing cooperatives	•schools •Local markets •National
Stakeholders	•HCDA •KEPHIS •AFC •Faulu Kenya •Equity Bank •KCB, KWFT •MoALF	•CBOs •Self-help groups •Individual farmers	Proposed processing unit (Crisps Starches etc)	•Marketing cooperative •Individual transporters	•Market stalls	•Community •Schools •hotels

Legal Regulatory Frameworks	•The Constitution of Kenya •Agriculture Act •KEPHIS •KeBS	•Agriculture Act •EMCA 1999 •Registered land Act •Physical planning Act •Pest control Act •Plant protection Act cap 324	•Weights and measures •Public Health Act •EMCA 1999 •OSH Act •KeBS •Energy Act •Water Act	•Weights and Measures •Legal Notice 9 of 2005/2008 •Traffic Act	•Public Health Acts •County Govt By-laws •KeBS	• Consumer protection Act • Public health Act • Weights and measures
Indirect Impacts	•Marginalization- Elite capture-supply dominated by the chosen few. •Social ills-corruption, nepotism, HIV & Aids, drug abuse	• Competition for resources and services • strained workforce •Enhanced knowledge base among community eg farm planning. •Improved soil conservation.	•Improved quality of products through value addition •Better income to the processor •Increase in environmental related diseases • Improved standards of living	• Improved standards of living • Contribute to climate change eg GHG emissions	• Improved standards of living • Job creation	• Improved health • Improved literacy levels • Enhanced Disposable income • Social ills-corruption, nepotism, HIV & Aids, drug abuse
Impacts Cumulative	• Improved livelihoods • More profits	• Increased productivity • Improved per capita incomes • Land degradation	• Improved standards of living • enhanced quality of products	• Air pollution • Climate change	• enhanced lifestyles	• Food security • Changes in lifestyles
Climate Change	•Increased negative effects of climate change •Green House Gases	•Unpredictable weather patterns. •Increased negative effects of climate change •Green House Gases •Reduction of green house gases depending on technologies	•Increased negative effects of climate change •Green House Gases •Reduction of green house gases depending on technologies employed	•Increased negative effects of climate change •Green House Gases	• Diminished profits	• food insecurity • Lifestyle related ailments

RECOMMENDATIONS

- ESTABLISHMENT OF COTTAGE INDUSTRIES ALL OVER THE COUNTRY FOR VALUE ADDITION.
- PRIORITY PROJECTS TO BE GIVEN TO AGROFORESTRY, SOIL AND WATER CONSERVATION .
- ADOPT GREEN TECHNOLOGIES FOR SUSTAINABLE DEVELOPMENT
- ADOPT CLIMATE RESILIENT TECHNOLOGIES (DRIP IRRIGATION) AND AVOID RAIN DEPENDANT AGRICULTURE

LAIKIPIA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION	
ARTHUR MAATHAI LINCOLN NJIRU LEONARD RITEI	STATE DEPARTMENT OF AGRICULTURE (AGRIBUSINESS DEVELOPMENT OFFICER) STATE DEPARTMENT OF AGRICULTURE (CROPS OFFICER) ASDSP (NATURAL RESOURCES MANAGEMENT OFFICER)	

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
MUTTON	• Agrovets • Banks • MFI's • Veterinary Dept	• Individual farmers • CIGs • Group Ranches • Individual ranchers	• Abattoirs • Tanners	• Traders	• Traders • Super markets	• Community • National • International (Saudi Arabia / Qatar) • Schools • Hotels
Stakeholders	• KEVEVAPI • Banks-equity, • AFC • Agrochemical companies	• CBOs / Groups • ADC Mutara • Livestock department	• Laikipia Meat Industries (existing Abattoir) • Supermarkets (mincing) • KMC	• Private transporters	• Butcheries • Supermarkets	• Hotels/ lodges • Supermarkets
Legal Regulatory Frameworks	• Vision 2030 • ALFA (agric. Livestock and food authority) • PCPB • KEBS • Livestock policies	• Vision 2030 • Veterinary Act • ALFA	• Public Health Act • EMCA • KEBS • ALFA	• Public Health • ALFA • Traffic Act • County by-laws	• Public Health Acts • County by-laws • KEBS • ALFA	• COFEK • Public health Act • KEBS
Direct Impacts	• Job creation. • Pollution due to poor disposal of input containers • Economic loss due to supply of sub- standard inputs •	• Increased income • Improved food security • Pollution due to poor disposal of input containers • Improved Livelihoods • Employment & wealth creation • Soil erosion & degradation • Loss of biodiversity	• Job and wealth creation • Air & Noise pollution • Effluent discharge • Occupational health hazards	• Pollution (air and noise) • Employment & wealth creation • Growth of fabricating industries (e.g. transporters)	• Profit making • Wealth creation • Proliferation of polythene packaging.	• Improved Standards of living via improved nutrition & health • Zoonosis
Indirect Impacts	• Unhealthy competition by pharmaceuticals • Counterfeiting • Growth of pharmaceutical industries.	• Improved crop yield from manure application. • Competition for natural resources • Improved lifestyles. • Conflict over pastures and	• Improved products quality through processing • Prevalence of human diseases from pollution • Improved standards of living • Eutrophication from effluent	• Improved standards of living • Degradation • Human diseases and biodiversity loss from air pollution.	• Improved standards of living. • Environmental hazards- mosquito breeding.	• Improved health • Poor health.

		water. • Security threats (theft and rustling)	discharge			
Impacts Cumulative	• industrial growth.	• Improved standards of living • Land degradation • growth of on- farm agribusiness	• Assured quality • Job and wealth creation	• Infrastructure development	• trade development	• Improved health • Risks of lifestyle diseases
Climate Change	• Emissions from agro- chemical industries contribute to Green House Gases exacerbating climate change	• Green House Gases (methane) from large scale production of sheep increasing climate change. • Loss of vegetation cover	• Green House Gases from processing plants. • Increased demand for fuel wood/ petroleum products.	• Green House Gases from vehicle emissions	Demand for fuel wood.	Fuel wood demand

RECOMMENDATIONS

- PROPER SOLID WASTE AND EFFLUENT MANAGEMENT
- ADOPTION OF CORRECT CARRYING CAPACITY OF LAND IN SHEEP PRODUCTION
- DEVELOPMENT OF BULK TRANSPORT OF LIVE ANIMALS AND PROCESSED PRODUCTS AND ON- SITE PROCESSING
- USE OF ENVIRONMENTAL – FRIENDLY SOURCES OF ENERGY- ELECTRICITY, BIOGAS
- RANGELAND REHABILITATION
- WATER HARVESTING TECHNOLOGIES
- STRATEGIC SITING OF WATERING POINTS TO MINIMIZE TRACKS FORMATION
- BREED IMPROVEMENT TO MAXIMIZE ON WEIGTH PER UNIT
- PROPER ANIMAL MANAGEMENT MECHANISMS
- USE OF ENVIRONMENTAL- FRIENDLY AND BIODEGRADABLE PACKAGING FOR PRODUCTS

NAROK COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
WALTER K. TANUI	WRMA/WATER RESOURCES OFFICER
SHEM O. OKORA	ASDSP/ NRMO
VINCENT OGEMBO	MOA/ AGRIBUNESS DEVELOPMENT OFFICER

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
BEEF VC	-Breeders(KARI &Various) -Seed companies -Agrochem co. -Agro vets - Financial institutions -GoK	-Pastoralists - Group ranches -CIGs, -Farmer Groups -Extension services	-KMC -Community abattoirs - Slaughter houses	-Local livestock traders -Narok Livestock Traders Association	- KMC - Butcheries - Supermarkets	- Households -Institutns./schools - Hotels -International markets
Stakeholders	-AFC/BANKS/MFIs ---PCPB/ KEPHIS/ KARI/ILRI Youth/Women/CDF/ Narok County Govt/NGOs eg. World Vision -Kenya Seed Co./Coopers/ Syngenta/ Norbrooks/Agric machineries -Universities: Egerton, Moi, UoN	-Individual and -Groups of pastoralists -MoALF -NEMA	-KMC -KEBS - Veterinary services -Butcheries/ abattoirs - Public Health and sanitation -NEMA -Water Act	- Local livestock traders -KLMC	-KMC - Butcheries -Supermarkets	- Households - Institutions - Hotels -International markets -Researchers
Legal Regulatory Frameworks	-Veterinary services Act -EMCA -PCPB Act	-ALFA -Land use policy	-EMCA -Food Processing Standardization -Animal welfare Act.	-Food and Drugs Act -Vet animal movement permit -Traffic Offences Act -Livestock marketing Act	-Food and Drugs Act -County Govt business Permit - Trade License	-Public health
Direct Impacts	-Business to input suppliers and financiers -Employment opportunities to input suppliers -Higher input demand	-Improved on-farm employment and income -improved livelihood	-Job creation -Foreign Exchange -Waste accumulation -water abstractions and pollution	-Employment -Income generation	-Employment -Revenue Income generation	-Food security -Improved nutrition and health -Lifestyle diseases
Indirect Impacts	-Bad loans/ non-performing -loss due to obsolete products	-Resource use conflict -Overutilization of the resources -Zoonotic diseases eg MCF, anthrax - Livestock death due to diseases/ drought/floods -cattle rustling (human/human conflicts)	- Inadequate processing capacity(death losses) -Occupational Health Hazards -Improved living stds.	Improved stds of living -Traffic congestion -Improved living stds.	--Zoonotic diseases eg anthrax -Beef deterioration -Containers (polythene and tins) -Improved living stds.	- Zoonotic diseases eg anthrax -Improved living stds.
Cumulative Impacts	- Abuse of agrochemicals -Business income	-Resource use conflict - Land degradation Livelihoods devt	-Over extraction of water resources -Waste menace	- Environmental pollution (air, soil and water)	- Deterioration of meat quality	-Lifestyle diseases like gout, obesity, cancer
Climate Change	-Greenhouse gases	-Methane from livestock -Drought from depletion of	-Air pollution from industrial gases	-Carbon emission from transportation vehicles	- Use of poly-carbons	- Use of poly-carbons

		vegetative cove High risk enterprise				

RECOMMENDATIONS

1. Observation of recommended land carrying capacity (ranch mamangement)
2. Pasture improvement
3. Infrastructure improvement (water sources and slaughter, meat coolers)
4. Research on better breeds with provision of timely extension/veterinary services
5. Improvement of rural access roads
6. Capacity building in terms of training for production and management
7. Advocacy on land tenure and land use policy to facilitate farm forestry.
8. Research on improved breeds and pasture varieties.
9. Recycling of by-products for Generation of Biogas and dung manure (organic farming).
10. Reclamation of degraded lands in agro pastoral areas to increase available land

NYANDARUA COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Thomas Gichuru	Tree Is Life Trust
Jane Njeri Reuben	
Ann Wanyoike	Aberdare Kiburu CFA
Nakuru	
Samuel Mbuthia	Middle Malewa
Jonathan Kimuge	
Charity Kaara	NEMA

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Fish	• Fisheries department • Private farms • Individual farmers • Financial institutions • Agrovets/stockists • Feed manufactures • Devolved funds	• Individual farmers • CIGs • Cooperatives • Fisheries department	• Farmers • Fish mongers/traders • Private/public processing plants (proposed)	• Farmers • Fish mongers/traders	• Farmers • Fish mongers/traders	• Community (urban and rural) • Hotels • Learning institutions • supermarkets
Stakeholders	• Fisheries department • Private farms • Individual farmers • Agrovets/stockists • Feed manufactures • Financial institutions	• Farmer groups • CBOs • MOA/agric sector • Co-operatives	• Public health • NEMA • kebS • Farmers	• Public health • kebs • Farmers	• Stalls • Farmers • Fish mongers/traders	• Community

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Legal Regulatory Frameworks	• Vision 2030 • Registered land Act • KebS • Fisheries Act • Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Vision 2030 • Registered land Act • Agriculture Act Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Public Health Act • EMCA 1999 • KeBS Occupational health and safety Act • Food, drugs and chemical substances Act cap 254	• Plant protection Act cap 324 • KeBS • Occupational health and safety Act Food, drugs and chemical substances Act cap 254	Public Health Acts Local authority Act KeBS	• Consumer protection Act • Public health Act • KeBS
Direct Impacts	• Employment & wealth creation • Livelihood improvement	• Increased income • Employment & wealth creation • eutrophication	• Increased income • Employment & wealth creation • Increased waste	• Employment & wealth creation • Livelihood improvement	• Profit making • Wealth creation	• Improved nutrition • Food security
Indirect Impacts	• Conflicts due to local politics	• Improved education levels due to increased incomes • Improved water harvesting technologies	• Improved standards of living	• Improved standards of living • Contribute to climate change	Improved standards of living Job creation	• Healthy community due to affordable source of protein • Reduced vector borne diseases
Cumulative Impacts	• Improved livelihoods	• Improved standards of living	• Improved standards of living	• Improved livelihoods	Improved livelihoods	Improved livelihoods
Climate Change		• Micro-climate is enhanced				

RECOMMENDATIONS

- Proper disposal of waste during processing should be ensured
- Capacity building, financial mgt. and administration and governance required across VC (mainly for producers)
- Quality fingerlings should be ensured - Secure fish farmers from fraud (e.g. one farmer coned with tadpoles instead of fish fingerlings) (take note of Fish Weeds)
- Appropriate cooling, transportation and processing facilities
- Quality standards of feeds should be ensured
- Promotion of organic farming on farms and along the lakes/rivers to reduce eutrophication
- Development of Cooperatives
- draining of fish ponds through constructed wetlands / or use drained water for drip irrigation

NAKURU COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
Thomas Gichuru	Tree Is Life Trust
Jane Njeri Reuben	
Ann Wanyoike	Aberdare Kiburu CFA
Nakuru	
Samuel Mbuthia	Middle Malewa
Jonathan Kimuge	
Charity Kaara	NEMA

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Pyrethrum	• Pyrethrum boar • Farmer to farmer • Agrovets • Banks & Financial services associations • KARI	• Individual farmers • CIGs • CBOs • Cooperatives	• Pyrethrum board • Private companies	• Pyrethrum board • Private companies	• Hypermarkets • Shops • Manufactures outlets • Super markets	- Community --Regional National International
Stakeholders	• Pyrethrum board • Farmer groups • NEMA • universities • KARI • KEPHIS	• Farmer groups • CBOs • MOA/agric sector • Pyrethrum board • cooperatives	Pyrethrum boar Farmer groups manufacturers	Pyrethrum boar Farmer groups	• stalls • Supermarkets • hypermarkets	Community
Legal Regulatory Frameworks	• Vision 2030 • Registered land Act • Agriculture Act • Cooperative Societies Act • SASRA	• Public Health Act • EMCA 1999 • KeBS	• Plant protection Act cap 324 KeBS	• Public Health Acts • Local authority Act	• kebs	• Consumer protection Act • Public health Act • KeBS
Direct Impacts	• Employment & wealth creation • Economic loss due to supply of poor seeds	• Increased income • Employment & wealth creation • Loss of biodiversity • Toxicity – fish & bees • increased pollination (honey production) • Soil conservation	• Air pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due to poor design of processing plants	• Air pollution • Employment & wealth creation • Livelihood improvement	• Profit making • Wealth creation	•
Indirect Impacts	Conflicts due to local politics	• Conflicts among farmers in and outside cooperatives • Improved education levels due to increased incomes • Improved soil conservation	Improved quality of products through value addition Improved standards of living Climate change and environmental pollution	• Improved standards of living • Contribute to climate change	• Improved standards of living • Job creation	

		• Food insecurity				
Cumulative Impacts	• Improved livelihoods	• Improved standards of living	• Improved standards of living • climate change	• Air pollution • Climate change	• Improved livelihoods	
Climate Change		• Increased effects of climate change due land conversion	• Green House Gases emission and effluents	• Green House Gases emission	Poor waste disposal	

RECOMMENDATIONS

- Proper waste management should be enforced and apply stiff penalties to offenders
- Proper utilization of inputs to avoid environmental degradation

EMBU COUNTY

NAME OF PRESENTERS	ORGANISATION / DESIGNATION
A.M. Gatumu Njeru Reuben Joseph Njiru	

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
DAIRY	• Agro vet shops • Coop societies • FBO / CBOs	• Small scale farmers • Medium scale farmers	• KCC • Local entrepreneurs • Cooperative societies	• KCC • Local entrepreneurs • Cooperative societies • Hawkers	• Small scale traders • Cooperative societies • Milk shops • supermarkets	• urban and rural communities • schools • hospitals
Stakeholders	• KARI • MOAL&F • Financial institutions • Farmers	• Farmers • Agrovet shops • FBOs/ CBOs	• KCC • Local entrepreneurs • Cooperative societies	• KCC • Local entrepreneurs • Cooperative societies • Hawkers	• KCC • Local entrepreneurs • Cooperative societies • Hawkers	• urban and rural communities • schools • hospitals
Legal Regulatory Frameworks	• Kebs • MOAL&F • County Government	• KDB • MOAL&F	• Kebs • KDB • MOH • County Government	• KDB • MOH • County Government	• Kebs • KDB • MOH • County Government	
Direct Impacts	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply of poor inputs	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil fertility improvement	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due to poor design of processing	• Air pollution • Employment & wealth creation • Increase in traffic congestion	• Profit making • Wealth creation • Poor waste disposal hence threat to public health	• Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated products

		• Improved ground cover • Eutrophication	plants • Poor solid waste disposal				
Indirect Impacts	• Increased economic development	• Competition for natural resources • Improved education levels due to increased incomes • Improved soil conservation technologies thus increased ground water recharge.	• Improved quality of products through value addition • Better income to the processor • Increase in environmental diseases • Improved standards of living	• Improved standards of living	• Improved standards of living • Job creation	• Improved health	
Cumulative Impacts	• Improved standards of living	• Improved standards of living • Improved ecosystem services	• Improved standards of living	• Air pollution • Climate change		• Poor health • Improved health	
Climate Change	• Increased negative effects of climate change • Green House Gases	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases			

RECOMMENDATIONS

- ADOPT CLIMATE RESILIENT TECHNOLOGIES AND AVOID RAIN DEPENDANT AGRICULTURE
- PRIORITY PROJECTS TO BE GIVEN ON RAIN HARVESTING, AGROFORESTRY, COUNTOUR FARMING
- CLIMATE SMART TECHNOLOGIES, EG. BIOGAS, FODDER TREES

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
BANANAS	• Agro input shops • Cooperatives • Banks • Financial services associations • JKUAT • MOAL&F • KARI • Aberdare Technologies	• Individual farmers • CIGs • CBOs	• SHG	• CIGs • CBOs • Traders	• Traders • Super markets	• Community • National
Stakeholders	• Agro input shops • Cooperatives • Banks • Financial services associations • JKUAT • MOAL&F	• CBOs / Groups		• CBOs	• stalls • Supermarkets	• Community

	• KARI • Africa Harvest					
Legal Regulatory Frameworks	• Registered land Act • Agriculture Act • Physical planning Act • KeBS • BGAK • KEPHIS	• Vision 2030 • EMCA 1999 • Forest Act 2005 • Registered land Act • Agriculture Act • Physical planning Act	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS	• Plant protection Act cap 324 • KeBS	• Public Health Acts • Local authority Act • KeBS	• Consumer protection Act • Public health Act • KeBS
Direct Impacts	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply of poor inputs	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil improvement due to increased cover and terrace effect	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due to poor design of processing plants • Poor solid waste disposal	• Air pollution • Employment & wealth creation • Increase in traffic congestion	• Profit making • Wealth creation • Improved food security • Poor storage hence threat to public health	• Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated products
Indirect Impacts	• Conflicts due to local politics on supply	• Conflicts among farmers in the programme and those outside • Competition for natural resources • Improved education levels due to increased incomes • Reduced ground water recharge due to soil erosion • Improved soil conservation technologies thus increased ground water recharge.	• Improved quality of products through value addition • Better income to the processor • Increase in environmental diseases • Improved standards of living	• Improved standards of living • Contribute to climate change	• Improved standards of living • Job creation	• Improved health
Cumulative Impacts	• Improved standards of living	• Improved standards of living • Improved ecosystem services	• Improved standards of living	• Air pollution • Climate change		• Poor health • Improved health
Climate Change	• Increased negative effects of climate change • Green House Gases	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases		

RECOMMENDATIONS

- ADOPT CLIMATE RESILIENT TECHNOLOGIES AND AVOID RAIN DEPENDANT AGRICULTURE
- PRIORITY PROJECTS TO BE GIVEN ON RAIN HARVESTING, AGROFORESTRY, COUNTOUR FARMING
- CLIMATE SMART TECHNOLOGIES, EG. BIOGAS, FODDER TREES

KIAMBU COUNTY

NAME OF PRESENTERS	DESIGNATION
Mr. David Kariuki Njoroge Mr. J.K. Mungai Mr. John Wachira Mr. Samuel W Kiarie	

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Dairy	• Cooperatives • Banks • SACCOs • Agro dealers • Donors • Government • CSOs	• Individual farmers/members • CBOs • Associations e.g. CFAs, WRUAs	• Cooperatives •	• Appointed Individual traders •	• Shops, • Supermarkets • Kiosks	• Institutions • Community members • Urban and peri-urban
Stakeholders	• Banks e.g. Equity, Family banks • SACCOs e.g. TAI Dairy and community SACCO • Insurance firm	CSOs	• Cooperatives • Farmers	• Farmers • Private sector	• Shops, • Supermarkets • Kiosks	• Institutions • Community members • Urban and peri-urban
Legal Regulatory Frameworks	• Agricultural Act • EMCA 1999 • Vision 2030 • KeBs • Water Act 2002 • Land Act • Public Health	• Agricultural Act • EMCA 1999 • Vision 2030 • KeBs • Water Act 2002 • Land Act	• EMCA 1999 • KeBs • Water Act 2002 • Public Health Act • Plant protection Act cap 324 • Occupation, health and safety Act	• KeBS • Public Health Act • Plant protection Act cap 324 •	• Public Health Acts • Local authority Act •	• Public Health Act • Consumer protection Act
Direct Impacts	• Employment • Wealth creation • Pollution; air, water, land •	• Increased income • Improved Livelihood • Land degradation • Devegetation • Improved soil fertility	• Pollution • Employment. • Wealth creation • Diseases • Poor waste disposal	• Pollution, air, • Soil erosion • Employment • Traffic congestion	• Make profit • Self employment • Poor storage hence threat to human health	• Improved health • Disease outbreak

ENTERPRISES	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
					• Improved livelihood	
Indirect Impacts	• Conflicts due to local politics on supply and unhealthy competition •	• Low water quality • Land degradation e.g Soil erosion. • Air pollution	• Better income to the processor • Improved living standards. • Improved quality of products through technology advancement	• Losses due to poor handling of the products • Accident • Better living standards	• Source of income • Good health	• Poor water quality • Polluted environment • Air and water borne diseases • High maintenance cost
Cumulative Impacts	• Livelihood improvement	• Pollution (air, water) • Reduced land productivity • Improved living conditions	• Improved quality products • Diversified products • Improved livelihoods	• Increased negative effects of climate change • Poor transport infrastructure	• Increased sales volume • Improved livelihood	• Positive change of income • Improved livelihood
Climate Change	• Green house gas emissions • Increase in negative impacts of climate change	• Food insecurity • Water scarcity	• Increase in green house gases emission •	• Increased land degradation		• Increased poor waste disposal increasing GHG • Practice agro forestry for carbon sinks

PROPOSED RECOMMENDATIONS

- Adopt climate resilient technologies
- Enforcement of EMCA Laws and other related policies
- Capacity building to stakeholders

KIRINYAGA COUNTY

NAME OF PRESENTERS	DESIGNATION / ORGANISATION
1. J.E.Komunga	CAO/ERSIO –ASDSP KIRINYAGA
2. M.W.Machandi	CDE- NEMA KIRINYAGA
3. J.G. Gathura	CDM- METEOLOROGICAL KIRINYAGA

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
RICE	Cooperatives Banks NIB MIAD Centre Agro stockist	• Individual farmers • CIGs • Mwea Rice Growers Multi – purpose Cooperative(MRGM) • NIB/MIAD • G.K Mwea prisons	All Millers (Private & Cooperatives) NIB MIAD Centre G.K Mwea Prisons	Private traders NIB MRGM	• Cereal stockists • Super markets •	• Community • National • Institutions
Stakeholders	• Mwea Rice Growers Multi –purpose Cooperative(MRGM) • NIB/MIAD • G.K Mwea prisons • KARI • Financial Institutions • Pests Chemicals and Poisons Control Board (PCPB) • KeBS	• JICA • MOA • ADS(CCS) • Individual farmer • Desert Locust Control Organisation (DLCO)	All Millers (Private & Cooperatives) NIB MIAD Centre G.K Mwea Prisons	• Transporters • Private traders • NIB • MRGM	• Cereal stockists • Super markets	Consumer
Legal Regulatory Frameworks	• EMCA 1999 • Water Act 2002 • Agriculture Act • Physical planning Act • Quality Control Act	• EMCA 1999 • Water Act 2002 • Agriculture Act •	EMCA 1999 Local Govt. Act Industrial Act Public Health Act Occupation Health and Safety	Transport Act	Local Govt. Act	Quality Control Act
Direct Impacts	• Employment & wealth creation • Pollution due to supply of substandard inputs • Economic loss due to supply of poor seeds • Water borne diseases and pests infection	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil erosion & degradation • Habitat loss	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Occupational diseases due to poor design of processing plants • Poor solid waste disposal	• Air pollution • Employment & wealth creation • Increase in traffic congestion • Increase in draft animal abuse	• Profit making • Wealth creation • Poor storage hence threat to public health • Child labor	• Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated products • Improved livestock production from by

	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
		• Loss of biodiversity • Reduced quality of domestic water • Reduced water flow downstream • Creates water conflicts • Emmission of Greenhouse gases from the paddy fields • Child labor				products
Indirect Impacts	• Conflicts due to local politics on supply	• Conflicts between farmers & organized cartels • Competition for natural resources • Improved education levels due to increased incomes • Reduced ground water recharge due to soil erosion • Contribute to climate change	• Improved quality of products through value addition • Better income to the processor • Increase in environmental diseases • Improved standards of living	• Improved standards of living •	• Improved standards of living • Job creation	• Improved health
Cumulative Impacts	Improved standards of living	• Improved standards of living • Land degradation • Improved ecosystem services	• Improved standards of living • Improved standards of living	• Air pollution • Climate change		• Poor health • Improved health
Climate Change	• Increased negative effects of climate change • Green House Gases	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed •	• Increased negative effects of climate change • Green House Gases • Reduction of green house gases depending on technologies employed	• Increased negative effects of climate change • Green House Gases		

Proposed recommendations

- UNIFORM GREEN TECHNOLOGIES TO BE ADOPTED ACROSS THE COUNTY
- ADOPT CLIMATE RESILIENT TECHNOLOGIES (HIGHLAND RICE FARMING) AND AVOID PADDY IRRIGATED AGRICULTURE
- PRIORITY PROJECTS TO BE GIVEN ON RAIN HARVESTING, FLOOD CONTROL MECHANISMS AGROFORESTRY
- UNDERTAKE AN ENVIRONMENTAL IMPACT ASSESMENT WHEN INTRODUCING ANY PROCESSING UNITS

MERU COUNTY

NAME OF PRESENTERS	DESIGNATION
P.MUGO	KFS
S.NABEA	IRRIGATION/UTaNRMP
Z.MATUMBI(MRS)	CFAs

Enterprise	Input Supplier Finance	Production / Farmer	Processor	Distributor	Retailer	Consumer
MAIZE	Agrovets Cooperatives KARI Kenya Seed NCPB Banks MFIs NGOs Faith based organizations	Individual farmers CIGs CBOs CFAs	Cooperatives Traders Private companies	Traders CIGs Cooperatives Private companies	Traders Supermarkets Shops	Local and National community
Stakeholders	Government agencies Distributors Financiers	Government Agencies Farmers CIGs, CBOs, CFAs	Cooperatives Private Companies	Traders CIGs Transporters	Supermarkets Traders Shop owners	Local and national community Government agencies
Legal Regulatory Frameworks	EMCA Agriculture Act Finance Bill Health Safety Act	EMCA Health and Safety Act Agriculture Act Water Act 2002	EMCA Health and Safety Act KeBS Trade Act Cooperative Act Local Authority Act	Traffic Act Health and Safety Act Companies Act Local Authority Act	Public Health Act KeBS Trading Act Local Authority Act	KeBS Local Authority Act Public Health Act
Direct Impacts	-Employment -Pollution due to supply of substandard inputs -loss due to supply of poor seeds -Diseases due to poor handling of agrochemicals	-Loss of soil fertility due to poor agricultural practices -Food security -Employment creation Improved Livelihoods -High quality products -Soil erosion -improved prices	Air & Noise pollution -Effluent discharge -Employment creation -Occupational diseases due to poor design of processing plants -Poor solid waste disposal -Increased water demands-improved prices	-Air pollution -Employment creation -Increased traffic congestion	-Profit making -Wealth creation -Poor storage hence threat to public health	-Diseases due to poor or contaminated products
Indirect Impacts	-Conflicts due to local politics on supply -Loss of quality agro-inputs	-Conflicts due to local politics on supply	-Competition for natural resources -Reduced ground water recharge due to soil erosion -Improved soil conservation technologies thus increased ground water recharge.	-Improved quality of products through value addition Better income to the processor Increase in environmental diseases Improved standards of living	- Improved standards of living -Contribute to climate change	- Improved standards of living -Job creation -Food shortage
Cumulative Impacts	Improved standards of living Increased life expectancy	Land degradation Improved ecosystem services	Improved standards of living	Air pollution Climate change	Sustainable business	Poor health

						Improved health
Climate Change	Loss of biodiversity (maize varieties) Green house gases	Increased air, water and soil pollution	Air pollution	Air pollution		

RECOMMENDATIONS
-Good Agric Practices
-Capacity building
-Appropriate waste management strategies
-Enforcement of Regulations
-Improve extension services
-Increase tree cover
-Use of appropriate technologies eg Drip Irrigation,Green houses etc

MURANG'A COUNTY

NAME OF PRESENTERS	DESIGNATION / ORGANISATION
EZRA NG'ANG'A	CDE-NEMA
EPHANTUS IRUNGU	TREASURER-KAHURO LIVESTOCK BREEDERS COOP SOCIETY
JOHN WAIHENYA	SCAO- MURANG'A SOUTH

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
FRENCH BEANS	Agrodealers Banks Seed Companies Horticultural crops exporting companies KEPHIS	Individual/small scale farmers Contracted farmers Large scale farmers Companies	Grading/sorting at collection centers Company(packaging)	Farmer Groups Companies Traders Individuals	Traders Local Markets Super Markets	Individuals(County, National and International)
Stakeholders	Kenya Seed Company Simlaw Farmers Government institutions PCPB Agrodealers Companies FPEAK	Individual/small scale farmers Contracted farmers Large scale farmers Companies Government institutions Agrodealers	FRIGOKEN NICOLA FARM COMPANY PROPOSED PROCESSING PLANT	Farmer Groups Companies Traders Individuals FRIGOKEN NICOLA FARM	Traders Super Markets HCDA FPEAK	Individuals(County, National and International)
Legal Regulatory Frameworks	Vision 2030 Agriculture Act PCPB Act EMCA 1999	Vision 2030 Agriculture Act PCPB Act EMCA 1999 Registered Land Act Water Act	Agriculture Act Public Health Act EMCA 1999 Registered Land Act Physical Planning Act	Traffic Act Public Health Act HCDA Regulations	Public Health Act County Government Regulations	EMCA Waste Management regulations Codes of consumer standards

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
Direct Impacts	Water pollution Air pollution Employment & wealth creation Pollution due to supply of substandard inputs Economic loss due to supply of poor seeds	Increased income Improved Livelihoods High quality products Employment & wealth creation Soil erosion & degradation	Air pollution Effluent discharge Employment & wealth creation Poor waste disposal Better income to the processor and improved economic status of the county	Air pollution Employment & wealth creation	Wealth creation	Improved Standards of living. improved nutrition & health Health risks
Indirect Impacts	Conflicts	Competition for natural resources Improved education levels. Reduced water levels	Improved quality of products through value addition Improved standards of living	Improved standards of living	Improved standards of living Job creation	Improved health and nutrition
Cumulative Impacts	Improved standards of living	Improved standards of living Land degradation	Improved standards of living	Air pollution Water Pollution	Assured business	Increased health risks Improved health and nutrition
Climate Change	Increased negative effects due to climate change	Increased negative effects due climate change	Increased negative impacts due to climate change	Increased negative impacts due to climate change	Increased negative impacts due to climate change	Increased negative impacts due to climate change

PROPOSED RECOMMENDATIONS

- proper utilization of agrochemicals
- put policies in place (at county level) to manage the environment
- proper planning should be done especially when setting up of new factories
- enforcement of EMCA 1999 and all other legal and regulatory frameworks

NYERI COUNTY

NAME OF PRESENTERS	DESIGNATION
S. Mwangi	NEMA
M.W.Ndegwa	KFS
P.Kingata	KSEI

ENTERPRISE	INPUT SUPPLIER FINANCE	PRODUCTION / FARMER	PROCESSOR	DISTRIBUTOR	RETAILER	CONSUMER
IRISH POTATOES	Banks, cooperatives, KARI, min of Agri, Agrovets	Individual farmers, CBOs CIGs, Institutions, private organizations	Proposed processing plant. One exists in Nyandarua	Traders, cooperatives, CIGs, CBOs, NGOs, Min of Agri	Traders, supermarkets, open markets,	community, national, international
Stakeholders	KARI, MOA, community, banks, cooperatives, traders	CBOs/Groups		Traders, cooperatives, CIGs, CBOs, NGOs, Min of Agri	Traders, supermarkets	community, national, international
Legal Regulatory Frameworks	• Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act • KeBS • County laws	• Vision 2030 • EMCA 1999 • Registered land Act • Agriculture Act • Physical planning Act	• Public Health Act • EMCA 1999 – Waste Management Regulation & Water Quality Regulations • KeBS	Trade Act, Kebs, Tax laws,EMCA1999	County laws ,Kebs,public heath	Consumer protection Act ,Kebs, public heath Act
Direct Impacts	• Employment & wealth creation • Water pollution due to supply of chemical fertilizers	• Increased income • Improved Livelihoods • High quality products • Employment & wealth creation • Soil erosion & degradation • Loss of biodiversity	• Air & Noise pollution • Effluent discharge • Employment & wealth creation • Poor solid waste disposal	• Air pollution • Employment & wealth creation	• Profit making • Wealth creation	• . Improved Standards of living via improved nutrition & health • Poor health due to poor or contaminated products
Indirect Impacts	Conflicts due to business rivalry and vested interests	Improved livelihoods,education,health, infrustracture, loss of biodiversity due chemical use	• Improved quality of products through value addition • Better income to the processor	• Improved standards of living • climate change due to exhaust gasses	• Job creation • Higher stds of living	• Improved health
Cumulative Impacts	• Improved standards of living	• Improved standards of living • Land degradation	• Improved standards of living	• Climate change due to air pollution	Improved standards of living	• Poor health due to chemical usage in the farms • Improved health due to improved nutrition
Climate Change	• Increased negative effects of climate change due to chemical usage	• Reduction of green house gases depending on technologies employed • GHGs when spraying	Green House Gases due to exhaust gases	Green House Gases due to exhaust gases		Green House Gases when cooking and waste production

RECOMMENDATIONS

- Reduced over reliance of pesticides use and promotion of organic farming to reduce the environmental impacts of the project.
- Promotion of drip irrigation and rainwater harvesting in the drier areas of the county to ensure food security.
- Proper tillage practices(across slope instead of downslope).
- Incorporation of the tree component in the potato farming.
- Improve roads and general infrastructure

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 28/6/2013 Venue MACHAKOS ATC

ACTIVITY STRATEGIC ENVIRONMENTAL ASSESSMENT SCOPING WORKSHOP

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 28/8/2013 Venue MACHAKOS ATC

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REPUBLIC OF KENYA

Venue - Mombasa beach Hotel

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date 26/8/2013 Venue MOMBASA BEACH HOTEL

ACTIVITY STRATEGIC ENVIRONMENTAL ASSESSMENT SCOPING WORKSHOP

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date .... Venue..........

ACTIVITY..........

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17	SHADRACK KIPKEMOI	97024456	ASDSP	0724525746	kipkemoi shadrack@yahoo.com	
18	Beth Mwangi	89068001	ASDSP	0727782601	bethmwangi ya@yahoo.com	
19	Lips Mafumbo	6733685	Lima Group	0726650313		
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date 26/8/2013 Venue MOMBASA BEACH HOTEL

ACTIVITY SEA SCOPING WORKSHOP

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22.	NICHOLAS MUGHANA	23097600	World Vision	0724 578334	Nicholas_Kmndy @wvi.org	
3	JOHN BETT	13721342	WWF -LAMU	0712885117	Jbett@wwf.Pinda.org	
24.	NEEMA S. SUYA	24547856	WWF- KWALE	0711501951	nsuya@wwfesarpo-org	
4.	BARAZA MANG'ENI	24642197	TULIZZA COMMUNITY	0710149803	bamangeni@gmail	

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date 28/8/2013 Venue MACHAKOS ATC

ACTIVITY STRATEGIC ENVIRONMENTAL ASSESSMENT SCOPING WORKSHOP.

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Ombicha K. Samuel	2009064140	ASDSP-CCU-NRMO	0714214982	ombichasam@yahoo.com		
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CHRIS SUNDAY	25301191	(Kenya Bamboo K.B.C Centre)	0720-346410	chrissunday-sunday@gmail.com		NAIROBI
Lydia Owenga	25145562	Njiru Stakeholders forum (NSDF)	0727-966772	lyowenga@yahoo.com		NAIROBI
Maureen Ogega	25018080	Ecolife	0723332170	bosiboriogega@gmail.com		
SHADRACK NGEWA	21717577	Ecolife	0738-313887	sngewa@yahoo.com		
Tom NZIBE	21960642	Ecolife	0772116800	tmwalali@yahoo.com		
Shadrack Kipkemoi	97024956	ASDSP-HQ	0724525746	KipkemoiShadrack@yahoo.com		
Victor A. Makini	24139119	Hand in hand	0728986174	victor.ablonda@handinhandea.org		
Rev. COSMAS MWANZIA	5692967	IVA COBED	0733370385	CMWanzia2005@yahoo.com		Machakos
Petronilla N. Ndulthu	9370521	NRMO-ASDSP	0721252423	pnwanjugu@Yahoo.com		MACHAKOS
						Machakos(Ho

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date 2/9/2013 Venue KISUMU HOTEL

ACTIVITY SEA SCOPING WORKSHOP

	Name	I/D or P/No	Institution	Tel. no	Email address	Signature	COUNTY
11	ABSALE N SEDAH	1995010090	COUNTY MET. OFFICES KERICHO	0720457473	edonke [illegible] @meteo.go.ke	[signature]	
12	SAMSON O. HAYANGA	1980006858	COUNTY MET. OFFICES - MIGORI	0722645625	hayanga@meteo.go.ke	[signature]	MIGORI
13	Shadrack Ngeno	21717517	Ecolife Consultants	0738-313881	Sngeno@yahoo.com	[signature]	
14	DR. JOHN K. MUSINGI	5692501	ECOLIFE CONSULT.	0725259377	info@ecolifeconsultants.com	[signature]	
15	WILSON MARITIM	11588203	NEMA	0721-216440	wmaritim@nema.go.ke	[signature]	NYAMIRA
16	DISMAS BARAZA	2802027	STEERING Committee member MIGORI	0722245656	swepeteg2011@yahoo.com	[signature]	MIGORI
17	ISAAC O. DAWO	1997028578	ASDSP-KISUMU	0727281195	isaacdawo@yahoo.com	[signature]	
18	Wilson O. Nyariwo	9893342	VI-Agroforestry ksm	0733915476	wilson.nyariwo@viagroforestry.org	[signature]	KISUMU
19	MELCHIZEDECK ARIMBA	14452384	VIAGROFORESTRY (SIAYA)	0728203066	melzarimba@yahoo.com	[signature]	SIAYA

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 2nd/9/2013 Venue KISUMU HOTEL

ACTIVITY ASDSP SEA SCOPING WORKSHOP.

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1	Pamela Lidh	1997029192	ASDSP Homa-Bay	0720512824	lpamelaakoth@yahoo	[signature]	Homa Bay
2	Daniel Nyaturo	8607118	KFS	0710340306	nyaturodaniel@yahoo.com	[signature]	SIAYA
3	G. A. S. Ooko	00210(KFS)	KFS	0722880503	gasooko@gmail.com	[signature]	NYAMIRA
4	SOPHIA W. EPHELY	200820191	KENFAP	0721343827	wanayusuf2000@yahoo.com	[signature]	KISII
5	ANNE LUDENYO	1980039364	ASDSP. H/Bay	0726737749	anneludenyo@yahoo.com	[signature]	HOMA BAY
6	PATRICK ABADE MILEWA	1518774	LAVIC-OS	0720807644	abademilewa@yahoo.com	[signature]	MIGORI
7	Jacob Keror	2005056903	Ministry of Agriculture	0721268644	daonyamiranorth@yahoo.co / jacobkeror@yahoo.com	[signature]	NYAMIRA
8	Michael D. Omondi	1992049074	State Dept of FISHERIES	0722698293	umd2day@yahoo.com	[signature]	HOMA BAY
9	EDWIN MUGA	1992048882	FISHERIES	0733448048	otmuga@yahoo.com	[signature]	KISII
10	OPANDO M. O	1997066312	MEWNR	0721249209	mauropnd@…	[signature]	

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 2/9/2013 Venue KISUMU HOTEL

ACTIVITY SEA SCOPING WORKSHOP

	Name	I/D or P/No	Institution	Tel. no	Email address	Signature	COUNTY
21	JOSEPH OCHORO	20058660	CEFA NGO	0721857278	ochoro@yahoo.com	[signature]	Homabay County
22	Tom NZIBE	21160642	Ecolife /Consultant	0772116800	tmwalali@gmail.com	[signature]	
	~~DR. JOHN K. MUSINGI~~	~~5092841~~	~~Ecolife/Consultant~~				
23	John K Too	0736853	Water Dept	0722 448327	tookip54@yahoo.com	[signature]	Nandi County
24	Charles Barchigi	6420063	CSC Chairman NAHP	0721217003	barchigi.charles@gmail.com	[signature]	NANDI COUNTY
25	George O. Oketh	5452731 1997074537 0721772952	Fisheries H/Bay	0721772952	gotieno2001us@yahoo.com	[signature]	Homa Bay
26	Mary N. Tonui	86076283	LIVESTOCK PROD NANDI	0724412123	marytonui@yahoo.com	[signature]	NANDI
27	Kennedy O. Owuor	1989069578	ASDSP - SIAYA	0710977104	kenowuor11@yahoo.com	[signature]	SIAYA
28	Marcellah Ojiambo	22891175	NEMA - KSM	0721772237	mojiambo@nema.go.ke	[signature]	KISUMU
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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 21/9/2013 Venue KISUMU HOTEL

ACTIVITY SEA SCOPING WORKSHOP

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30	Patrick Mutesi	0518897	NEMA	0722399541	mutesh@yahoo.com	
31	Cleo Vincent Achieng	22338916	NEMA-KISII	0712302367	gvsinfoching@gmail.com	
32	Shadrack Kipkemi	9704956	ASDSP-US	0724525746	Kipkemoi Shadrack @ yahoo.com	

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 21/9/2013 Venue GOLF HOTEL KAKAMEGA

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3	L.W. WEPUKHULU	19880[illegible]	ASDSP	0725338222	[illegible]		WEST POKOT
4	LOSENGE KOOLIC	22645840	NDMA	0720963703	kooliclos@yahoo.com		West pokot
5	MICHAEL AREKON	11530514	PADO ORG:	0728022509	thePadowest@yahoo.com thePadowest		W/POKOT
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7	EMMANUEL MASAKE	0681628	KAREU MPYA CBO	0727424914	kareumpya@gmail.com	masake	BUNGOMA
8	TOM NZIBE	21960642	ECOLIFE CONSULTANT	0722116500	tnwadali@gmail.com		-
9	RUTH LOKOL	22426362	DOL	0718522329	Kosialokol[illegible]@yahoo.com		TURKANA
10	SIMON K. CHEPTOT	13434469	KENYA METEOROLOGICAL SERVICES	0720607898	scheptot@gmail.com		UASIN GISHU

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 2/9/2013 Venue GULF HOTEL KAKAMEGA

ACTIVITY SEA SCOPING WORKSHOP

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13	MOSES INJENDI	7972249	WASM	0725 766085	Mosesinjendi@yahoo	NA	VIHIGA
14	Jackson Mansoli	6283869	KAPAP	0727523460	mansolijack@yahoo.com		TRANS NZOIA
15	Shadrack Ngeva	21717517	Ecolife consult	0738-313881	sngeva@yahoo.com		NAIROBI
16	Jusper Omwenga	11854769	NEMA	0721473901	jusperomwenga@yahoo.com		T/NZOIA
17	DR. JOHN MUSINGI	5692501	ECOLIFE CONSULTING	0725259377	info@ecolifeconsultin.com		
18	Shadrack Kipkemoi	9702456	ASDSP	0724257246	Kipkemoishadrack@yahoo.com		
19	NJUGUNA P.K	9702588 9	MOA	0710911644	njugunak@yahoo.com		TURKANA
20	Joseph Chebai	0823978	M.O.A.	0722292247	daovasingishu@yahoo.com / josephk.chebai@yahoo.com		Vasingishu

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date ..... Venue.....

ACTIVITY.....

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22	ANDE A. OWINO	10574087	NEMA	0725712826	aanyango1998@gmail.com		Vihiga
23	DUNCAN OSANO	7969004	NEMA	0724141776	dunanosano@yahoo.com		KAKAMEGA
24	ZIP MUGONYI	19860791 34	ASDSP	0727504733	zmugonyi@yahoo.com	Z. Mugonyi	Kakamega
25	EDWARD MASINDE	13439223	VI AGROFORESTRY	0718506690	edd-masinde@yahoo.com		BUNGOMA TRANS
26	EMILY OYOO	22821534	GIZ - ACCI	0722313272	emilyna@gmail.com		BUSIA
27	JOSEPHAT KUTO	5228076	LIVESTOCK	0722807 6	josephatkuto@yahoo		U/Gishu
28	ERNESTO OMORI	4241880	WATER	0723339856	ernestoomori@yahoo.com		KAKAMEGA
29	EUGEEN NYONGESA	12684429	PAFID-CARP	0721534195	eugeenyong@yahoo.com		BUSIA

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 5/8/2013 Venue MORENDAT TRAINING AND CONFERENCE CENTRE

ACTIVITY STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) SCOPING WORKSHOP

	Name	I/D or P/No	Institution	Tel. no	Email address	Signature
1.	JONATHAN KIMUGE	7394728	SCEP	0729606024	scepkenya@gmail.com	[signature]
2.	JANE N. REUBEN	1988054669	ASDSP	0722249845	reubennjei@yahoo	[signature]
3.	Raymond K. Kiptoo	83098105	ASDSP	0723521097	Kiprayk@gmail.com	[signature]
4.	WILSON KITALLAM	81079163	LIVESTOCK	0728733687	dlpobaringocentral@yahoo.com	[signature]
5.	VINCENT OGEMBO	08082894	MoA	0720979775	narooksouthdao@gmail.com	[signature]
6.	SHEM O. OKORA	3844170	ASDSP-NAROK	0726116378	shemkokora@yahoo.com	[signature]
7	WALTER K. TAMOI	00505	WRMA-NAROK	0722965460	walteetamu@yahoo.com	[signature]
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9.	LEONARD RITEI	20080893755	ASDSP LAIKIPIA	0722160772	lennyritey@yahoo.com	[signature]
10	THOMAS GICHURU	20182967	ASDSP-NYANDARUA	0721809474	thomaina05@gmail.com	[signature]

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 5/9/2013 Venue MORENDAT

ACTIVITY SEA SCOPING WORKSHOP

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12	CHARITY KAARA	10932484	NEMA	0711655971	CMwangi71@yahoo.com	
13	ANNE WANJOIKE	23887382	CFA	0721167663	ankofa@yahoo.com	
14	SAMUEL MBUTHIA	02929 82	C.S.C NYANDARUA	0720341181	-	
15	DANIEL K. OMWENGA	10908338	NEMA	0722571651	omwansa2005@yahoo.com	
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17	LOICE N. RATIEMO	3355234	INDUSTRIALIZATION & ENT. DEV	0726618538	loicanyanchamaratiemo@yahoo.com	
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20	JOHNSEREN	3542514	BOMET STAKEHOLDERS FORUM	0720-342350	bomalep@yahoo.com	

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 5/9/2013 Venue MORENDAT

ACTIVITY SEA SCOPING WORKSHOP

	Name	I/D or P/No	Institution	Tel. no	Email address	Signature
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21	Eng. JIRMA H.A	811-1019	NDMA	0727860915	Jirmaarero@yahoo.com	
22	Shadrack Ngeno	21717517	Ecolife	0738-313881	Sngeno@yahoo.com	
23	DR. JOHN K. MUSINGI	5692501	ECOLife/consultant	0725259377	info@ecolifeconsultants.com	
24	Shadrack Kipkemoi	27024956	ASDSP	0724525766	kipkemoishadrack@yahoo.com	
25	TOM NZIBE	21960682	Ecolife Consultants	0772116800	tnzabali@yahoo.com	
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date 30/8/2013 Venue WAMBUGU ATC

ACTIVITY STRATEGIC ENVIRONMENTAL ASSESSMENT SCOPING WORKSHOP

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4	JOSEPH N. NJIRU	1092553 1988071108	MIN. OF AGRIC + LIVESTOCK	0723374327	dlpoembu[illegible]@yahoo.com	[signature]
5	Am: GATUMU	8890914	ASDSP. NRM EMBU	0725442879	gatumugerdi@yahoo.com	[signature]
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

ASDSP

REGISTRATION OF PARTICIPANTS: Date .... Venue ....

ACTIVITY....................

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13	MOSES W. NDEGWA	5750573	KFS. NYERI COUNTY	0721557595	moseswzhome@ymail.com	[signature]	NYERI
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15	EPHANTUS IRUNGU CHEGE	0988370	KAHURO LIVESTOCK BREEDERS CO-OP. SOC. MURANGA	0702454083		[signature]	MURANGA C
16	PETER N. MUGO	A685079	Kenya Forest Service	0733684824	Pmugo@kenyaforestservice.org.	[signature]	Meru
17	Shadrack Kiprono	9702495b	ASDSP-HQ	0724525746	kipronoshadrack @yahoo com	[signature]	
18	OBONDO M.O	9702557a	MEWNR	0721249029	marop[illegible]	[signature]	N R B

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 30/8/2013 Venue KIAMBUGU ATC

ACTIVITY SEA SCOPING WORKSHOP

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20	JULIUS. E. KOMUNGA	1988055217	ASDSP Kirinyaga	0721650412	JuliusKomunga@yahoo.co	[signature]	KIRINYAGA
21	MARY W MACHANDI	11104986	NEMA	0726885080	Machandimwm@yahoo.com	[signature]	KIRINYAGA
22	DR. JOHN K. MUSINGI	5692501	ECOLIFE CONSULTING	0725259377	info@ecolifeconsultium.com	[signature]	
23	Shadrack Ngeno	21717577	11	0738-373881	s ngeno@yahoo.com	[signature]	
24	Maureen Ogega	25018080	11	0723 332170	bosiboriogega@gmail.com	[signature]	
25	John Wacuira	22790862	SACDEP KENYA	0725 520799	jjwacuira@yahoo.com	[signature]	KIAMBU

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 09. 09. 2013 Venue ISIOLO ATC

ACTIVITY SoEA SCOPING WORKSHOP

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3	Charles K. Nalirita	2011001946	ASDSP	0721472378	asdspsamburu@gmail.com	[signature]	Samburu
4	David Allan lesoiyeir	22783104	Desertedge	0721600424	lesoiyeirallan@gmail.com	[signature]	Samburu
5	Umuro Dido	86878756	ASDSP	0725084204	asdspmbt@yahoo.com	[signature]	Marsabit
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 09.09.2013 Venue ISIOLO ATC

ACTIVITY S.E.A SCOPING WORKSHOP

	Name	I/D or P/No	Institution	Tel. no	Email address	Signature	County
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13	PAUL WANDERE ADHOLA	22528446	ASDSP-WAJIR	0720718371	paulwandere@gmail.com	[signature]	WAJIR
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15	FRASHIAH W. MWEBIA	3642312	ASDSP-T/Nithi	0726203255	wangecikioie@gmail.com	[signature]	THARAKA/N
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

STATE DEPARTMENT OF AGRICULTURE

REGISTRATION OF PARTICIPANTS: Date 09-09-2013 Venue ISIOLO ATC

ACTIVITY S.E.A SCOPING WORKSHOP

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Workshop Pictures

ASDSP – Mombasa Workshop – Discussions on agricultural VCD in the coastal region

Machakos – ATC – Discussion on dry lands farming VCD

Nyeri Workshop - Discussion on high agricultural potential areas VCD




Kisumu Workshop: Discussion on Lake Victoria Basin VCD




Kakamega Workshop – Discussion on Western Region VCD

Naivasha Workshop: Discussion on the Rift Valley VCD


Isiolo Workshop: Discussion on ASAL VCD

Validation workshop – Naivasha 22nd October. 2014

APPENDEX 3: Terms of Reference

TERMS OF REFERENCE

FOR

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

OF

AGRICULTURAL SECTOR DEVELOPMENT SUPPORT PROGRAMME (ASDSP)

Nairobi

APRIL 2013

LIST OF ACRONYMS

ASCU	Agricultural Sector Coordination Unit
ASDS	Agricultural Sector Development Strategy
ASDSP	Agricultural Sector Development Support Programme
CAADP	Comprehensive Africa Agriculture Development Programme
CCU	County Coordination Units
CSC	County Steering Committees
EIA	Environmental Impact Assessment
ERS	Economic Recovery Strategy for Wealth and Employment creation
GDP	Gross Domestic Product
GoK	Government of Kenya
GoS	Government of Sweden
ICC	Inter-ministerial Coordination Committee
MTIP	Medium-Term Investment Plan
NEMA	National Environmental Management agency
NPS	National Programme Secretariat
SEA	Strategic Environmental Assessment
SIDA	Swedish International Development Agency
SRA	Strategy for Revitalizing Agriculture
VCD	Value Chain Development

Background

The Agricultural sector and Sida requires a Strategic Environmental Assessment (SEA) to be carried out for the implementation of the ASDS/ ASDSP with special emphasis on the value chain development component. Given the impact on environment from the agricultural sector implementation process, it is essential from the onset for stakeholders and decision makers to have an environmental baseline as well as relevant recommendations which will be used to mitigate the possible adverse impacts of implementation of the ASDSP, and to optimize the possible positive impacts. Although ASDSP contains and NRM component, EIA studies will need to be carried out more systematically and comprehensively in order to ensure that the country's environment is not further adversely affected.

Context

The Agricultural sector is the backbone of Kenyan economy since it is recognized as the key to growth of Kenya's economy. Agriculture directly contributes 26% of the GDP annually and another 25% indirectly. The sector accounts for 65% of Kenya's total exports and provides more than 70% of employment in the rural areas. Women and unemployed youth form the bulk of the rural areas residents with the former being responsible for 60-80% of the agricultural production. Sustained equitable agricultural growth is critical to uplifting the living standards of majority Kenyans as well as generating rapid economic growth. Since 2008, the sector has taken steps towards realization of the growth. This culminated in the sector growth improving from a negative 4.1 percent in 2008 to a positive real growth of 6.3 percent in 2010. This can be attributed to good weather conditions as well as deliberate attempts by the government to implement the Economic Recovery Strategy for Wealth and Employment Creation (ERS) 2003-2007, that had put emphasis on agricultural growth as key for wealth and employment creation. In response to this, the sector developed the Strategy for Revitalizing Agriculture (SRA) 2004-2014.

Building upon progress made by the Economic Recovery Strategy for Employment and Wealth Creation (ERS), Kenya launched Vision 2030 in 2008 as the country's long-term economic blueprint to guide its development. . Vision 2030's objective is to transform Kenya into a newly industrialized, middle-income country providing a high quality of life to all its citizens by 2030. To support Vision 2030, the agricultural sector developed the Agriculture Sector Development Strategy (ASDS) which was signed by his Excellency the President together with the Comprehensive Africa Agriculture Development Programme (CAADP) Compact in 2010.

The ASDS is the overall sector strategy aiming at an annual agricultural equitable growth targeted at 7%. This will go towards achievement of the 10% annual economic growth envisaged under the Kenya Vision 2030. Equity is an important dimension in the ASDS because inequalities, including gender and other forms of vulnerabilities hold productivity down, yet increasing productivity is core to achieving the anticipated sector growth target. This means that the sector must have the requisite capacity to ensure equitable rapid sustainable development.

The ASDS Medium-Term Investment Plan 2010–2015 (MTIP) operationalizes the ASDS in the short term. It identifies and lists specific investment interventions proposed for implementation to achieve Vision 2030 and CAADP goals as follows:

- Increasing productivity, commercialization and competitiveness
- Promoting private sector investment and participation in all aspects of agricultural development including research
- Promoting sustainable land and natural resources management

- Reforming and improving delivery of agricultural services and research
- Increasing market access and trade
- Ensuring effective coordination and implementation of interventions

Agricultural Sector Development Support Programme (ASDSP)

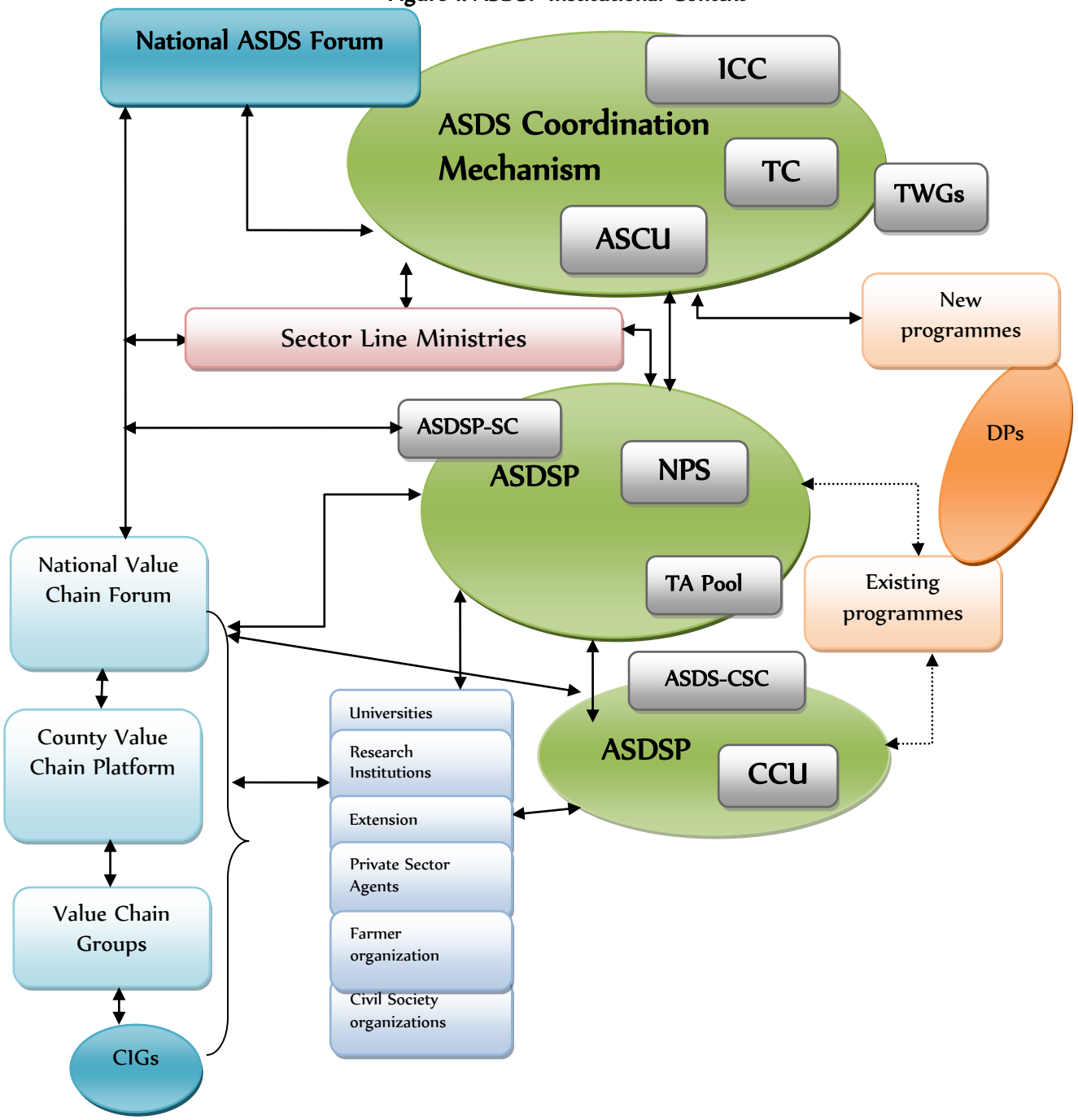
In line with ASDS, The Government of the Republic of Kenya, through the Agricultural Sector Ministries, is implementing the Agriculture Sector Development Support Programme (ASDSP) in a joint financing arrangement with the Swedish Government. The ASDSP is a programme for implementation of the ASDS which is aligned with the MTIP 2010-15. Its emphasis is on increased equitable commercialisation of the agricultural sector, including the small and medium scale, through support to profitable and sustainable value chains and/with the private sector as the driver. The programme aims to bring development partners together for complementarities and more efficient and fair use of resources. The lead technical focus of the ASDSP is on agribusiness and market development through making selected value chains more effective. It is based on the assumption that deepened and equitable commercialization of Kenya's agricultural sector, including at the smallholder level, will help to improve the availability and access to food in both rural and urban areas, and in so doing will reduce the need for food imports and food aid.

The overall goal of the ASDS and ASDSP is to support the transformation of Kenya's agricultural sector into an innovative, commercially oriented, competitive and modern industry with a gender perspective that will contribute to poverty reduction, improved food security and equity in rural and urban Kenya. Its purpose is: 'increased and equitable incomes, employment and improved food security of the target groups as a result of improved production and productivity in the rural smallholder farm and off-farm sectors'.

ASDSP organizational structure and institutional context

The ASDSP programme implementation is designed such that the Ministry of Agriculture having the fiduciary responsibility is the lead Ministry. ASDSP has a National Programme Secretariat (NPS) responsible for overseeing programme implementation though it is envisaged that the actual implementation will be assigned (outsourced) to a number of other actors. Overall programme direction will be made by a steeering committee whose mandate include approving the system and reports. The Agricultural Sector Coordinating Unit (ASCU) being vested with the task to improve coordination in the sector will provide sector wide coordination and specifically integrate and align the programme's M&E system and policies with the systems and policies of other actors. County level operations are steered by the ASDS County Steering Committees (CSC) and supported by the County Coordination Units (CCU) lead by the County Coordinator and a team of technical and administrative staff.

Figure 1: ASDSP Institutional Context



ASCU:	Agriculture Sector Coordinating Unit	**ICC:**	ASDS Inter-ministerial Coordinating Committee
ASDSP:	Agricultural Sector Development Support Programme	**NPS:**	ASDSP National Programme Secretariat
CCU:	ASDSP County Coordinating Unit	**SC:**	ASDSP Steering Committee
CIG:	Common Interest Group	**TA:**	Technical Assistance
CM:	ASDS Coordination Mechanism	**TC:**	ASDS Technical Committee
CSC:	ASDS County Steering Committee	**TWG:**	ASDS Thematic Working Group
DP:	Development Partners		

Components /Intervention areas

The programme will be implemented in three components, namely Sector-wide coordination, strengthening environmental and social resilience for VCD and Value Chain Development
The focus of the three Programme components can be summarized as follows:

Component 1: Sector-wide coordination

The Component supports a transparent and inclusive institutional framework for realizing the ASDS through support to sector coordination and harmonisation, and creation of an enabling institutional environment for the implementation of ASDSP. The major outcome areas of this Component include the following:

- Strengthening of the agricultural sector-wide approach adopted by government and development partners through support to improved sector coordination and joint programming
- Strengthening of institutional and organizational capacity of key sector actors
- Establishment of strong linkages between key sector stakeholders (programmes, researchers, educational institutions, extensionists and VC actors, especially the private sector agents)
- Establishment of a sector-wide information system appropriate for devolved government and VC development
- Development and roll-out of sector-wide policies, strategies and regulations supporting environmentally sustainable and socially inclusive VC development

Component 2: Strengthening environmental and social resilience for VCD

This Component supports interventions aimed at ensuring that the efforts to strengthening priority value chains in the context of Component 3 are environmentally sound and resilient to climate fluctuations, and that women, youth and economically and socially vulnerable groups have access to participating effectively in and benefitting from the improved value chains. Overall, this component therefore aims to

1) Raise awareness and knowledge of the importance of environmental sustainability, NRM and the causes and effects of climate change;

2) Improve access to and use of appropriate NRM and climate change technologies and services, particularly for women, youth and vulnerable groups, and;

3) Improve access by women and vulnerable VC stakeholders to basic economic and social security services. The major outcome areas of this Component include the following:

- Strengthening of information systems and flows to raise the awareness, knowledge and appreciation of sound NRM and the causes and risks of climate change among VC stakeholders in general and vulnerable groups in particular.
- Enhancing equitable access and capacity to respond to weather information and climate fluctuations.
- Strengthening equitable access to and use of NRM/CC adaptation advisory services and appropriate technologies.
- Enhancing equitable engagement in local NRM/CC planning and access to NRM/adaptation activity funding.
- Supporting establishment of an enabling regulatory/policy environment for equitable NRM and climate adaptation linked to VC development
- Strengthening equitable access to and benefits arising from crop and livestock insurance
- Facilitating and improve access by women and vulnerable groups to social insurance and other social protection services
- Enhancing equitable community action capability through support to establishment and functioning of community groups and links to local civil society agents

- Facilitate establishment of an enabling regulatory and policy environment for gender and vulnerability responsive provision of crop and livestock insurance, social protection and engagement of community institutions in local development

Component 3: Value Chain Development

This Component supports viable, equitable and long term commercialization of the agricultural sector as a pre-condition for income generation, food and nutrition security as well as sustainable livelihoods, particularly for women, youth and vulnerable groups. The major outcome areas of this Component include the following:

- Analysis and upgrading of value chains that can generate employment, ensure food security and increase incomes for diverse actors
- Increasing equitable market access by improving rural infrastructure and other trade-related interventions in collaboration with the private sector
- Improving equitable access to financial services
- Strengthening local value chain organizations to facilitate collective and equitable agreement on and pursuit of VC development activities
- Identifying and up-scaling promising, innovative and inclusive new value chains

RATIONALE FOR THIS CONSULTANCY

ASDSP specific agreement between GoK and GoS requires a Strategic Environmental Assessment to be carried out with special emphasis on the value chain development component. Given the consequences on the environment from the implementation of ASDS, it is essential from the onset for the stakeholders and decision makers to have relevant insights and recommendations which will be used to make ASDSP a programme which prevents, reduces and offsets negative environmental consequences while enhancing positive environmental benefits through its interventions.
The countrywide coverage of the programme portents substantial consequences of its interventions necessitating a Strategic Environmental Assessment (SEA) to be undertaken which pays specific attention to the environment and the socio-economic issues.
The information from the assessment will provide suggestions on potential environmental and socio-economic conditions to be addressed so as to realize sustainable development through the planned interventions.
Strategic Environmental Assessment study will give cumulative impacts of the programme implementation but individual EIA studies will need to be carried out for projects and activities to ensure that the country's environment is not further adversely affected.

DESCRIPTION OF THE ASSIGNMENT

Global Objective

The overall objective of the SEA is to identify, describe and assess at the strategic level the likely significant environmental and socio-economic challenges, considerations and effects of implementing the ASDSP with regard to the environmental and socio-economic consequences of the value chain development. The SEA will provide relevant information for the planned activities before, during and after implementation of ASDSP. The information should help to ensure that environmental and socio-economic considerations are appropriately integrated into the programme, its operational plans and monitoring processes.

Specific Objectives

vi. To set the scope of the environmental assessment of the ASDSP by identifying and profiling the environmental and socio-economic issues to be taken into consideration during planning, implementation and mintoring of the proposed programme .

vii. To evaluate the likely significant effects on the environment of implementing the ASDSP programme.
viii. To provide recomendations, at strategic level, on how potential negative effects can be mitigated and positive effects can be enhanced.
ix. To provide decision makers in Kenya, Sida and other development partners with information to be integrated in decision making and implementation process.
x. To provide guidance that will aid in policy development and institutional arrangement in the Agricultural sector.

Scope of the study

The SEA study is composed of two parts: a scoping study and the detailed SEA study itself. The scoping study will determine the critical issues that need to be addressed in the SEA study, considering the specific context in which the ASDSP is being developed and is likely to be implemented. It will also define the roadmap for the SEA study. The activities and detailed calendar for the SEA study will be determined on the basis of the conclusions of the scoping study. The SEA study itself will provide information on the environmental and socio-economic impacts of the planned interventions at the strategic level, recommend reasonable alternatives and set out feasible measures to be adopted to prevent, reduce or offset negative environmental impacts while enhancing positive ones. The report will also provide a road map for policy development and improved institutional arrangement to advance the programme.

The study will entail;

vi. An identification and assessment of potential environmental consequences as a result of the interventions from the programme
vii. An analysis of strategic environmental opportunities and constraints
viii. An analysis of performance indicators
ix. An assessment of institutional structures and capacities, and of policy and regulatory framework to address environmental challenges
x. Formulation of conclusions and recommendations for-ASDSP Implementation, and improvement
xi. Presentation of Draft SEA report to a national stakeholder forum before submission to NEMA

Part 1: The Scoping study

The scoping study will deliver a draft scoping report that will be presented to relevant stakeholders in a wrap up meeting at the end of the scoping mission for review and validation before submission to NEMA.
The scoping study will deliver the following results:

- Description of ASDSP overall development objectives and their relation to environmental and socio-economic concerns.
- Description of the relevant institutional and legislative framework of the Agriculture sector (agriculture, land and animal resources) and its interaction with other sectors like trade, Communications, industry, among others.
- Identification of key stakeholders, and their concerns with regard to environmental and social sustainability of the sector and potential implications of ASDSP implementation
- Identification of the key current environmental and socioeconomic concerns of the agricultural sector
- Identify, describe and assess environmental variables relevant to ASDSP
- Preliminary identification of the key environmental impacts that ASDSP implementation may have on the environment
- Identification of possibilities for ASDSP to contribute to environmental sustainability vis-à-vis overall development objectives, and potential areas of counteracting development objectives from environmental sustainability perspective. Identification of ways ASDSP will enhance environment sustainability as well as negative impacts on the environment, and how these would impact on the overall development objectives

- Identify entry points for integrating environmental considerations throughout implementation of the ASDSP
- Based on key concerns identified, define the scope of the environmental baseline to be prepared, and the main sources from which the baseline will be compiled
- Description of stakeholder engagement mechanism proposed for the SEA study
- Definition of the method and evaluation methodologies to be used in the SEA Study. Identify the spatial and temporal dimension of the study (coverage and time)
- Define a Road map for undertaking the study, including activities and indication of the time frames, and resources needed to carry out the SEA Study

Part II: The SEA Study

The SEA study will deliver the following results:

- An environmental and socioeconomic assessment of the ASDSP, taking into account the potential environmental impacts of its implementation, the degree to which it addresses the key environmental concerns of the sector, and its consistency with Kenya's environmental policies and objectives. Some elements to address include: land degradation, afforestation, industrial waste management, etc
- Strategic recommendations for further actions/ possible solutions to mitigate adverse consequences from the implementation of the ASDSP
- Recommendations to the GOK for enhancement of the ASDSP environmental and socioeconomic performance, and to Development partners for environmentally integrated formulation of their support strategy. The recommendations to include performance indicators, as well as possible accompanying measures to deal with identified weaknesses; notably in the areas of capacity development

METHODOLOGY

General overview

Generally, the study will entail desk reviews, consultations and stakeholder workshops. The Consultants under this assignment will work as a team with ASDSP NPS Specialists. A reference SEA team will undertake quality control oversight responsibilities. It is anticipated that the Consultant shall seek guidance from this group, and that ASDSP will facilitate regular meetings between the consultant and the team. The purpose of the interaction with the team will be to fast track some of the consultations and to establish a forum for "work-in-progress" dialogue for regular feed-back. The team will consult regularly with the main actors in the sector.

Specific tasks

The following specific tasks will be undertaken during the course of the study:

- Fact finding / data collection
- Literature review- relevant policies, strategies, plans, legislations
- Analysis of the ASDSP programme document and other material and defining how the components are likely to impact on the environment.
- Field trips
- Stakeholder consultations.
- Identification and detailed analysis of potential environmental impacts
- Preparation of recommendations to mitigate negative environmental effects (and constraints) and optimize the positive effects (and opportunities)
- Preparation of recommendations and draft SEA report
- Validation Workshops for the SEA study report

- Incorporate views from workshop
- Preparation and submission of the final SEA report

RESPONSIBILITIES

The consulting team will be provided with office space, on need basis, but are expected to come equipped with computers and necessary communication equipment. ASDSP will arrange for field trips, including transport and accommodation, as agreed upon specifically in the Inception Report. The ASDSP NPS shall also provide the Consultant with available reference materials/reports and feedback on the work plan, and draft reports/documents submitted.

DURATION OF THE ASSIGNMENT

The assignment will be implemented within one hundred and twenty (120) person days spread over a maximum of four months but not later than 30th August 2013

DELIVERABLES

The Consultant will undertake the following:

a) Submit a draft, and acceptable final Inception Report (IR) within one (1) week after commencement of the consultancy.detailing the approaches and methodologies to be followed in executing the assigment. The IR will peg gender perspectives, timelines and milestones associated with the assignment
b) Submit a draft, and an acceptable final Scoping study report five (5) weeks after the Inception report
c) Submit a draft SEA report to ASDSP 2 months after acceptance of the scoping report
d) Present the draft SEA report to a review and validation workshop organised by ASDSP
e) Submit acceptable final SEA report in an agreed format after satisfactorily incorporating comments from the workshop
f) Propose a Quality Assurance protocol for the entire exercise
g) Show commitment to develop the capacity of programme staff

REPORTING

The consultant will report on a regular basis to the ASDSP NPS who together with the ASDSP Coordinator will provide overall supervision while the quality control will be handled by a reference SEA team. The time lines for both key activities under each phase as well as specific tasks for each key activity will be detailed in the monthly progress reporting including Gantt chart that will be a useful management tool for:

- Allocating resources and managing logistics especially during consultations, fieldwork data collection and subsequent stakeholders workshops
- Managing and coordination of the exercise
- Monitoring progress and reporting on the same as feedback

The Consultant will submit ten hard copies and a soft copy of the reports to ASDSP Coordinator within the agreed timelines.

REQUIREMENTS AND QUALIFICATIONS OF CONSULTANT

- This assisgment is open to individual firms or a consortium of firms with practicing licences issued by NEMA
- The firm or consortium should have the following experts:
  - Team leader- Environmental expert
  - Agriculturalist
  - Socio-economist

Qualifications Skills and Experience of Experts

Environment Expert

- Advanced University degree (minimum of Masters Degree) in Natural Resource Management, resource economics, socio economics, rural development, agriculture, development, policy research and analysis or a related discipline.
- A valid practicing license with 7 or more years of experience in the areas associated with the consultancy specifically in the Agricultural sector in Kenya or the region
- Experience in public policy formulation, and analysis
- Wide experience in project management and administrative structures, government and semi-state organisations.
- Excellent communication and writing skills.
- Experience conducting EIA/SEAs for programmes and strategies
- Proven capacity for working across different sectors, including agriculture and institutional levels from policy, decision making to programme formulation and implementation at sub-regional, national to local community levels
- Experience in the implementation of development strategies aimed to improve service delivery and poverty alleviation in developing countries.
- Practical experience in community based development.
- Language skills-able to communicate in English, but knowledge of Kiswahili will be a distinct advantage.
- Computer literacy and good report writing skills
- ability to complete tasks and meet deadlines Good workshop facilitation skill

Agriculturalist

- At least a Masters degree in agriculture, livestock, agricultural economics, rural development or a related field of study;
- At least 10 years experience working in agricultural development projects in Kenya
- Proven experience in Kenya's Agriculture Sector
- Practical experience in implementation of Agricultural projects
- Practical experience in value chain development
- Practical experience in environmental issues
- Participation in strategic environmental assessment/ environmental Impact Assessment is an added advantage.

Socio-economist

- The socio-economist expert should have a relevant academic qualification(minimum masters degree) in sociology, economics, community development or a related field of study;
- At least 5 years experience in the socio-economic aspects of the agricultural development
- Proven experience in Kenya in participatory approaches and stakeholder consultations, including organization of workshops;
- At least 5 years experience working on cross cutting issues like Environment, HIV/AIDS and Gender;
- Relevant experience with environmental stakeholder consultations.
- Good qualitative analytical skills
- Excellent communication skills in English as well as capacity to write concise reports

Cost Estimates

In section 6.7 cost estimates are provided for the EMMP which include the initial investment and recurring expenses for implementing all measures contained in the EMMP and where practicable, decisions regarding appropriate mitigation measures are justified by an economic evaluation of potential environmental impacts.

	2012-13	2013-14	2014-15	2015-16	2016-17	SIDA	GOK	Total Budget
Sector coordination								
1.1 Sector-wide coordination and joint programming improved	85,0	105,0	115,0	100,0	50,0	195,0	265,0	455,0
1.2 Sector institutions and capacities at all levels strengthened	210,0	170,0	190,0	70,0	100,0	257,0	483,0	740,0
1.3 Linkages between sector stakeholders improved	8,0	93,0	93,0	80,0	68,0	254,0	88,0	342,0
1.4 Sector-wide M&E and information management systems developed and supported	105,0	165,0	105,0	90,0	105,0	490,0	50,0	570,0
1.5 Appropriate sector-wide policies, strategies and regulations supported	25,0	35,0	40,0	25,0	25,0	36,0	114,0	150,0
Sector coordination total	**433,0**	**568,0**	**543,0**	**365,0**	**348,0**	**1 232,0**	**1 000,0**	**2 232,0**
ENVIRONMENTAL RESILIENCE AND SOCIAL INCLUSION	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**SIDA**	**GOK**	**Total Budget**
2.1: Environmental resilience strengthened for value chain actors, including vulnerable groups	120,0	150,0	150,0	100,0	100,0	620,0	0,0	620,0
2.2 Conditions that enable vulnerable groups to engage in value chain development strengthened	4,0	90,0	80,0	40,0	10,0	224,0	0,0	224,0
Environmental resilience and social inclusion total	**124,0**	**240,0**	**230,0**	**140,0**	**110,0**	**844,0**	**0,0**	**844,0**
VALUE CHAIN DEVELOPMENT	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**SIDA**	**GOK**	**Total Budget**
3.1: Inclusive value chain organizations developed	9,5	246,0	200,0	140,0	40,0	715,5	0,0	635,5
3.2: Public and private investment in VC development increased	8,0	130,0	160,5	200,0	50,0	548,5	0,0	548,5
3.3: Equitable access to market increased	0,0	99,0	70,0	40,0	40,0	249,0	0,0	249,0
3.4: Access to affordable financial and insurance services for value chain actors improved	0,0	30,0	20,0	20,0	20,0	90,0	0,0	90,0
3.5: Innovative and inclusive value chains and VC technologies up-scaled and out-scaled.	0,0	20,0	60,0	65,0	30,0	175,0	0,0	175,0
Value chain development total	**17,5**	**525,0**	**510,5**	**465,0**	**180,0**	**1 778,0**	**0,0**	**1 778,0**
ASDSP Total 5-Year Budget	**574,5**	**1 333,0**	**1 283,5**	**970,0**	**638,0**	**3 854,0**	**1 000,0**	**4 854,0**