# LIVESTOCK AND MANURE MANAGEMENT COMPONENT START-UP MEETING (23RD-24<sup>TH</sup> JANUARY 2013, ROME ITALY)

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COUNTRY: KENYA

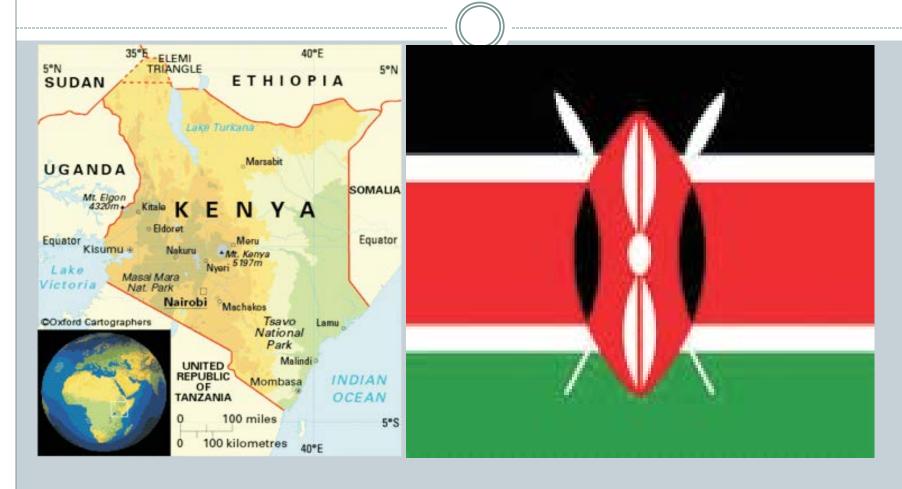
ORGANISATION: MINISTRY OF AGRICULTURE, LIVESTOCK &

**FISHERIES** 

POSITION: DEPUTY DIRECTOR, LIVESTOCK PRODUCTION

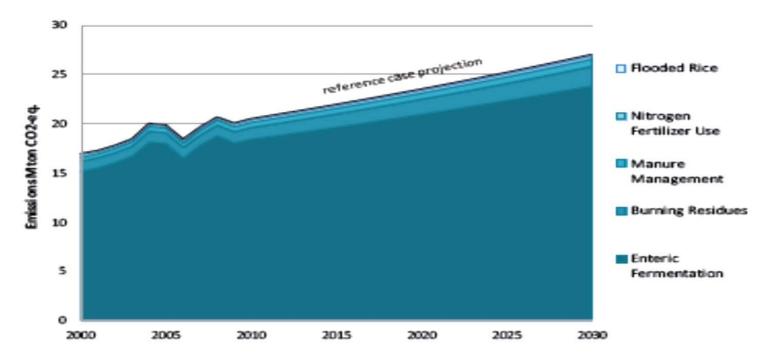
(CLIMATE CHANGE)

# INTRODUCTION



- The agriculture sector, including livestock, is highly vulnerable to climate change
- The sector is responsible for about 30 per cent of Kenya's GHG emissions as in 2010
- 90 per cent of these emissions are generated by the livestock sub-sector.

#### Total reference case emission from agriculture (MtCO2e)



Source	2000	2010	2015	2020	2025	2030
Enteric Fermentation	15.2	18.0	19.7	21.0	22.4	23.9
Burning Residues	1.0	1.1	13	1.5	1.7	2.0
Manure Management	0.44	0.52	0.59	0.63	0.67	0.72
Nitrogen Fertilizer Use	0.32	0.23	0.30	0.33	0.36	0.39
Flooded Rice	0.06	0.07	0.09	0.11	0.12	0.13
Total	17.02	19.92	21.98	23-57	25-25	27.14

# National Livestock Data ( '000,000)

0.380

34.42

2.82

0.344

32.35

1.78

344.0 0.347

31.82 30.39

0.950

Υ	ear	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
C	attle													
		15.97	16.30	17.04	17.70	17.70	16.88	17.54	18.80	17.47	17.86	14.80	16.46	
S	heep													
		14.25	14.20	14.17	17.81	17.35	14.31	16.31	17.14	17.13	17.56	10.94	15.50	
(	oats													
		20.15	22.45	23.89	26.78	27.76	20.42	27.93	28.95	27.74	28.17	17.99	29.32	
P	igs													

0.335

30.93

1.058

0.320

30.62

1.006

0.347

32.98

1.132

0.349

31.08

**Poultry** 

**Camels** 

0.353

32.63

0.889.2

0.436

33.30

0.895

0.399

28.85

1.193.6 0.931.3

0.336

31.92



# KENYA NATIONAL DOMESTIC BIOGAS PROGRAMME (KENDBIP)



An anaerobic digester and discharge system for biogas generation. Controlled methane

emissions such as this can provide rural farming communities with clean energy as well as enable them benefit from the CDM opportunities

# **REVIEW**

- -Wood fuel accounts for 68% of the total primary energy sources in Kenya, with the national reliance on biomass being over 80% with only 15% of Kenyans having access to the national electricity grid.
- -This has resulted in the heavy depletion of the country's forest reserves and serious environmental degradation..

## **IMPEMENTING AGENCIES**

• KENYA NATIONAL FEDERATION OF AGRICULTURAL PRODUCERS

PRIVATE SECTOR AND PARTNERS

MINISTRY OF ENERGY

# **INTRODUCTION**

- Kenya national domestic biogas programme is a component of ABPP(Africa Biogas Partnership Programme) which is a joint venture between the Netherlands Directorate-general of Development Cooperation (DGIS)
- The Netherlands Development Organisation(SNV) and
- the Humanist Institute for Development Cooperation(HIVOS).
- INCEPTION DATE: 2010

## MAIN GOAL

- □ The ABPP is part of a broader objective of DGIS, which is targeting the provision of sustainable energy to 10m people in six African countries, including Kenya by the year 2015.
- □ The main goal of the program me is to contribute to the achievement of MGDs through the development of a commercially viable, market-oriented biogas sector and dissemination of domestic biogas plants in the rural areas of Kenya

#### **ACTIVITIES**

- -support in construction of Biogas Plants
- Training of masons
- Create awareness of the programme
- -Monitoring and Evaluation
- -Quality management

## **ACHIEVEMENTS**

• 2010	837 Installed Biogas Plants
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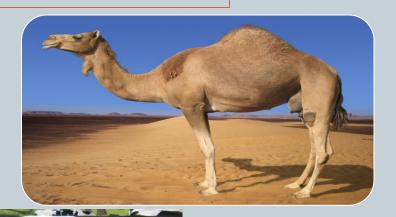
- 2011 2,399 Installed Biogas Plants
- 2012 2,252 Installed Biogas Plants
- 2013 4,200 Installed Biogas Plants (Estimate)

571 Masons trained, 39 Women

 40 supervisors trained and certified across the country

# CLIMATE AND EFFICIENCY GAINS IN DAIRY SYSTEMS: PILOT PROJECT





# Current position of Dairy subsector

- Kenya has an estimated herd of 3.5 million improved dairy animals
- National milk output has risen progressively from 2.8 billion litres in 2002 to 5.2 billion in 2011.
- Contributes approximately 4% of Kenya's GDP.
- Source of income and employment to over 1.8 million smallholder dairy farmers.
- Additionally creates upto 500,000 direct jobs along the value chain and a further 750,000 in related support services.
- Cattle account for 88% of the milk produced while camel and goat account for the rest
- The country also has the highest per capita consumption of milk in the African continent (120 lts/person/annum)

#### **PURPOSE OF PROJECT**

- To increase dairy productivity which leads to reduction in GHGE intensity
- Generation of carbon credit that will be linked to carbon trade mechanism.

#### PROJECT CONCEPT

- High-yielding animals producing more milk per lactation generally exhibit lower emission intensities per unit of milk
- Reasons:
- Emissions are spread over more units of milk.
- Productivity gains are often achieved through the improved practices (Feeds, Genetics, Herd health)
- Productivity gains reduces standing biomass per unit of milk produced.

## **ACHIEVEMENTS**

- Stakeholders identified and sensitized
- Project site screening & identification done
  - -Nandi(Nandi North)
  - -UasinGishu (Wareng)
  - Elgeyo Marakwet (Keiyo South)
- Technical working group constituted
- Baseline study undertaken
- Methodology development on going

# **EXPECTED OUTPUT/OUTCOMES**

- Stakeholders identified and sensitized
- Baseline report
- Methodology development
- Carbon accounting system developed & in use
- Technology transfer

## **COLLABORATING AGENCIES**

- MOAL&F
- FAO
- ILRI
- CONSULTING AGENCY(UNIQUE)

# LOW CARBON DEVELOPMENT GROWTH-PROJECT

## **Implementing Ministry**

- Ministry of Environment, Water and Natural Resource
- UNDP

#### **Components**

- GHG inventory System development
- Development of National Appropriate Mitigation Actions

The agricultural sector is the largest contributor of GHGs emissions in the country mainly from livestock methane emissions and inefficient cultivation methods. The National Climate Change plan indicates that most of emissions from agricultural sectors emanate from livestock production systems. The projection of GHG Emissions for the subsector by 2030 is expected to grow from 18.0 mtco<sub>2</sub> (2010) to 27.0 mtco<sub>2</sub>.

## In Livestock Sector

Identified areas for consideration under low carbon development growth project with the potential to reduce GHG emissions through:

- efficient dairy production systems
- manure management,
- promotion of bee keeping for environmental conservation,
- livestock pasture rehabilitation and management in rangelands.

# SUPPORT ON NATIONAL POLICY OR INVESTMENT STRATEGY

 The National Climate Change Policy and bill is in the process of development and may be completed in the next 6 Months.

 However there may be need to assist in the development of agricultural/livestock sector policy on Climate change.

## **CAPACITY BUILDING**

Kenya faces significant human resource and institutional capacity challenges in

- climate science
- adaptation
- mitigation and in carbon markets

Targeted capacity building is on;

- -data collection and
- -adaptation and mitigation capacity
- -technology development and REDD+
- building the capacity of local communities

# CT'D

#### In Livestock Capacity required in;

- establishment of data bank and inventory
- monitoring and evaluation of climate change interventions,
- Development of information for tier 2 and
- Methodology and conduction of Measurement, reporting and Verification.

# EXPECTED OUTPUTS AND LEVELS OF IMPACT

- a) Data and information management system (IMS) in place
- b) Skilled manpower in data collection
- c) Accurate reporting and enhanced understanding of methodology for MRV
- d) Reliable source of Knowledge for dissemination to agricultural staff both at National and County governments

# 6) ACTUAL RESULTS

- productivity gains, food security, income and reduction in GHGE
- More reliability on Green energy, resulting to reduced forest destruction as a source of fuel
- Enhanced resilient to climate change

Geographical consideration should focus more at National government headquarter and a few pilot county governments, and would support over 2m smallholder farmers

# SHARED OBJECTIVES AMONG STAKEHOLDERS EFFECTIVE INCLUSION AND PARTICIPATION

☐ To mainstream climate change response into relevant sectors and into planning, decision-making and implementation, at both the national and county levels
☐To reduce vulnerability to the impacts of climate change by building adaptive capacity, building climate resilience and strengthening capacity for disaster risk reduction.
☐To Catalyze Kenya's transition to cleaner, lower emission and less carbon intensive development
□To incentivize private sector involvement in building climate change resilience and engaging in low carbon development opportunities by removing barriers and encouraging economically productive risk taking. □To facilitate widespread public awareness - , participation, ownership and oversight of Kenya's climate change response efforts and action plans.
☐To establish an effective institutional framework to achieve climate change mainstreaming at the national and county levels

## **SHARED PRINCIPLES**

# Common but differentiated responsibilities and respective capabilities:

Kenya has common but differentiated obligations in the global effort to address climate change.

#### > Right to a Clean and Healthy Environment:

Under the 2010 Constitution every person in Kenya has a right to a clean and healthy environment and a duty to safeguard and enhance the environment.

#### Right to Development:

Kenya seeks to achieve people-centered development that builds human capabilities, improves people's well-being and enhances quality of life.

#### > Partnership:

Building partnership, collaboration and synergies among various stakeholders

# ENABLING ENVIRONMENT

# a) National Climate Change Response Strategy (2010)

- **Chapter 4:** Main objective is "To accelerate the development of green energy including wind, solar and renewable biomass (Biogas)"
- Renewable energy also provides CDM opportunities and creates green job opportunities.

#### In Agriculture sector,

 Mitigation measures mentioned include proper management of agricultural waste that includes using waste to produce biogas, which consequently also reduces the direct release of methane emissions into the atmosphere. Reducing methane emissions from uncontrolled anaerobic decomposition are potential CDM opportunities that Kenya is yet to tap into. Thus manure management in this context is prioritized.

# b) NATIONAL CLIMATE CHANGE ACTION PLAN (2013)



National Climate Change Action Plan 2013 -2017



# PREFACE TO NCCAP

"The development of this National Climate Change Action Plan marks another landmark stride by the Government towards addressing climate change vulnerability. The Action Plan takes adaptation and mitigation efforts to the next stage of implementation and equips the country to take decisive action in responding to the challenges we face. It encourages people-centered development, ensuring that climate change actions support Kenya's achievement of development goals. It also supports efforts towards the continued attainment of Vision 2030. This Action Plan guides the transition of the country towards a low carbon climate resilient development pathway"

# NATIONAL CLIMATE CHANGE ACTION PLAN CONTENT

- Long-term National Low Carbon Climate Resilient Development Pathway
- -Enabling Policy and Regulatory Framework
- -Adaptation Analysis and Prioritization
- -Mitigation and nationally appropriate mitigation action
- -National Performance and Benefit Measurement
- -Knowledge Management and Capacity Development
- -Finance

"Important actions related to the livestock sector in the action plan include manure management through biogas promotion, and rangeland pasture rehabilitation, management and conservation. In addition, actions to help farmers and pastoralists adapt to climate change, discussed in Chapter 5 of the Action Plan, should be undertaken in a manner that is as low-carbon as Possible, complemented by awareness raising and education"

# c)DRAFT NATIONAL CLIMATE CHANGE FRAMEWORK POLICY

#### LOW CARBON CLIMATE RESILIENT DEVELOPMENT

- -Enhancing Climate Resilience and Adaptive capacity
- -Achievement of Low Carbon Growth

MAINSTREAMING CLIMATE CHANGE INTO PLANNING

#### RESEARCH, EDUCATION AND KNOWLEDGE

- -Research and Technology
- -Capacity Building, Education and Public Awareness
- -Knowledge and Information Management

#### **CLIMATE CHANGE GOVERNANCE**

<u>Legislative and Institutional Framework(capture relevant aspects/)</u>

**Climate Finance (Funding institutions and Bodies)** 

Climate Change Monitoring, Reporting and Benefit Measurement

**Monitoring and Evaluation of Policy Implementation** 

Collaboration of Stakeholders in Climate Change Response

# **CLIMATE CHANGE OPPORTUNITIES**

climate change represents an opportunity to catalyze realignment of Kenya's development model to one that is climate resilient, based on lower GHG emissions and takes full advantage of the green economy

#### **ACHIEVEMENT OF LOW CARBON GROWTH**

The agricultural sector is the largest contributor of GHGs emissions in the country mainly from livestock methane emissions and inefficient cultivation methods. The National Climate Change plan indicates that most of emissions from agricultural sectors emanates from livestock production systems. The projection of GHG Emissions for the subsector by 2030 is expected to grow from 18.0  $\text{mtco}_2$  (2010) to 27.0  $\text{mtco}_2$ .

The sector has the potential to reduce GHG emissions by sequestering carbon into the soil, trees on farms, efficient dairy production systems, manure management, promotion of bee keeping for environmental conservation, pasture rehabilitation and management in rangelands

## PROPOSED POLICY STATEMENTS

# The Government will:

- Implement mainstreaming of low carbon growth options into the planning processes and functions of the national and county governments.
- Put in place mechanisms to establish a GHG inventory to achieve efficient and effective collection, recording and sharing of GHG emissions data.
- In view of strategic interests, consider participating in voluntary emissions reductions programmes when they support the country's sustainable development goals and achieve mitigation co-benefits.
- Promote the creation of green jobs by establishing an enabling policy framework for investment and creating business friendly regulatory environments in key areas such as renewable energy, clean manufacturing, agro-forestry and sustainable agriculture.

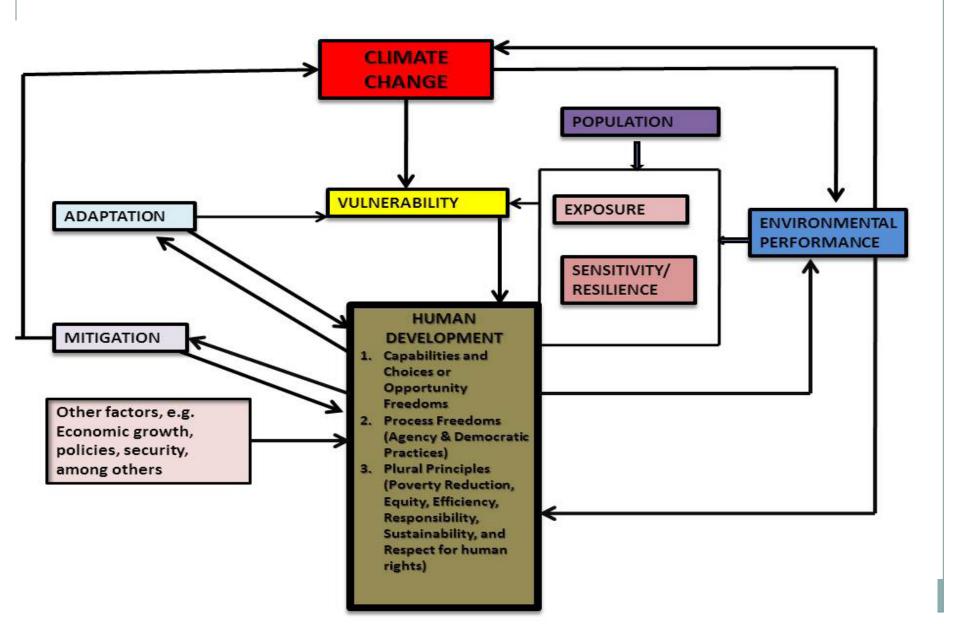


Climate Change and Human Development:

Harnessing Emerging Opportunities



# **CONCEPTUAL FRAMEWORK(KHDR)**



#### RECOMMENDATIONS FROM KHDR

- Encourage the use of modern agricultural technologies in the management of crop and livestock systems with a view to increasing food security and at the same time reducing GHG emissions.
- 2. The limiting factors here are feasibility and affordability. While it is desirable, for example, to reduce methane emissions from livestock, the nature of the grazing systems used in the ASALs may preclude the use of technology to improve pasture and other livestock feeds in an extensive grazing system.
- 3. Encouraging climate-friendly livestock production systems through rotational grazing and avoidance of overgrazing which leads to degradation of grasslands.
- 4. Promoting organic farming by substituting or minimizing the use of artificial fertilizers with compost and green manures.
- 5. Better management of animal manure and other agricultural waste to reduce methane emissions. Farmers should be encouraged and helped to use biogas digesters to turn waste to biogas.







# ASANTE SANA



