

MINISTRY OF AGRICULTURE AND LIVESTOCK DEVELOPMENT

STATE DEPARTMENT FOR CROP DEVELOPMENT

Overview of Kenyan Agriculture

Jane N. Kioko

Email: nzisajane@yahoo.com

Head Food Crop Statistics, Agriculture Statistics Unit

STATE DEPARTMENT FOR CROP DEVELOPMENT

Outline

- 1. Outline
- 2. Country's Background
- 3. Ministry's Mandate/Goals
- 4. Guiding Policies
- 5. Basic information on the Kenyan farmer and farming
- 6. Planting calendars of various regions and for the main crops
- 7. Programmes on use of Earth Observation for Agriculture and Food Security Monitoring
- 8. Challenges to Kenyan agriculture
- 9. Opportunities and other government interventions
- 10. Expectations
- 11. Conclusion

Country's Background

- bordered to the North by South Sudan and Ethiopia, to the East by Somalia, to the South by Tanzania, and to the West by Uganda.
- ☐ Capital City Nairobi
- Population-50.2 Million according to 2022 population Projections.
- Climate-varies by location, from mostly cool in the highlands to warm/hot in the lowlands.



Ministry's Mandate/Goals

- Provision of enabling environment for agricultural development
- Increase agricultural productivity and outputs
- Increase farmers' incomes, market access and agroprocessing



Food and nutrition security



Sustainable land management and conservation of the environment



Enhance farmers resilience and risk management

Ministry of Agriculture and Livestock Development Guiding Policies

The Ministry's Strategic Plan

Agriculture Sector Development Policy

The National Food and Nutrition Policy (FNSP)

Address key issues associated with chronic, poverty-based food insecurity and malnutrition

...Ministry of Agriculture Guiding Policies

The Agricultural Sector Transformation and Growth Strategy (ASTGS) Anchor 1: Increase Anchor 2: Increase Anchor 3: Increase small-scale farmer, agricultural output household food and pastoralist and resilience fisherfolk incomes value add

Nine flagships or nine big ideas constitute an entire portfolio of interventions that address the 3 anchors. Farmers in each and every county have the potential to benefit from at least five flagships. Flagship no 8 addresses use of data, ICT and digital systems and innovations

THE KENYAN FARMER

 6.4 million agricultural households(2019 KPHC). 76.0 %-Subsistence farming 23.3% Commercial farming

Average holding size

1.5 acres especially for the key food crops

Age of head of the farming households

- 32.2% -the elderly (age 55 years and above)
- 23.2 % (35-44 yrs)
- 20.1% (25 34 yrs)-youth
- 19.6% (45-55 yrs

Government policies are geared towards supporting these farmers (small scale), either to expand and become commercially oriented, or address recurrent challenges

Kenyan Farming

- 60.9 % of the 6.4 million households, practice mixed farming (2019).
- The proportion growing crops only stood at 26.7% and those rearing livestock was 12.0%
- Kenya's main food crops are classified into:
 - Cereals (maize, wheat, sorghum, rice, millets);
 - Pulses (beans, pigeon peas, cow peas, green grams);
 - Roots and tubers (Irish potatoes, sweet potatoes, cassava, arrow roots and yams
- Maize is the main staple food followed by beans, potato and rice.
- Most of the crops are grown as intercrop (one main crop eg maize planted with a second crop eg beans).
- Kenya has two main growing seasons: Long rains season from March to May; and Short rains from October to November.

KENYA PLANTING CALENDAR-WESTERN REGION

CROP CALENDAR: WESTERN REGION= COUNTIES: Nyamira, Kisii, Migori, Homa Bay, Kisumu, Siaya, Kakamega, Bungoma, Busia, Vihiga

				(CROP CAL	ENDER : N	/IAIZE							
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
4.14/2242		END OF HARVEST												
1.Western		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

		C	ROP CA	LENDER	: BEANS,G	REENGR	AMS AND	COWPE	AS					
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
1 14/		END OF HARVEST												
1.Western		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

PLANTING CALENDAR-NORTH RIFT REGION

		TRANSNZOIA	,UASIN GISHU	ELGEYO MARA	KWET,NANDI,V	VEST POKOT	,TURKANA	COUNTIES -CI	ROP CALENDAR	: MAIZE,FING	ER MILLET			
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
2. Noth Rift		END OF HARVEST												
Z. NOUI KIIL		OUT OF SEASON												
		PLANTING			The R	egion does not	have Short R	ain season						
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

Irish potatoes are planted same time with other crops and harvesting is from July. Wheat is planted from June

	_				C	ROP CALEND	ER : BEANS							
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
2. Noth Rift		END OF HARVEST												
2. NOUI KIIL		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

PLANTING CALENDAR -SOUTH RIFT REGION

CROP CALENDAR: SOUTH RIFT= Counties: Narok, Bomet, Kericho, Nakuru

						ROP CALENI	DER : MAIZE							
EGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
3. South Rift		END OF HARVEST												
3. 30dtii Kiit		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

Wheat and irish potatoes are planted with other crops and harvested from late July to August.

·						CROP CALEN	DER : BEANS							
EGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
	outh Rift EN	RIPENING- HARVEST												
2 Courth Bift		END OF HARVEST												
5. 30utii Kiit		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
	1	RIPENING- HARVEST												
	1	END OF HARVEST												

PLANTING CALENDAR -CENTRAL REGION

CROP CALENDER: CENTRAL= COUNTIES: Nyandarua, Nyeri, Kiambu, Muranga, Kirinyaga

						ROP CALEND	ER : MAIZE							
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
4. Central		END OF HARVEST												
4. Centrai		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE			2-									
		RIPENING- HARVEST												
		END OF HARVEST												

					CR	OP CALEND	ER : BEANS							
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
	Ri	RIPENING- HARVEST												
4. Central		END OF HARVEST												
4. Centrai		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

PLANTING CALENDAR -EASTERN REGION

EGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
5. Eastern		END OF HARVEST												
o. castern		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

				CROP CA	LENDER : BEA	NS,GREENGR	AMS, COWP	EAS						
EGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	Long Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
5. Eastern		END OF HARVEST												
J. Eastern		OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

PLANTING CALENDAR- COAST REGION

CROP CALENDER: COAST= COUNTIES: Taita Taveta, Kwale, Mombasa, Kilifi, Tana River, Lamu

						CROP CALENDE	R : MAIZE							
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
	1	VEGETATIVE-REPRODUCTIVE												
6. Coast	1	RIPENING- HARVEST END OF HARVEST												
o. coust		OUT OF SEASON PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
	1	RIPENING- HARVEST												
		END OF HARVEST												

					CROP CALEND	DER : BEANS,COWI	PEAS AND GRE	ENGRAMS						
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		OUT OF SEASON												
		PLANTING												
		VEGETATIVE-REPRODUCTIVE RIPENING- HARVEST												
6. Coast		END OF HARVEST OUT OF SEASON												
		PLANTING												
	Short Rains	VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

PLANTING CALENDAR - NORTH EASTERN REGION

CROP CALENDER: NORTH EASTERN= COUNTIES: Gasrissa, Wajiri, Mandera

CROP CALENDER: MAIZE														
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
7. North Eastern	Long Rains	OUT OF SEASON												
		PLANTING												
		VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												
	Short Rains	OUT OF SEASON												
		PLANTING												
		VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

CROP CALENDER: BEANS														
REGION	SEASON	CROP STAGE	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
7. North Eastern	Long Rains	OUT OF SEASON												
		PLANTING												
		VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												
	Short Rains	OUT OF SEASON												
		PLANTING												
		VEGETATIVE-REPRODUCTIVE												
		RIPENING- HARVEST												
		END OF HARVEST												

Use of Earth Observation for Agriculture and Food Security Monitoring

Crop conditions monitoring for Food Security management-GEOGLAM and Crop Monitor

Monitoring of pests and diseases (Locust invasion of 2020)

Climate/Weather monitoring; early warning on drought(NDMA using NDVI &VCI), floods,(2020) etc

Crop type mapping and crop mask-Cop4GEOGLAM ongoing- funded by EU

Enabling crop analytics at scale, Kenya(ECAAS) just starting-NASA harvest & Tetratech(UMD) Crop Insurance Program
that uses GIS software to
develop satellite maps,
sample farms for data
collection and loss
assessment

Challenges to Kenyan agriculture

- Most of the cropping is rainfed
- Pests and diseases-some emerging eg FAW and MLND
- Declining productivity
- High cost of inputs
- Low capacity of extension workers-Few and with inadequate skills and necessary infrastructure
- Frequent Droughts
- Low investments and funds allocation to agricultural activities
- Soil fertility and land degradation: Adoption of sustainable land management practices is low, and land degradation increasing.

- Poor infrastructure in rural areas which means that farmers are forced to sell their crops at low prices, leading to reduced incomes and less investment in agriculture
- Poor access to credit
- Land and population pressures: Average farm size is falling and land distribution is becoming more concentrated, leading to significant constraints on production, particularly for smallholders
- Low use of technology in agriculture
- Climate change: Changes in temperature and in the variability of rainfall have significant effects on agricultural production, but impacts may be different for different crops
- ETC

Opportunities and other interventions

- Fertilizer subsidy programme to reduce cost of production and increase productivity
- Farmer services: Government support to Index insurance to mitigate against natural hazards for crop and livestock
- Investment is water harvesting for small scale crop productionwaterpans, irrigation schemes
- Extension programmes supporting priority value chains at the county level by government and development partners
 - Kenya Climate Smart Agriculture Project
 - National Value Chain Support Programme
 - Agriculture Sector Development Support Programme etc
- Increase investments in Agriculture through allocation of more funds to the sector.
- Promotion of use tolerant varieties and other climate smart technologies in agriculture

EXPECTATIONS

- Expecting to learn more on crop watch and how the technology can be applied in crop mapping and crop monitoring
- Exchange Country Experiences

CONCLUSION

- Kenya is open to work with partners to continue to develop capacity to improve forecasting, management of agricultural data and food security monitoring using EO tools-EO tools constantly evolving
- There is huge and growing potential in use of EO tools to improve decision making, management of food security and farmers' incomes

Thank you/Ahsante sana