

# Vegetable and Field Crop(s) Strategies in East Africa

**UPOV Symposium**  
**“Plant Breeding for the Future”**  
Geneva - 21<sup>st</sup> October, 2011

Dr. Yash Bhargava  
East African Seed Company Limited  
Nairobi (Kenya)

## Table of Contents

- Introduction
  - Challenges
    - Analyses
      - Strategies
        - Conclusion

## Introduction



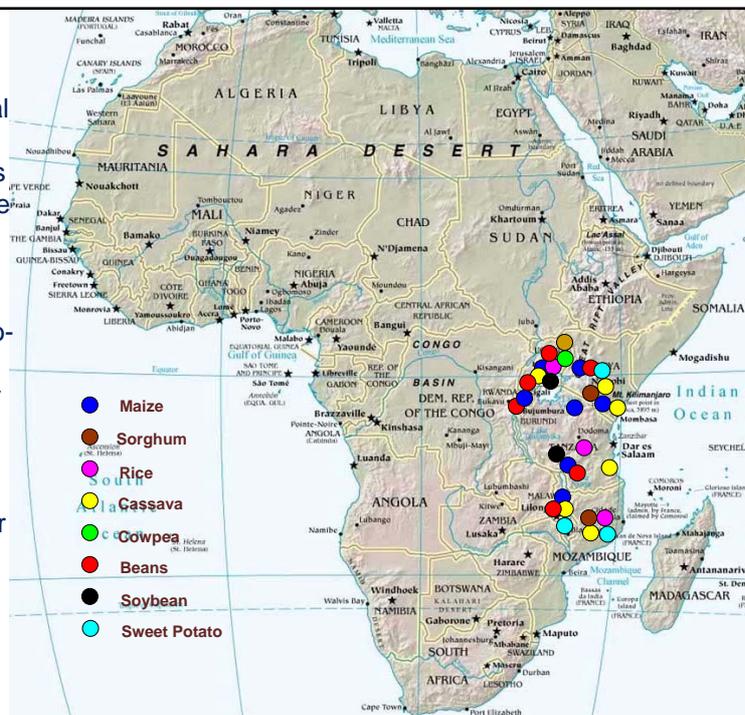
- ❖ The key **economy activity** in the East African Countries is **Farming**
- ❖ **Production** needs to be **doubled** by 2030
- ❖ **Consortium** to ensure participation by **Private sector**
- ❖ **Biotechnological** approach for multiple stress tolerance
- ❖ **Focus** should be on development of eco-friendly, low-carbon adaptation **technologies**

## East Africa

**Kenya** – Colonial land occupation, large scale farms an input intensive system

**Tanzania** – Socialism and co-operative effort, Govt. support for high input agriculture

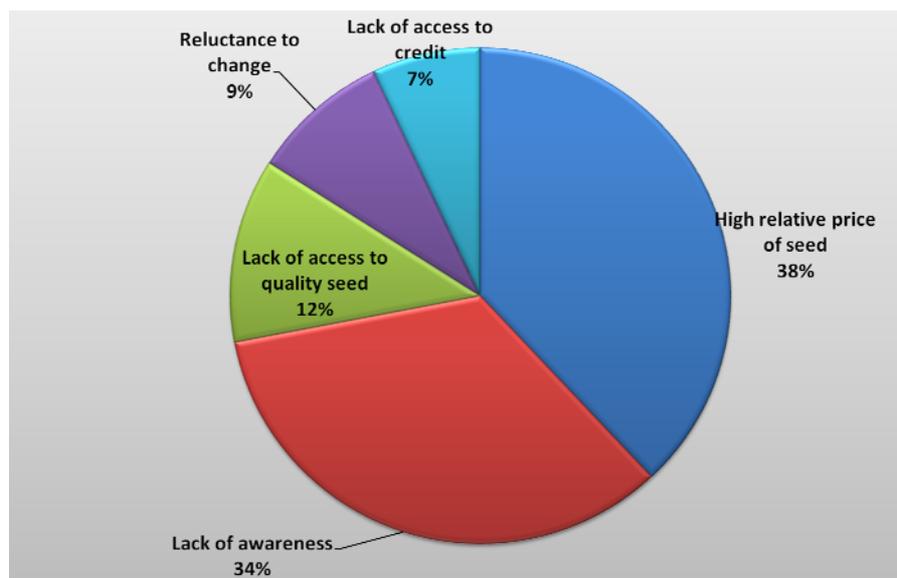
**Uganda** – A war in Northern region, low input smallholder farming predominates



## Challenges

- Lack of market assurance limits expansion of project investments
- Lack of a regulatory system(s) in the United Republic of Tanzania and Uganda
- Limited diversity to other crops such as Rice and Beans to encourage home consumption
- Looming effects of Climate Change
- Government policy and infrastructure to enhance the industry development

## Factors affecting seed demand

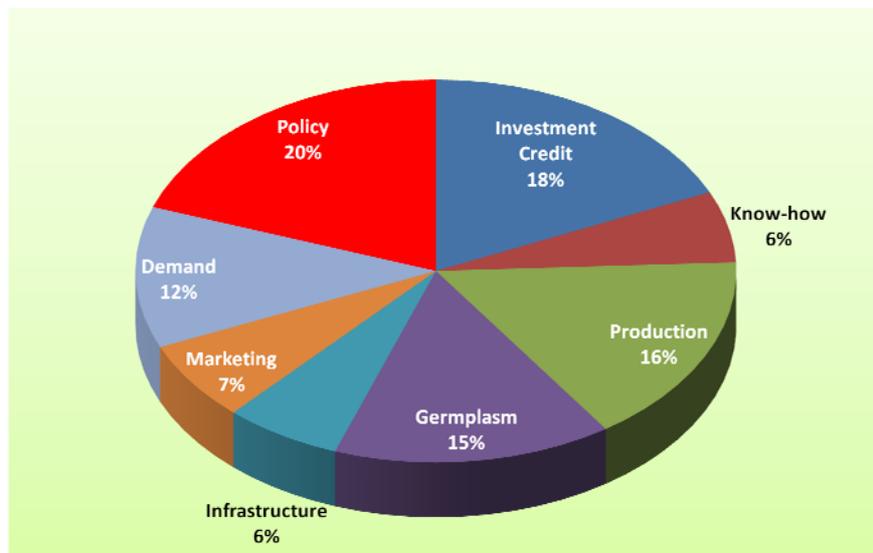


## Agriculture Transformation

Increasing value in agriculture through :

- Enhanced collaboration and co-ordination - Research, Education and Extension
- Private-public partnerships in market oriented extension
- Improvement of market access to smallholders
- Transformation of producer organizations
- Strengthening the technical capacity of the cooperative sector

## Factors affecting seed supply



## Weak Market Implications

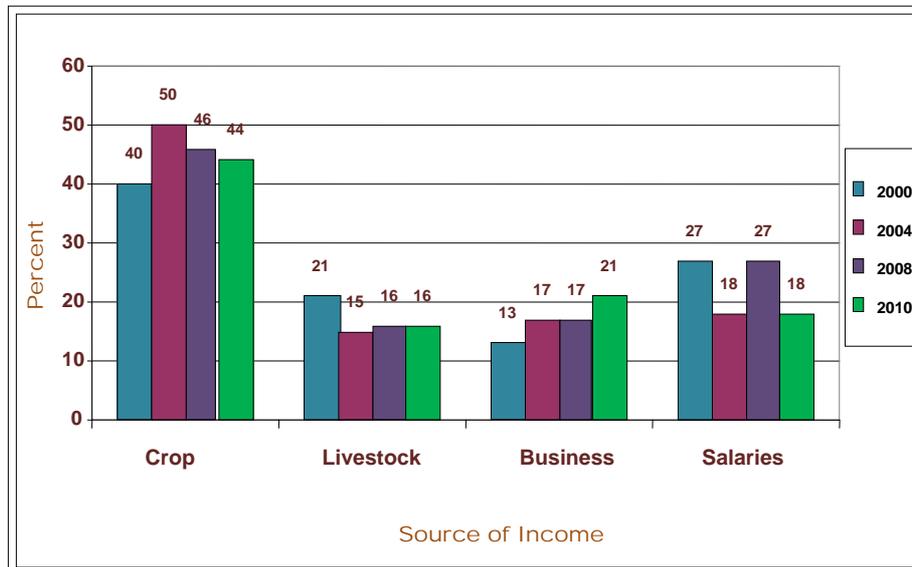
- Market information – limited capacity
- Identification of local level constraints - streamlining
- Grades and standards – need for visual inspection
- Enforcement means – reliance on trust-based networks
- Introduction of trait(s) translates into high costs and delays in acceptance

## Farm household roles



- **Household, farming or enterprise activity :**
  - ✓ Men – Cash crops, large livestock
  - ✓ Women – Child rearing and household maintenance, food and horticultural crops, small livestock, agro-processing and trading
- **Farming tasks :**
  - ✓ Men – Clear land
  - ✓ Women – Plant, weed, process and store agricultural products
- **Separate fields / plots :**
  - ✓ Men and women each responsible for own inputs and controlled outputs
- **Land rights :**
  - ✓ Men – Ownership
  - ✓ Women – Insecure land tenure, determined by husband or male relatives
- **Input rights :**
  - ✓ Men – Right to resources such as land, labor, technical information and credit
  - ✓ Women – Access to these resources determined by men

## Contribution towards Household Income



## Development of small holder farmer

High value crops introduction in traditional farming depends :

- ❖ Entrepreneurial grower organizations
- ❖ Government assistance in investment and export promotion
- ❖ Partnerships between producers and private sector traders and processors
- ❖ Insurance to share or minimize climate, production and market risks



## Improving smallholder marketing in East Africa

- Putting in place a realistic policy and legal framework
- Free cross border trade to stabilize supply and demand
- Encourage strong private sector participation in the sectors
- Instill a sense of farming as a business among small holder farmers
- Tirelessly work towards reducing transaction and transport costs in EAC

## Economic realities

- ❖ Spending power
  - ❖ Subsistence farming
  - ❖ Many below poverty threshold
  - ❖ Poor yields, acidic soils, drought
  - ❖ Poor market access
- ❖ Other economic factors
  - ❖ HIV incidents, death rates
  - ❖ Inflation rates
  - ❖ Poor infra-structure

## Agricultural Productivity

Commodity	EAC productivity	Benchmark ( FAO)
Maize (bags/acre)	9	Argentina – 31 South Africa – 13
Tea (kg/acre)	4,507	Malawi – 3,523 India – 2,774
Coffee ( processed) (kg/acre)	214	Brazil – 345 Colombia – 436
Sugarcane (tons/acre)	28 – 25	Malawi – 43 Sudan – 42
Dairy (liters/cow per year)	1,371	Argentina – 4,773 South Africa – 3,093

## Research 4 Development

- Focus on increasing efficacy in mainstream agriculture
- Science based and stringent regulatory framework
- Invest in agriculture to scale up solutions
- Raise awareness for and give clear guidance on how to manage the agricultural challenges ahead
- Government(s) to create an enabling framework for agriculture investments'

## Development drivers

Productivity	Details
Seed Genetics	✓Access and shift to higher yielding seed genetics with greater resistance to disease, virus etc. (native traits)
Fertilizers/Nutrients	✓Broad portfolio of products suitable for various production methods
Seed Enhancement Technologies	✓Better seed treatment technologies options ( <i>insect, nematode, and disease control</i> ) ✓Better seed coating options
Efficient Farm Operations	✓Use of better and fuel efficient machinery including spraying technology ✓Shift towards contract labor and toward farm management companies
Irrigation and Water	✓Easy access to water and to irrigation ✓New and improved irrigation methods and controlled irrigation systems
Greenhouse Agriculture	✓Shift from open field to protected growing practices including shift to technologically advanced greenhouses

## East Africa – Development projects'

- There are various seed projects at regional level to develop the Seed Sector
  - Drought Tolerant Maize for Africa (DTMA)
  - Water Efficient Maize for Africa (WEMA)
  - Insect Resistant Maize for Africa (IRMA)
  - Program for African Seed System (PASS) of the Alliance for a Green Revolution in Africa (AGRA)
  - Vegetable Breeding and Seed System (vBSS) of the World Vegetable Center (AVRDC)

## Maize in East Africa ...



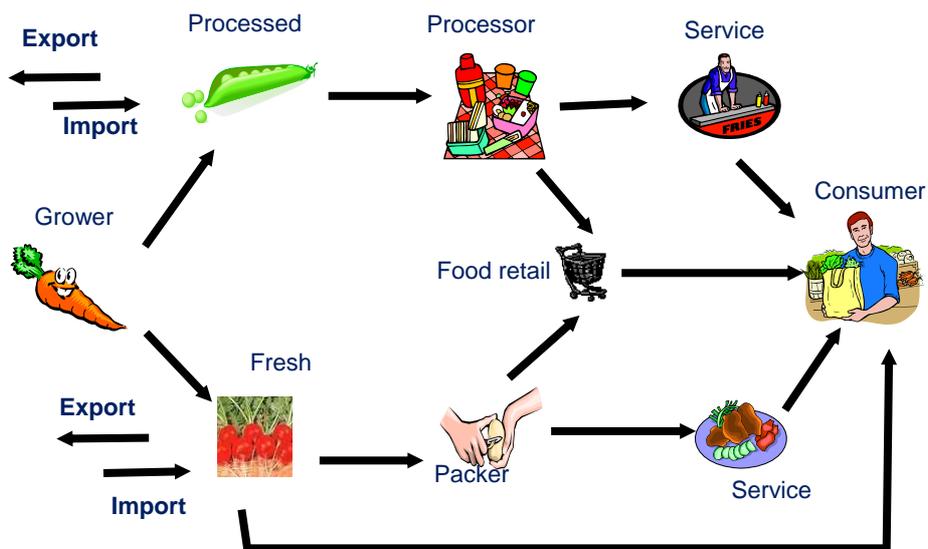
- Maize is of fundamental importance in Africa as a staple food
- Accounts for ~ 60% of the expenditure of low-income households
- Intra-regional trade and exporting of this commodity
- Reliance on monopolistic approach resulting in crop failures
- This has made East Africa a net importer of Maize...

## Expansion of Veges



- ❖ The Vegetable crop(s) in EAC countries are produced under open field conditions
- ❖ Biotic and abiotic product differentiation
- ❖ Demand driven and export oriented strategies
- ❖ Favorable institutional and regulatory environment
- ❖ Skilled management along the entire supply chain

## Vegetable chain example



## Success factors

- Africa can achieve a market-led agricultural transformation

Incentives	Infra-structure	Institutions
Macro-economy	Transportation links	Grades and Standards
Investment climate	Telecom / ICT	Market intelligence
Licensing regulations	Post harvest mgt / QC	Trade financing
Sectoral policies	Storage capacity	Industry groups
High Income tax and Multiple levies	Business mgt / Training	Contract enforcement / Dispute settlement
Food Aid distortions	Market oriented Agricultural extension	Commodity exchange / Auctions
		Regulatory framework
		Legal reforms
		Producer groups
		Warehouse receipts

## Crop strategies for East Africa

- Urbanization and transformations of markets
- Growing influence and leverage of the private sector
- Rising energy and commodity prices
- Continued domestic and international price distortion(s)
- Under-investment in technology and infrastructure

## **Harnessing agriculture in transformation**

Genetic improvement and achievement of better crop :

- Addressing the potential for agricultural growth
- Development of strategies for yield improvement
- Capacity building on modern technologies
- Promoting activities to diversify farming
- Infra-structure investment – new technologies
- Training / education and skill development

## **Understanding Value Chain economics**

- Tapping into domestic food / niche markets – exports
- Migrants remittances to productive use – rural areas
- Building public-private partnerships in agri-business
- New generation of rural development programs
- Guidance in technical assistance issues

## **Policies**

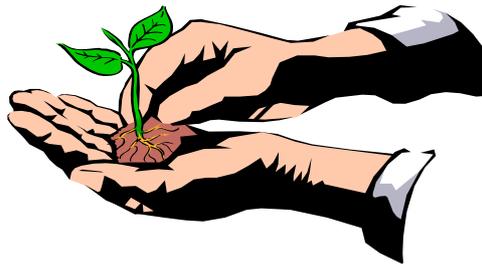
- Adequate seed supplies of adapted varieties in Crop(s)
- Increase vegetable production, marketing and consumption
- Improvement of scientific skills
- Funding for infra-structure development
- Transactional and Value pricing

## **Way forward**

- Achieving food security is a key policy challenge
- Identify challenges faced by smallholders
- Increase production and productivity of farming
- Improve access to knowledge and newer technologies
- Link small holders to markets
- Increase opportunities through sustainable innovations

## Conclusion

- EAC has set-up a network to increase credit to agriculture
- Smallholders access to markets on the input and output side
- Diversification of economic activity at household / community level
- Crop improvement as per market need in Field and Vegetable crops'
- Securing the resource base for production under assured irrigation and pest regulation
- Development of partnerships to build supply chains for high value products for export and domestic market
- Mitigation and adoption to Climatic change



**ASANTE SANA**