Vegetable and Field Crop(s)
Strategies in East Africa

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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, 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

- High relative price of seed: 38%
- Lack of awareness: 34%
- Lack of access to quality seed: 12%
- Reluctance to change: 9%
- Lack of access to credit: 7%
**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**

- Policy: 20%
- Investment Credit: 18%
- Demand: 12%
- Production: 16%
- Germplasm: 15%
- Marketing: 7%
- Infrastructure: 6%
- Know-how: 6%
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

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<thead>
<tr>
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<tbody>
<tr>
<td>Coastal Lowlands</td>
<td>2</td>
<td>4</td>
<td>2.4</td>
<td>4.2</td>
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<tr>
<td>Eastern Lowlands</td>
<td>2.3</td>
<td>3.7</td>
<td>3.6</td>
<td>4.7</td>
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<tr>
<td>Western Lowlands</td>
<td>3</td>
<td>2.6</td>
<td>2.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Western Transitional</td>
<td>5.3</td>
<td>7.5</td>
<td>8.8</td>
<td>10.7</td>
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<tr>
<td>High Potential Maize Zone</td>
<td>11.5</td>
<td>10.4</td>
<td>13.8</td>
<td>13.3</td>
</tr>
<tr>
<td>Western Highlands</td>
<td>5.6</td>
<td>11.9</td>
<td>6.6</td>
<td>8.8</td>
</tr>
<tr>
<td>Central Highlands</td>
<td>7</td>
<td>15.2</td>
<td>9.2</td>
<td>10.3</td>
</tr>
<tr>
<td>Marginal Rain Shadow</td>
<td>2.1</td>
<td>0.9</td>
<td>4.2</td>
<td>4.6</td>
</tr>
<tr>
<td>Overall Sample</td>
<td>6.6</td>
<td>8.8</td>
<td>8.2</td>
<td>9.3</td>
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</tbody>
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Crop Livestock Business Salaries

Source of 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 smallholder 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**

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

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**Development drivers**

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

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