STI as a catalyst for sustainable development in the EAC towards achievement of the vision 2050.

Badru Ntege
Group CEO NFT Consult
Vision 2050

It portrays a future for East Africa of individual prosperity in cohesive societies, competitive economies, and strong interregional interaction. It is envisaged that by 2050 per capita incomes would grow ten-fold, situating the region into upper-middle income category.
Customs Union (CU)

Customs Union became fully operational in 2010.

Common Market (CM)

The Protocol for the Establishment of the EAC Common Market was signed in 2009 and became operational in 2010.

Monetary Union (MU)

Negotiations of the EAC Monetary Union Protocol commenced in January 2010.

Political Federation (PF)

All five states have expressed support for the federation. Negotiations are underway concerning issues such as the extent of members' sovereignty and timing of implementation.
The current population of **Eastern Africa** is **437,263,683** as of Thursday, October 17, 2019, based on the latest United Nations estimates.

Eastern Africa population is equivalent to **5.63%** of the total world population.

Eastern Africa ranks number 1 in **Africa** among subregions ranked by Population.

The population density in Eastern Africa is 65 per Km² (169 people per mi²).

The total land area is 6,667,493 Km² (2,574,332 sq. miles)

29.2 % of the population is urban (126,809,813 people in 2019).

The median age in Eastern Africa is **18.1 years**.

**EAC population 190,263,683**

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Table 1

<table>
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<tbody>
<tr>
<td>Ethiopia</td>
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<td>Tanzania</td>
<td>58,005,463</td>
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<tr>
<td>Kenya</td>
<td>52,573,973</td>
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<td>Uganda</td>
<td>44,269,594</td>
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<td>Mozambique</td>
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<td>Burundi</td>
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<td>South Sudan</td>
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<td>Djibouti</td>
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<td>Mayotte</td>
<td>266,150</td>
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<td>Seychelles</td>
<td>97,739</td>
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Table 1-1

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<tr>
<td>Tanzania</td>
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what’s the market

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
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<td>2020</td>
<td>190,263,683</td>
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<tr>
<td>2025</td>
<td>215,845,402</td>
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<td>244,866,686</td>
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<td>2035</td>
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<td>315,139,984</td>
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<td>2045</td>
<td>357,511,826</td>
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<td>2050</td>
<td>405,580,731</td>
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the fourth industrial revolution is constantly disrupting industry and we have to be Agile and adaptive

Economic Transition
the fourth industrial revolution is constantly disrupting industry and we have to be Agile and adaptive

Maintain good health
good health based on knowledge and affordability and innovation

feed the population
An agricultural sector able to not only feed our people but able to export outside the region
Feed a doubling Population with the same resources and estimated increase of 70%

Optimize the use available arable land and innovate on new approaches

Eliminate food waste through advanced handling and new processing for export
Agriculture 4.0: Digital farming is the future of food
POPULATION GROWTH = HIGHER DEMAND FOR FOOD

10 billion
world population in 2050

= 70%
More food to be produced by farmers

EAC Population
405 Million

https://www.worldgovernmentsummit.org/api/publications/document?id=95df8ac4-e97c-6578-b2f8-ff0000a7ddb6
25% of all farmland is already rated as highly degraded

~80% global deforestation driven by agricultural concerns

$1 trillion investment necessary until 2050 for irrigation water management in developing countries alone

https://www.worldgovernmentsummit.org/api/publications/document?id=95df8ac4-e97c-6578-b2f8-ff0000a7db6
between 33%-50% of all food produced globally is never eaten = 25% of all fresh water consumption globally

3rd largest emitter of greenhouse gases after China and the US, if food waste were a country

https://www.worldgovernmentsummit.org/api/publications/document?id=95df8ac4-e97c-6578-b2f8-ff0000a7dcb6
Exhibit 5: All the trends lead to scarcity and hunger

- **DEMOGRAPHICS**
  - 700 million people remain extremely poor

- **CLIMATE CHANGE**
  - 800 million face chronic hunger

- **NATURAL RESOURCES**
  - 2 billion suffer micronutrient deficiencies

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*Agriculture 4.0: The Future of Farming Technology*
MAP OF TECHNOLOGIES AND MATURITY

2.1 PRODUCE DIFFERENTLY USING NEW TECHNIQUES
- Hydroponics
- Algae feedstock
- Bioplastics
- Desert agriculture
- Seawater farming

2.2 USE NEW TECHNOLOGIES TO BRING FOOD PRODUCTION TO CONSUMERS INCREASING EFFICIENCIES IN THE FOOD CHAIN
- Vertical/Urban farming
- Genetic modification
- Cultured meats
- 3D Printing

2.3 INCORPORATE CROSS-INDUSTRY TECHNOLOGIES AND APPLICATIONS
- Drone technology
- Data analytics
- Nanotechnology
- Artificial intelligence
- Internet of things
- Precision agriculture
- Food sharing and crowdfunding
- Blockchain

Today | Readiness to “Grow” to Market | Time
“Fifty years hence we shall escape the absurdity of growing a whole chicken in order to eat the breast or wing by growing these parts separately under a suitable medium.”

WINSTON CHURCHILL — 1931
Maintaining a healthy population

Health systems in EAC will need to provide a comprehensive range of services to the entire population and to ensure that standards of quality, equity and responsiveness are maintained.

To achieve this we will need to heavily innovate around patient centered solutions. Research and development will have to be localized, with new methods of delivery.

3D printing of organs and medical devices – people will no longer have to wait for organ transplants and hospitals won’t experience a shortage of devices.
Around the world, people are living longer. By 2050, there will be two billion people that are 60 years or older globally. To meet the needs of this aging population, we will continue to need larger quantities and more varieties of prescription drug treatments – an industry that is expected to skyrocket to $1.2 trillion in size by 2024. East Africa will need to be a net producer of Medicines and the ability to find alternatives
3D Printing Pharmaceutical Agenda

Referral hospitals equipped with Pharma 3D printers

Accurate dosing, lower side effects, low cost, better pediatric adherence

Manufacture as per need and preference: strength, size, flavor, color, precision. Just select recipe on computer and then click.

No need for long shelf life

Individualized multi drug polypills
every industry is being affected by the fourth industrial revolution and every business will have to understand the change and what needs to be done to ensure survival.

Some businesses will just not have a place in the new economy and the sooner this is grasped the better.

STI is key for this sector from automation to Disintermediation
disintermediation
The elimination of the middleman from banking to all services available online

Urbanisation
New approach to city planning

Manufacturing
reconstruction of the concept of Manufacturing from large operations to micro production centers closer to market

location & fulfillment
with defragmentation of the brick and mortar based business more people are needed in the logistics sector
As STI’s become pervasive in every sphere of modern life its key that we adopt R3

Retool Repurpose Retrain R3

In a world of constant change decision makers can no longer be effective just based on years of experience
Every Vision 2050 outcome will be a factor of STI

(Action x STI) (Private Sector x R3) (Public Sector x R3) = Desired Outcome

The Ntege Theory on STI and regional growth