CLiG | Centre for Innovation, Leadership & Governance
Mentoring Leaders for Excellence

Industrialization of EAC in the context of a Common Higher Education Area

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PRESENTATION CONTENT

- Quick Definitions.
- Dimensions & Indicators of Industrialization.
- Why Industrialization is essential.
- Regional Trends in Industrialization.
- Weaknesses in the industrial sector.
- Common Higher Education Institution (HEI) in EAC region.
- Examples of Drivers to Common Education in EAC Region.
- Country's approaches to Industrialization.
- Role of HEI's in Promoting Industrialization in EAC.
- Conceptualizing HE and Industrialization.
- Way Forward and Conclusion.

What is Industrialization?

- Industrialization is a set of economic and social changes that are necessary for development **through value addition in production processes and improving efficiency.**

Drivers of Industrialization:

- Good transport.
- Market openness.
- Educated labor force.
- Financial Sector Growth.
- Efficient communications.
- Growth in foreign direct investments.
- Macroeconomic and institutional stability.

What is Industrialization?

- The principal role of the industrial sector is therefore to **set a path of growth** in order to realize structural transformation of a nation.

Key Sectors in Industrialization:

1) **Manufacturing**: Key areas in this sector include:

- Textiles.
- Recycling.
- Basic Metal Industrials.
- Food Products & Beverages.
- Manufacture of Motor Vehicle.

What is Industrialization?

2) Services Sector: Key areas in this sector include:

- ❑ Transport.
- ❑ Education.
- ❑ Health Care.
- ❑ Financial Sector
- ❑ Real Estate Services.
- ❑ Government Services.
- ❑ Wholesale and Retail Trade.

3) Agricultural Sector: Key areas in this sector include:

- ❑ Horticulture.
- ❑ Forestry & Logging.
- ❑ Fishing (Aquaculture).

What is Industrialization?

Looking at the various sectors, one can easily see the different schools of our different universities reflected in these industrialization sectors . These are

Agriculture
Education
Health
Business
Finance
Construction
Engineering
Hospitality

Note: we must as Institutions of higher learning align ourselves to play a key role in these these sectors and make a difference.

Industrialization and Higher learning relationship

Cross Cutting Issues in Industrialization:

- ❑ Food security.
- ❑ Gender equity.
- ❑ Entrepreneurship.
- ❑ Policy frameworks that work.
- ❑ Technology to hasten growth.
- ❑ Embracing a growth in **mindset**.
- ❑ Investing in children and youth for continuity.
- ❑ Environmental and protecting of the ecosystem.
- ❑ Peaceful and inclusive society for common agenda.

Experiencing Industrialization

- Methods of deciding whether a nation's or region's economy is experiencing industrialization include:
  - Comparison of contributions to gross domestic product (GDP) of the manufacturing sector (secondary sector) versus agriculture sector (primary sector).
  - Comparison of the percentage of the workforce employed in industry versus agriculture.

Indicators of Industrialization

Dimension	Indicators
Capacity to produce and export. (**The level of overall productivity**)	1. Manufacturing value added (MVA) per capita. 2. Manufacturing export per capita.
Technological upgrading and deepening. (**The extent of the realization of domestic manufacturing products in external markets.**)	1. Share of medium and high technology activities in total MVA. 2. Share of manufactures export in total exports.
Impact on world production and trade. (**The indicators on the country's share in the world market.**)	1. Share of the country in world MVA. 2. Share of the country in world manufactures exports.

Dimensions of Agriculture Sector

Dimension	Indicators
Agriculture Extension	Transfer of technology until it is adopted by farmers
Rural Development	Includes Agricultural Growth, Putting up fo economic and social infrastructure (**Improved quality of life** in Rural Area).

Dimensions of Services Sector

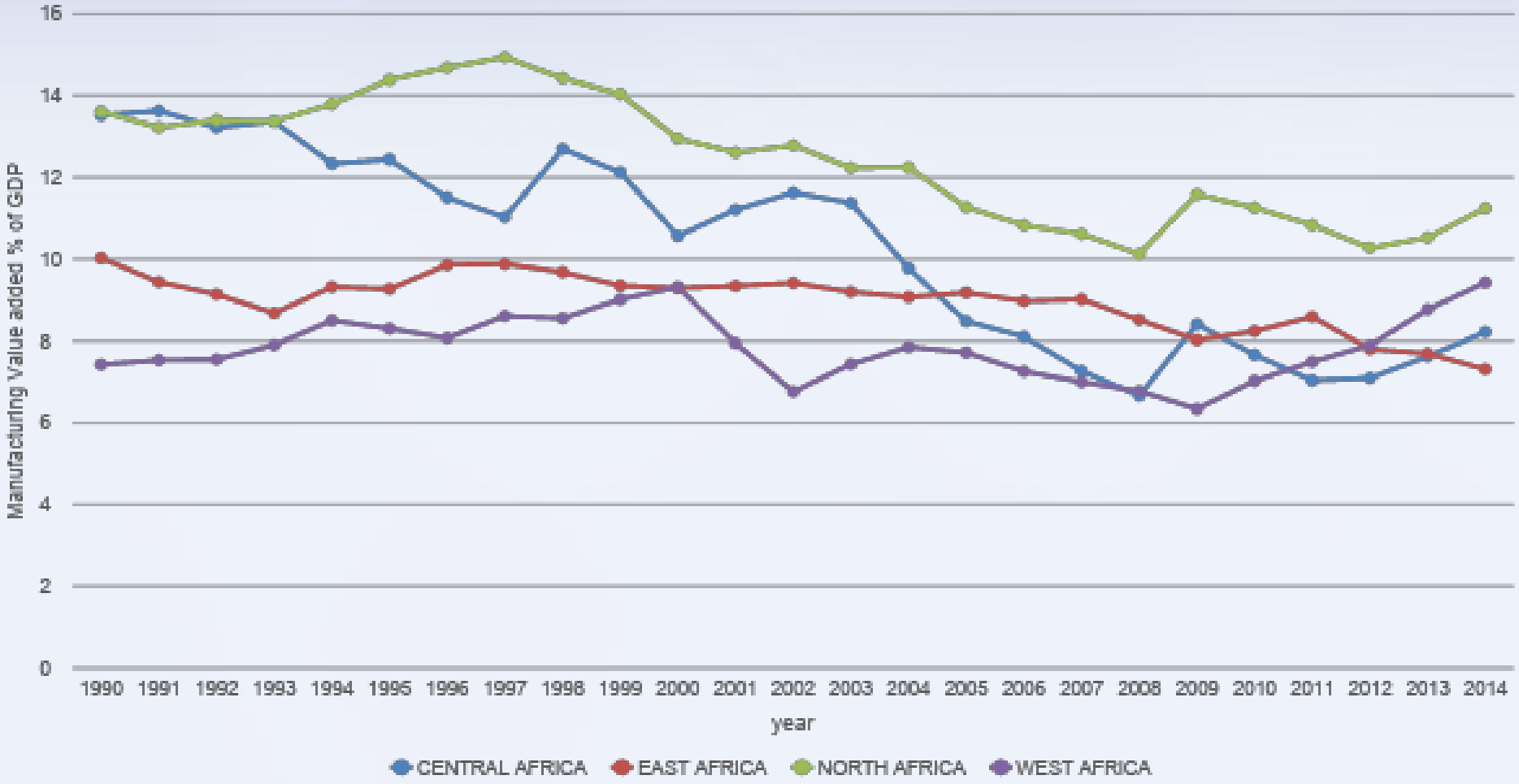
Dimension	Indicators
Digitization	Telecommunication. Information Communication Technology.
Financial	Effective access, affordable convenient quality and sustainable financial services.
Energy	Electricity Connectivity. Efficiency in Transmission of Power.

why Industrialization is essential

- It unleashes dynamic and competitive economic forces that **generate employment and income**.
- **Facilitate international trade** through manufacture exports.
- It enables efficient **utilization of resources**.
- it is a major driver of **poverty alleviation** and shared prosperity.

IS EAST AFRICA INDUSTRIALIZING?

Regional Manufacturing Value Added (MVA) Trends in Africa



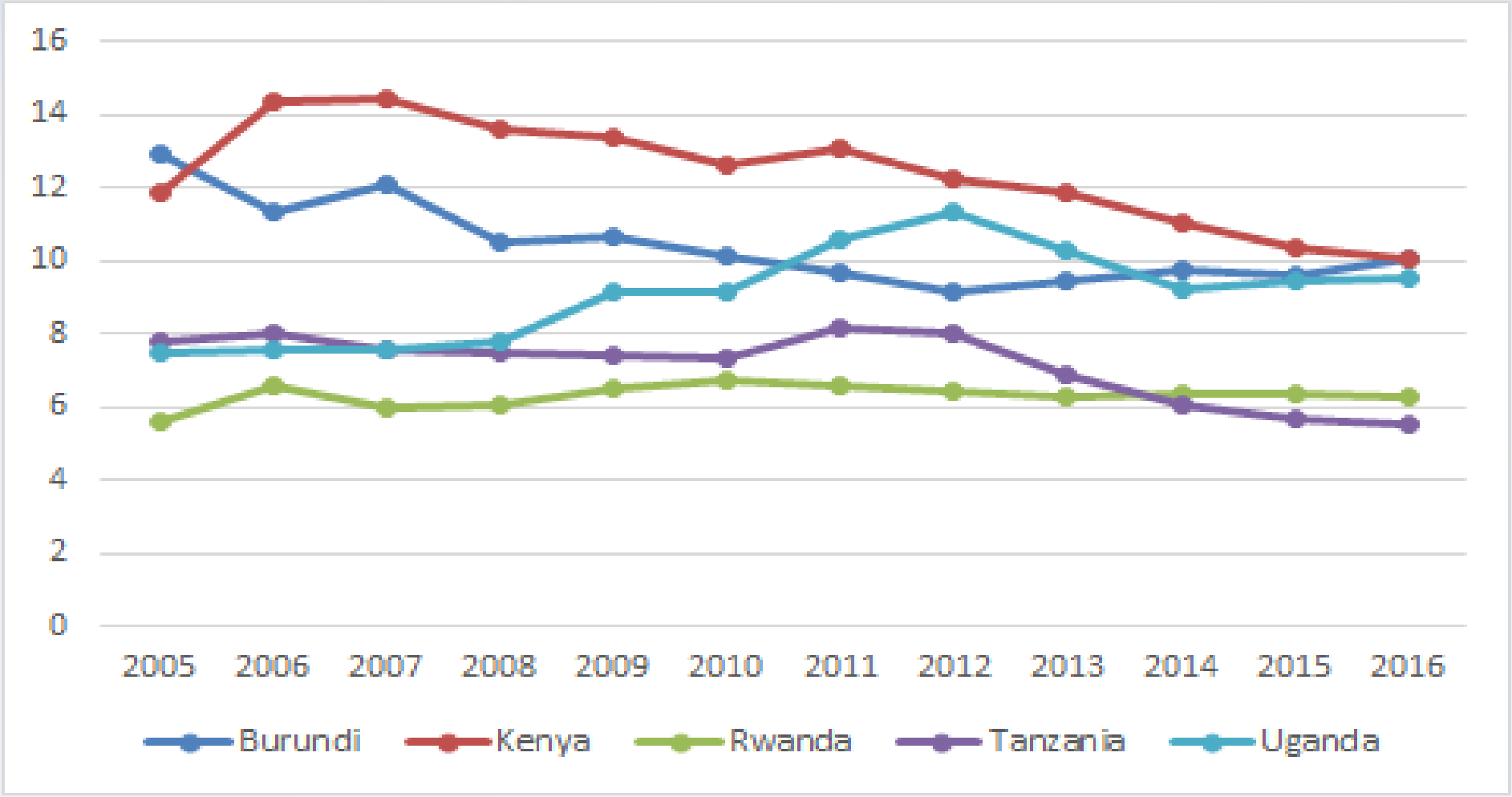
Source of Data: World Development Indicators

Regional Manufacturing Value Added (MVA) Trends in Africa

From the Trend above:

- Manufacturing value added (MVA) % of GDP in **North Africa has remained all time high** compared to all other regions. This may be due to **(oil) resource endowments**.
- In recent years Central Africa Region and West Africa are recording **a growth** in MVA % of GDP.
- East Africa is recording a **Decline**.

Country Manufacturing Value Added (MVA) Trends in East Africa



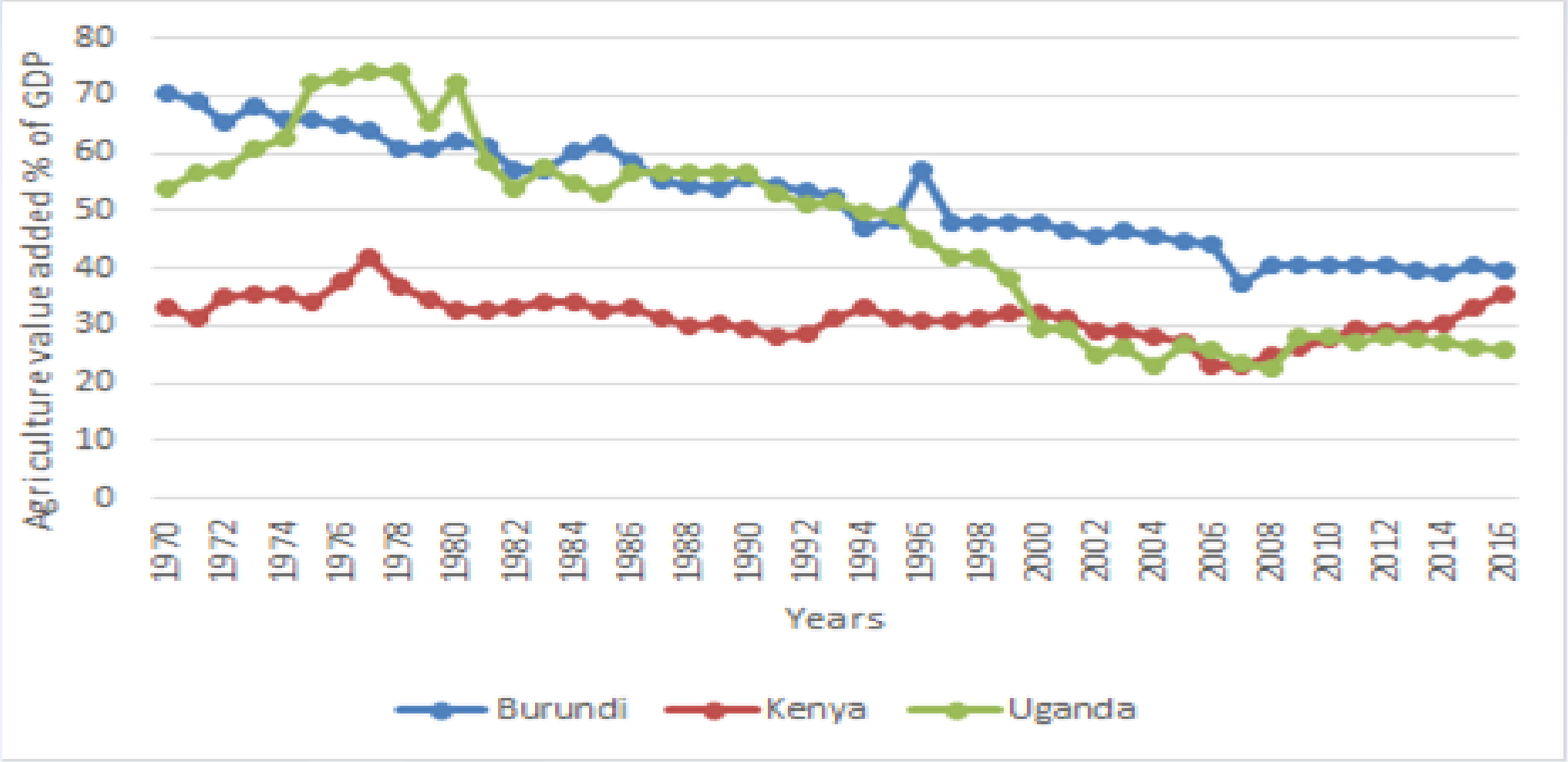
Source of Data: World Development Indicators

Country Manufacturing Value Added (MVA) Trends in East Africa

From the Trend above:

- Manufacturing value added (MVA) % of GDP in **Kenya has remained all time high** compared to all other countries.
- However there seems to be a convergence with other countries in the region.

Country Agriculture Value Added Trends in East Africa



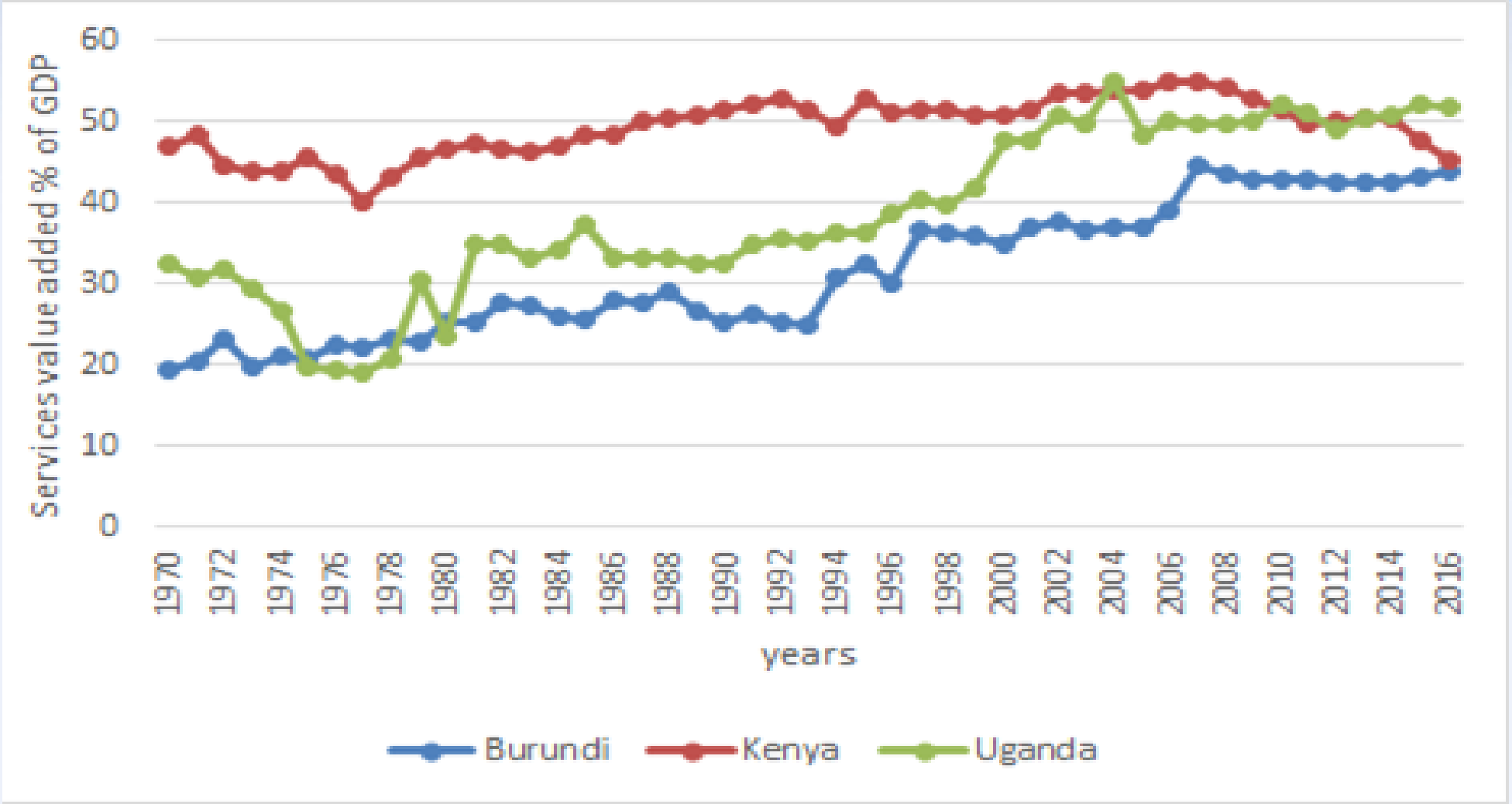
Source of Data: World Development Indicators

Country Agriculture Value Added Trends in East Africa

From the Trend above:

- In the Recent Years, Kenya is recording **a growth** in Value Added in Agriculture.
- Burundi has remained **fairly constant** but above the two other countries.

Performance of Service Sector



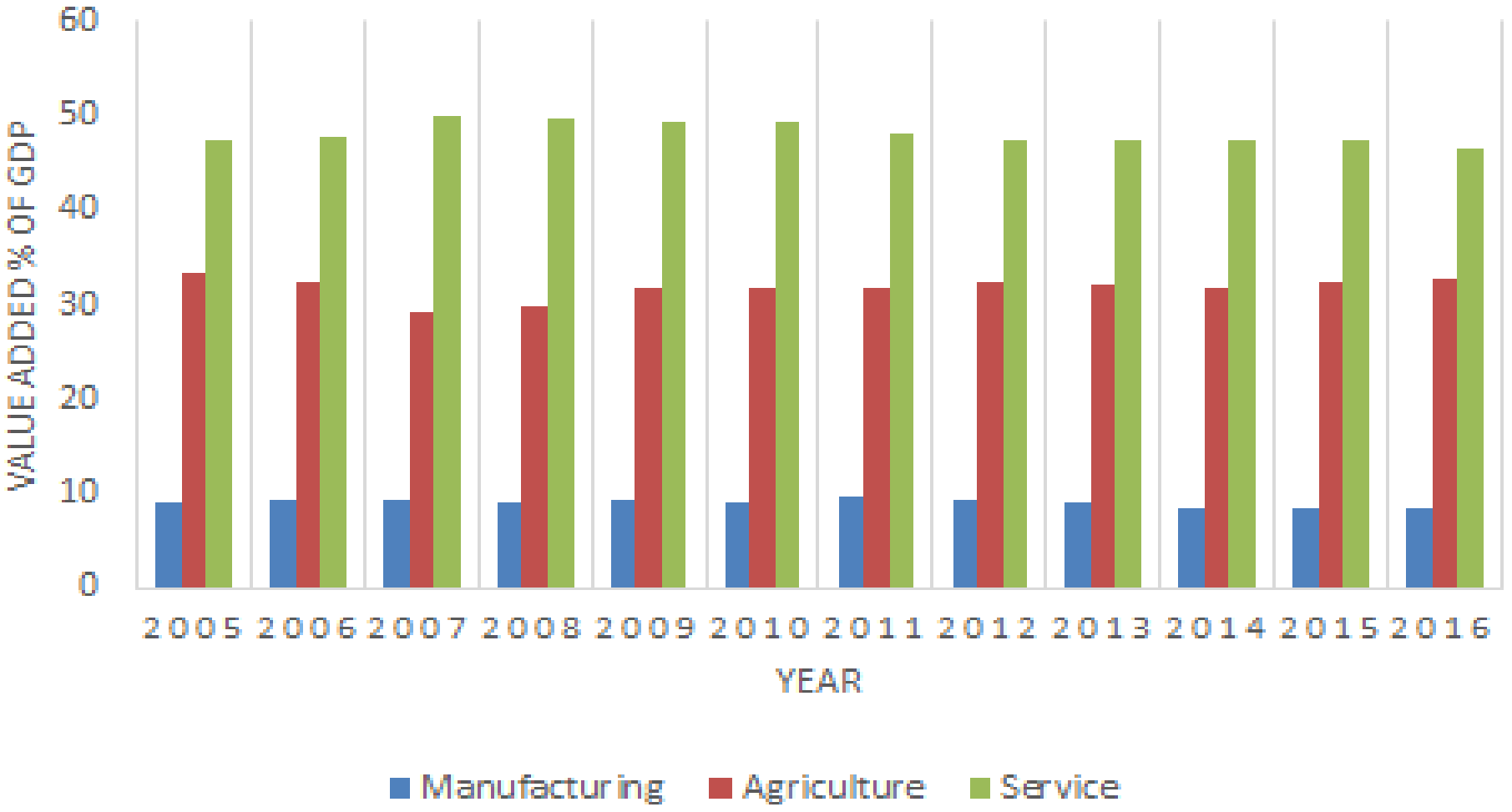
Source of Data: World Development Indicators

Performance of Service Sector

From the Trend above:

- Over the years the trend in service value added to GDP has been increasing.
- In the Recent Years, Kenya is recording **a decline in service value addition and uganda and burundi remain fairly constant**

Value Addition for Key Sectors in EAC



Source of Data: World Development Indicators

Value Addition for Key Sectors in EAC

From the Trend above:

- Overly, services sector of EAC has dominated in terms of value addition to GDP this is despite agriculture sector being considered as the primary sector in the region.
- Manufacturing Sector has remained below 10% mark. This means the region is **yet to realize it industrialization mandate.**

Weaknesses affecting the industrial sector:

How can HE help

❑ Low value addition.

Most industries are still engaged in the production of low value-added and limited range of products due to limited technological capability.

❑ Inadequate market **information**:

Despite the vast amount of information available and the possibility of accessing national and international databases, many small enterprises continue to rely heavily on private or even physical contacts for market related information.

Weaknesses affecting the industrial sector

- **Inadequate skilled industrial human resource.**

Shortage of trained and skilled manpower for industry is a major factor limiting not only industrial development but also the rate of economic growth and adoption of technology.

- Gaps in **governance frameworks**;

Manifested by the lack of viable strategies, policies and systems of coherent laws and regulations to guide the industrialization efforts.

Weaknesses affecting the industrial sector

- Institutional gaps:

Inadequacies in institutional capabilities to provide support services, which are needed to backstop the process of industrialization.

- Lack of essential resource mobilization.

Underdevelopment of domestic financial markets, lacking capacities to capitalize on and effectively use resources from diverse internal and external sources

- Low quality infrastructure.

The region also possesses a huge energy production potential, although it remains underdeveloped.

Weaknesses affecting the industrial sector

- Low funding of research and development.

Research and development has not received adequate financial support from national governments

- Lack of demand driven education system.

Improving the labour market relevance of higher education would require aligning teaching and research activities at public and private universities with market signals

Common HEI in EAC region

- **Frameworks that facilitate common higher education:**

1. Regional Quality Assurance System-higher education regulations E.g. (EAC research consortium).
2. East African Qualifications Framework for Higher Education.
3. Framework for facilitating staff and student mobility
4. Harmonized school system, Kenya(8-4-4/2-6-3-4), Burundi (6-4-3-4), Rwanda (6-3-3-4);Tanzania and Uganda (7-4-2-3).

An Example of a driver to Common Education

1). African Economic Research Consortium (AERC)

- The organization has emerged as a premier **capacity building network institution** **in Africa.**

AERC offers the following Collaborative courses:

1) Collaborative Master's Programme in Economics (CMAP).
2) Collaborative Master of Science in Agricultural and Applied Economics (CMAAE).
3) Collaborative Ph.D. Programme (CPP) in Economics.

An Example of a Driver to Common Education

African Economic Research Consortium (AERC): Training overview

An Example of a driver to Common Education

2). Regional Universities Forum for Capacity Building in Agriculture (RUFORUM):

Aims to:

- Institutionalizing enabling policies, principles and practices.
- Fostering collaboration, coordination and learning amongst member universities.
- Form a **reference point** for Agricultural Research and Higher Agricultural Education.

An Example of a driver to Common Education

2). Regional Universities Forum for Capacity Building in Agriculture (RUFORUM):

Mission:

Strengthen the capacities of universities to **foster innovations responsive to demands** of small-holder farmers through:

- ❑ The **training** of high quality researchers.
- ❑ The output of **impact-oriented research**.
- ❑ The maintenance of **collaborative working relations** among researchers, farmers, national agricultural research institutions and governments.

An Example of a driver to Common Education

3). JKUAT Engineering & Technology Centre of Excellence:

Expected Outputs:

- **Highly skilled graduates** that can promote the development and application of engineering technologies.
- Accessible **quality training, research and innovation**.
- Improve University Extension and Outreach by undertaking community based projects.
- Increase **collaborative partnerships through linkages** with other academic, research institutions, industry and public agencies.

An Example of a driver to Common Education

4). Africa Higher Education Centers of Excellence Project (ACE I):

Duration: April 2014 - December 2019
Countries: Western and Central Africa.

Components of the Projects:

- Strengthen 19 centers of excellence in selected higher education institutions to produce highly skilled graduates and applied research to help address specific regional development challenges.
- Enhancing regional capacity, evaluation, and collaboration.

An Example of a driver to Common Education

5). Eastern and Southern Africa Higher Education Centers of

Excellence (ACE II):

Countries: Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, and Zambia.

Components of the Projects:

- Strengthen the selected 24 Centers of Excellence to deliver quality post-graduate education and build collaborative research capacity in five regional priority areas: Namely,
- Industry, Agriculture, Health, Education and Applied Statistics.

Approved ACE II Centers of Excellence:

Country	Name of Africa Center of Excellence	Institution
Kenya	Center of Excellence in Sustainable Agriculture & Agribusiness Management (CESAAM)	Egerton University.
	Sustainable Use of Insects as Food and Feeds (INSEFOODS)	Jaramogi Odinga Oginga University of Science & Technology.
	Center of Excellence in Phytochemicals Textiles and Renewable Energy (PTRE)	Moi University
Rwanda	African Center of Excellence in Energy for Sustainable Development (ACEESD)	University of Rwanda – College of Science & Technology
	African Center of Excellence in Internet of Things (ACEIoT)	University of Rwanda – College of Science & Technology
	Africa Center of Excellence for Teaching and Learning Mathematics and Science (ACEITLMS)	University of Rwanda - College of Education
	African Center of Excellence for Data Sciences (ACE-DS)	University of Rwanda – College of Business & Economics

Approved ACE II Centers of Excellence:

Country	Name of Africa Center of Excellence	Institution
Tanzania	African Center of Excellence for Innovative Rodent Pest Management & Biosensor Technology Development (IRPM&BTD)	Sokoine University of Agriculture
	Southern African Center for Infectious Disease Surveillance (SACIDS)	
	Water Infrastructure & Sustainable Energy Center for the Futures (WISE)	Nelson Mandela African Institution of Science & Technology
Uganda	Makerere University Center for Crop Improvement (MaCCI)	Makerere University
	African Center for Agro-ecology & Livelihood Systems (ACALISE)	Uganda Martyrs University
	Pharm-Biotechnology &Traditional Medicine Center (PHARMTRAC)	Mbarara University of Science & Technology

Countries Approaches to Industrialization

❑ **Kenya Vision 2030:**

- To increase manufacturing contribution to the GDP by at least 10% per annum.
- Training of engineers and technicians **to raise the skill competencies**, and the number of engineers required to make Kenya a competitive industrializing nation.

❑ **Uganda Vision 2040:**

- Developing industries that **utilize the local potential**.
- Establishing economic lifeline industries.

Countries Approaches to Industrialization

❑ **Rwanda (Industrial Policy- Vision 2020):**

- Build and acquire appropriate science, technology, innovation entrepreneurial, engineering, and technical/vocational capacity to produce more value added goods and services.

❑ **Tanzania (Sustainable Industrial Development Policy (SIDP 2020):**

- Human development and creation of employment. for effective Economic transformation.

Countries Approaches to Industrialization

- Questions to address

1. What are we doing as HEI to help Govt address the visions especially related to industrialization?
2. Are our strategic plans addressing these issues or are we only focusing on our own specific institutions?
3. Are our students being trained to be ready for delivering the visions?
4. Are we working with Government sectors to deliver the visions

Role of HEI's in Promoting Industrialization in EAC

- Strengthening the **linkage between the HEI's and the Industry**. E.g. establishment of **industrial and innovation hubs. Good for economic development and also fundraising**
- Prioritizing activities and operations that are key towards sustainable Industrialization by including them in your strategic plans and implementing
- Providing **clear mandate that promote and monitor industrialization** e.g. monitor industrial attachments and internships. Use R&D to monitor this and give relevant feedback. Develop policies to guide govts

Role of HEI's in Promoting Industrialization in EAC

- Aligning science, technology and innovation infrastructure to meet the needs of industrial development in the region
- Supporting the establishment of **regional centres of excellence** in technology transfer and innovation. Glad a lot of this is happening but we also need to check their impact
- Work with the private sector to ensure you are training the right skills set needed. We have been accused a lot of not doing enough in this area

Role of HEI's in Promoting Industrialization in EAC

- Establishing a **Regional Awards** as a means to **catalyse innovation and entrepreneurial efforts** and support collaborative science technology and innovation initiatives.
- **Example: The African Innovation Foundation (AIF) Award: The Innovation Prize for Africa (IPA).**

  Purpose:

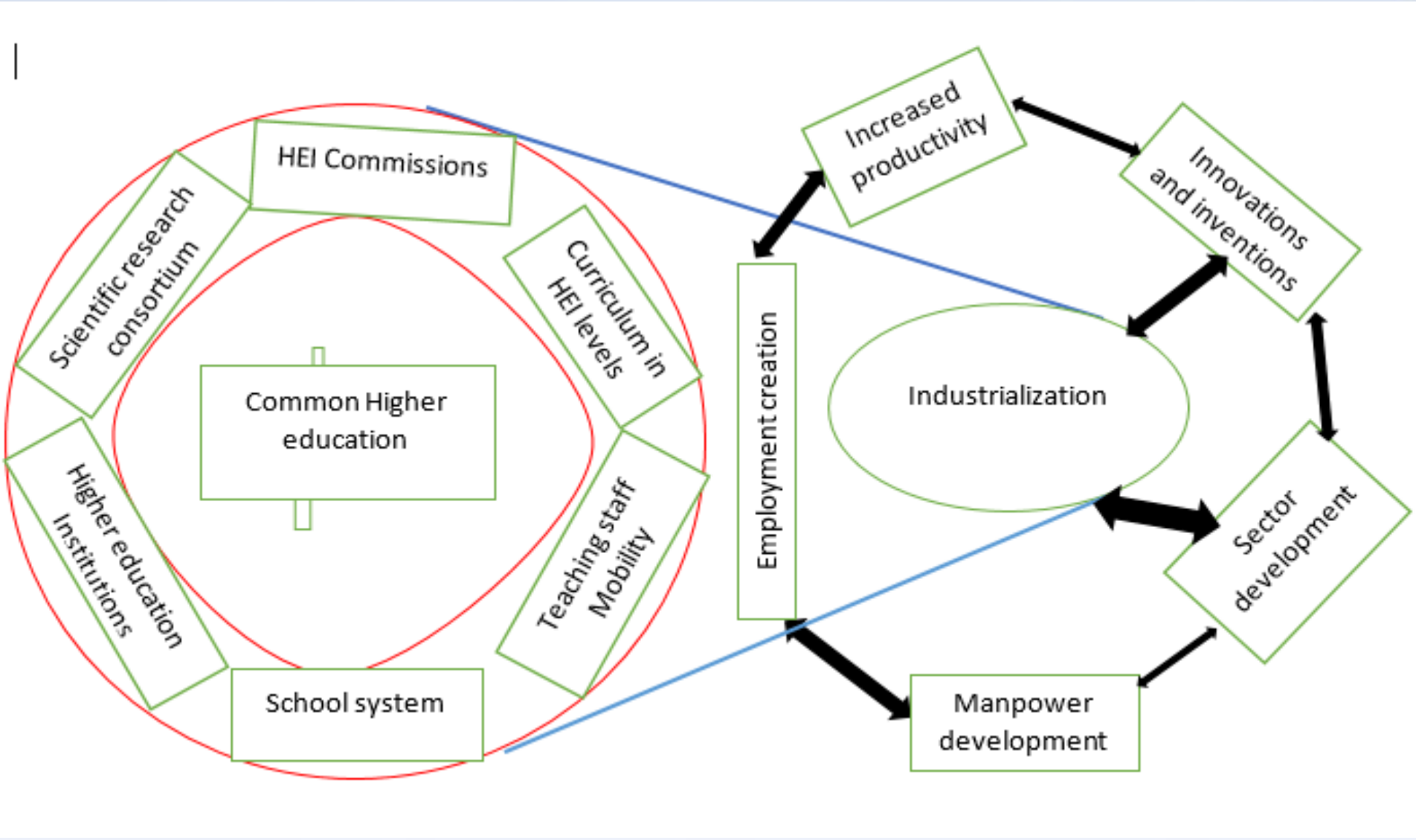
  Strengthening African Innovation ecosystems through supporting a **culture of innovation** and **competitiveness**, whilst s**purring growth of innovative**, market-driven African solutions to African challenges.

  Can we establish others? Country based, Institutional based awards,

Role of HEI's in Promoting Industrialization in EAC

- **Facilitation of networking among research institutions, academia and industry** for best practice sharing, and building partnerships for collaborative R&D, technology and innovation initiatives within countries.
- **Strengthening collaborations and networks** amongst regional institutions to enhance capabilities for industrial policy design and management.
- Strengthen Collaborations internationally to share best practices

Conceptualizing HEI and Industrialization



Conclusion and Way Forward

- Create a system that can **document best practices** from the Centres of Excellence to facilitate sharing of knowledge to promote industrialization.
- Recommend **more centres of excellence** E.g. in Innovation and technology
- Have a **clear and comprehensive policy framework** to guide collaborations and partnership between HEI's and Industries in the region.

Way Forward and Conclusion

- **Strengthen the administrative arrangements** for coordination, and M&E of the process of transforming EAC into a Common Higher Education Area.
- HEI's should **align education to current demands** in the region in relation to major projects like oil & gas projects.
- **Institutionalize Research & Research Uptake** within the HEI's to create an **enabling platform for industrialization**.

Way Forward and Conclusion

Lets play our critical role of fast tracking industrialization with a sense of urgency


Thank
you