# RE-ENGINEERING HIGHER EDUCATION IN KENYA FOR JOB CREATION

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# OUTLINE

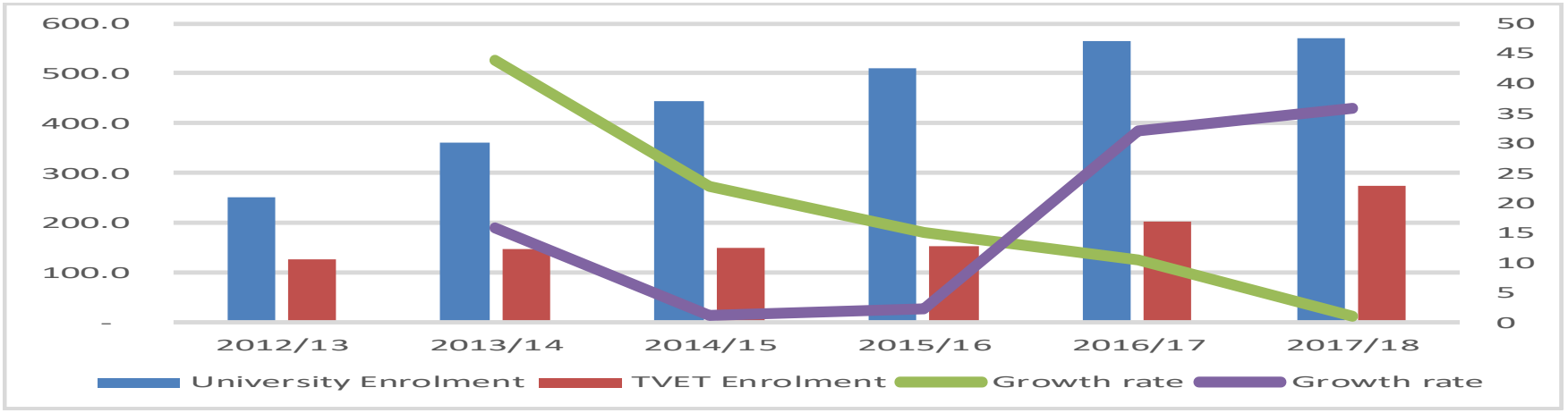
- Background and Context of Higher Education
- Motivation (current status)
- Gaps
- Objectives
- Lessons from other countries
- Key areas of intervention (recommendation)
- Implications for Policy

# BACKGROUND AND CONTEXT

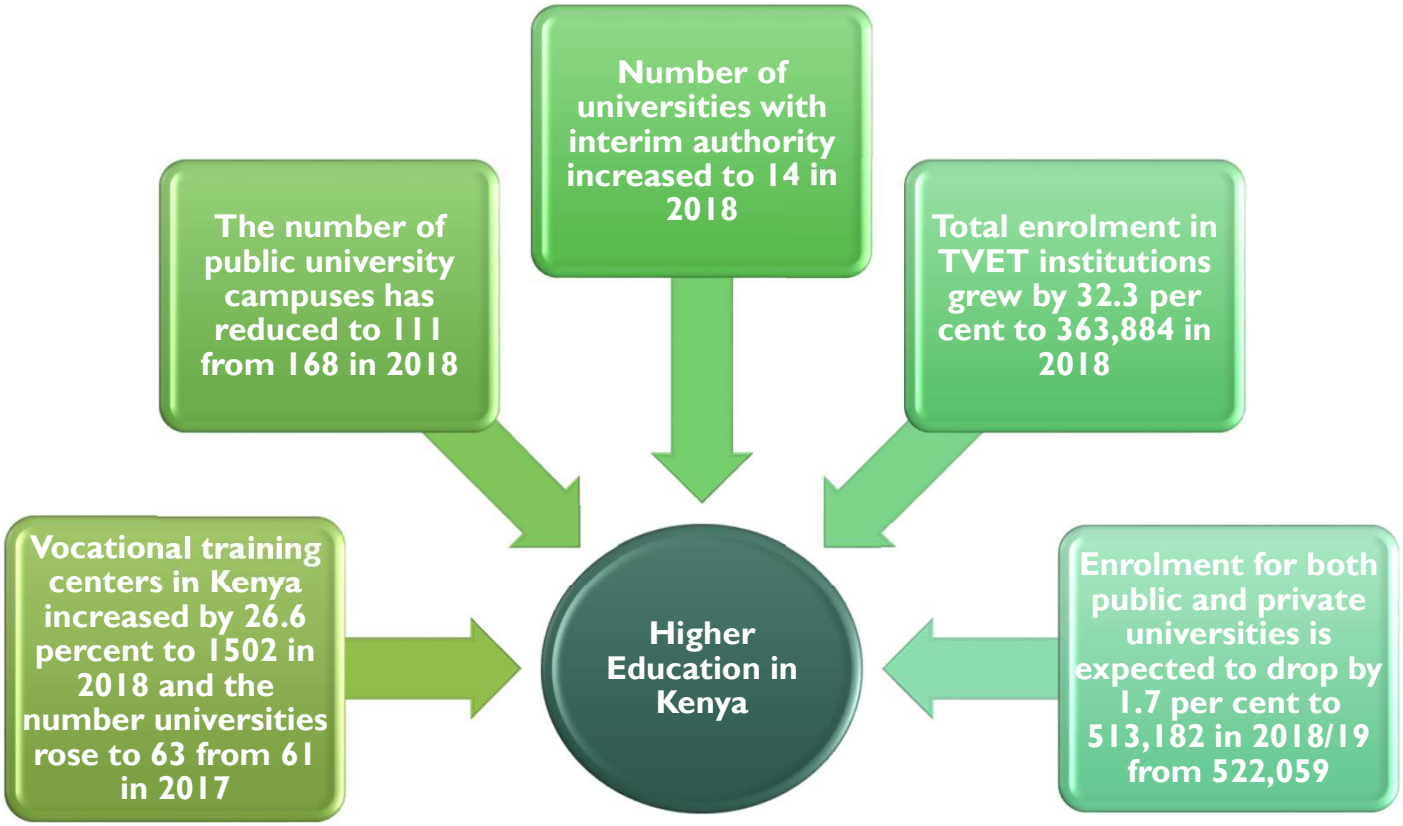
- University education is critical for sustainable development
- Propels intellectual growth and societal change
- Act as agent of change in socio-economic and political transformation of societies
- Contributes to transformative research, innovation and human interaction
- Developing multifaceted human resources by promoting the knowledge-enabled population that will advance socio-economic mobility, peace and progress in society

# KENYA HAS OVER 70 PUBLIC AND PRIVATE UNIVERSITIES. UNIVERSITY ENROLMENT INCREASED OVER TIME BUT AT A DECLINING RATE BY 7.7 PER CENT IN 2017/18 COMPARED TO 2016/17 WHILE TVET ENROLMENT INCREASED BY 35.8 PER CENT IN THE SAME PERIOD

- In 2018, 660,204 candidates sat for the KCSE exams ( 48.7 per cent female) but 14% attained C *plus* grade and above.



# CURRENT STATUS OF HIGHER EDUCATION IN KENYA




***Key Policy Reforms***

1. Adoption of a market based policy for financing public universities
2. Formation of the Commission for University Education (CUE) under Universities Act, No. 42 of 2012

# QUALITY OF HIGHER EDUCATION

- Under the Universities Act, No. 42 of 2012, the Commission for University Education (CUE) was formed to regulate university education in Kenya. However, the quality has been affected by;

✓ Emergence of unaccredited higher education courses/programmes and several campuses. CUE report (2018) recorded 113 unapproved degree courses from different universities in Kenya.

✓ High enrolment caused following parallel programmes; limited number of Lecturers

✓ Effect of uncontrolled expansion of universities gave rise to unhealthy competition of enrolling privately sponsored students.

✓ Inadequate share of allocation to public universities and TVET institutions (universities are unable to employ highly qualified academic staff and expand their infrastructures.)

✓ Limited open, distance and e-learning

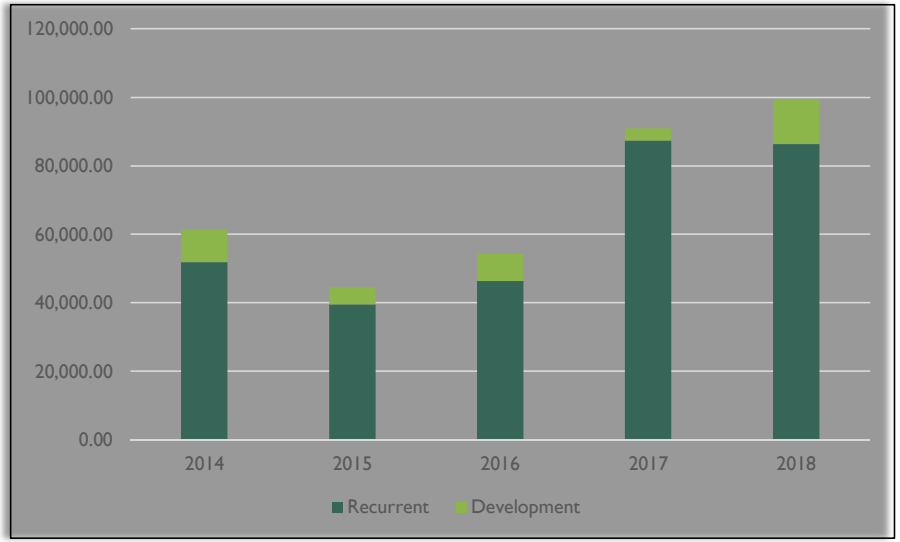
- The recent introduction of Competence Based Curriculum (CBC) and Competence-Based Education and Training (CBET) curriculum is expected to improve the quality of higher education by allowing flexibility and responsiveness to the changing needs of the labour market

# MANAGEMENT STRUCTURES AND MODELS OF HIGHER EDUCATION

- Management structures are of great importance in the academic and teaching freedom, resource management, innovation and research market
- ✓ Strengthen innovations in management of higher learning institutions
- ✓ Universities should have management autonomy on the resources, however audits and oversight function needs to be strengthened
- ✓ Universities and Technical Institutions should **encourage internal decentralization in the administration of resources,** and promote the use of **management information systems and transparency in administration,** use of resources, and communication of results
- The expansion of these institutions calls for adoption of **dynamic strategic management system for both capital and human resources**
- The competence of administration contributes to successful development of the higher education institutions.

# RESOURCES AND FINANCING HIGHER EDUCATION

State Department for University Education




State Department for Vocational and Technical Training


1. During the review period, the number of loan beneficiaries from the public universities increased by 5.1 per cent to 217,888, while the amount of loans awarded rose by 10.3 per cent to Ksh 9.2 billion.
2. The number of loan applicants and beneficiaries from TVET institutions increased by 33.8 per cent and 44.7 per cent, respectively, in 2017/18
3. The amount of loans awarded increased by 50.6 per cent to Ksh 1.3 billion in 2017/18.
4. Government increased infrastructure development for TVET institutions

# POLICY GAPS

- Lack of sufficient evidence on the relationship between higher education and Job creation
- Implementation of Competency Based Curriculum and CBET Programme require reforms in Higher education
- Given the importance of university education in socio-economic and political transformation of societies, it is important to focus on this critical sub-sector.

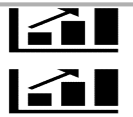
# FOCUS

*The main objective of the presentation is to assess the management structures and models, as well as resources, leadership and governance of universities in the country against the expectations on its role in society.*

1. To evaluate performance of higher education.

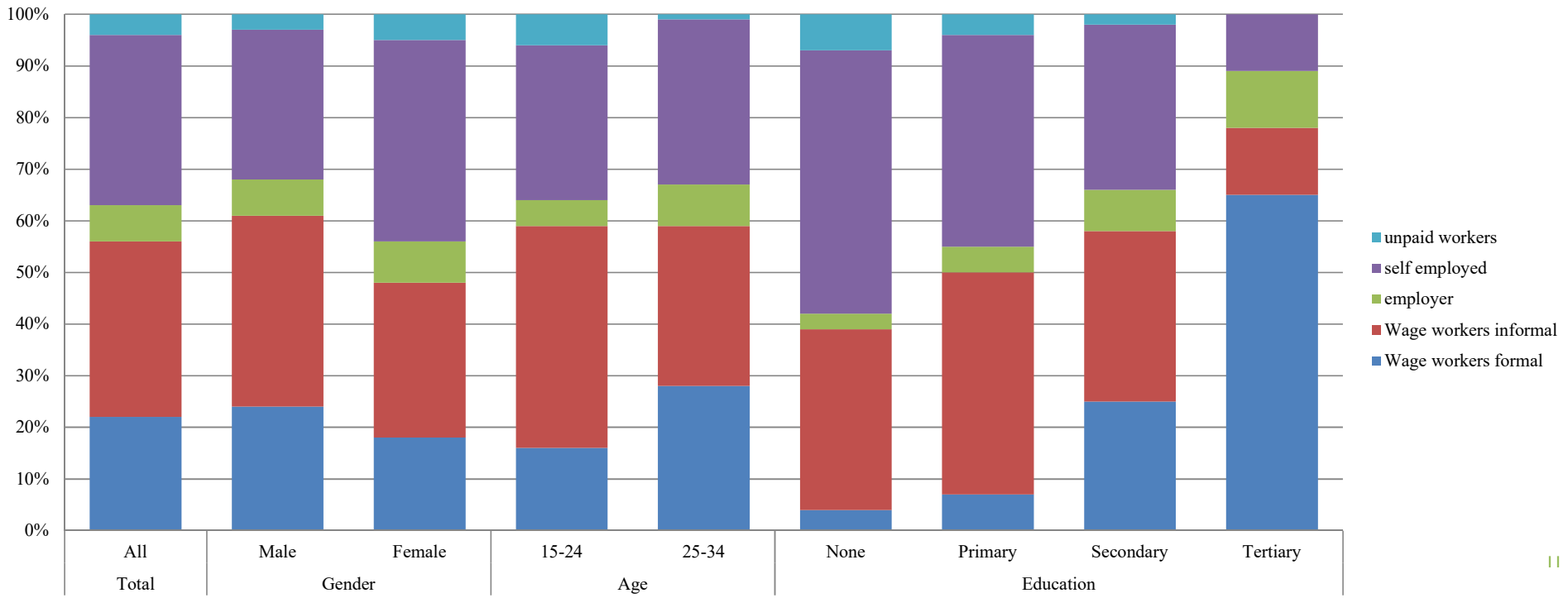
2. To assess effect of higher education on the labour market in Kenya context both in private and public sector

3. To draw implication for policy(s) necessary for re-engineering higher education.



4. To assess influence of resources, Leadership and governance of universities on social development and economic growth in higher education

# KENYA'S LABOR MARKET IS CHARACTERIZED BY A RELATIVELY SMALL FORMAL WAGE SECTOR AND MUCH MORE WORK IN THE FORM OF INFORMAL WAGE AND SELF-EMPLOYMENT



- Achieving knowledge-based economy as outlined in MTP II and III include Partnerships, value chain analysis; synergy and through enhanced cooperation.
- Focus was on technical skills development, strengthening the technical capacity and capabilities of individuals and institutions involved in research and innovation.
- On Global Business Competitiveness Index on innovation and sophistication for the year 2017, Kenya ranked 40, only outperforming Brazil and Russia

| COUNTRY | INNOVATION AND SOPHISTICATION | | HIGHER EDUCATION & TRAINING | | TECHNOLOGICAL READINESS | |
|---|---|---|---|---|---|---|
| | RANK | SCORE | RANK | SCORE | RANK | SCORE |
| CHINA | 29 | 4.22 | 54 | 4.64 | 74 | 3.96 |
| SA | 31 | 4.18 | 77 | 4.22 | 49 | 4.7 |
| BRAZIL | 72 | 3.55 | 84 | 4.11 | 59 | 4.37 |
| KENYA | 40 | 4.03 | 97 | 3.86 | 88 | 3.55 |
| INDIA | 30 | 4.22 | 81 | 4.12 | 110 | 2.99 |
| RUSSIA | 66 | 3.62 | 32 | 5.09 | 62 | 4.3 |

# ACHIEVEMENTS AND HIGHER EDUCATION READINESS

- Expansion in Humanities and social programmes
- Establishment of the National Physical Science Research Laboratory for Engineering and New Production Technologies
- To build capacity for nuclear energy, several Kenyans are pursuing studies in nuclear Energy in South Korea, Slovakia, Russia, Texas A&M and China. Legal Frameworks for establishing both Kenya Institute of Oil and Gas (KIOG) and the Kenya Institute of Mining and Geology
- Kenya Advanced Institute of Science and Technology (KAIST) to provide specialized training in various engineering and science fields
- Konza Technopolis Development Authority
- **Technology and Innovations Delivery Services Programme and** specific research institutes such as KALRO, KEMRI, KEFRI and KEMFRI
- Development of a critical mass of a competent human resource for the development and application of Biotechnology, UoN, KU, Egerton, JKUAT and others offer training on Biotechnology programmes at MSc and Ph.D
- Various Research and development Programmes

# CHALLENGES

- Inadequate funding to undertake research, incubation and development
- Weak Resource mobilization
- Weak linkage between industry and academia, and inadequate capacity and capability to incubate and harness research and innovation outputs and turn them into goods and services
- Low demand for RD&I by industry from Higher Learning Institutions
- Absence of a skills inventory hampered effective planning of human resource development
- Weak enforcement of local content requirement on projects execution is hampering technology transfer
- Weak mechanisms for implementation, evaluation and review of ongoing projects and programmes
- Slow implementation of the affirmative action for entrenching science technology and innovation from early childhood in the education system
- Limited employment opportunities
- Existence of multiple regulatory authorities/agencies that regulate research activities

# *INDUSTRY SKILLS DEMAND*

- **Digital technologies***:* software development. Incubation of innovations in this area needs to be facilitated in order to eventually commercialize them
- **Space Technologies:** microsatellite technology development as it is less capital intensive and short has timelines from inception to launch of satellites in space. Universities currently pursuing this technology are Technical University of Kenya (TUK) and University of Nairobi (UoN) which should be properly funded to develop capacity and capability
- **Natural Products Industry:** industrial production of Nutritionals; phytochemicals/ pharmaceuticals; Ethno-veterinary (e.g acaricides, dewormers, food stuffs); personal care products; house hold care; and organic fertilizers
- **Oil and Natural Gas Exploration and Exploitation**: Relevant skills development at TIVET and University levels is now critical and more resources needs to be channeled to human resource development
- **County ST&I development** – need to tap sustainable indigenous technologies and natural products at county level and also infuse ST&I in county development programmes
- **Synthetic Biology, Stem Cell research and regenerative medicine** – an area which need allocation of more resources and intensive technology development.
- **Pests and diseases***:* Need to develop new technologies and strategies for control of emerging pests and diseases for both crop and livestock

# EXAMPLE OF VALUE CHAIN

**Space Science and Technology Development Programme** will directly facilitate the following applications:

- Remote sensing for natural resource monitoring and management;
- Climate change and drought monitoring;
- Natural disaster prediction and mitigation;
- Rural and urban planning;
- Communications, Navigation, positioning and timing;
- Telemedicine;
- E-learning;
- Space weather monitoring and mitigation of potential threats to technological systems,
- National security surveillance.

# ENTREPRENEURSHIP

- Business development
- Business outsourcing
- New technologies development
- Data analytics
- Public private partnerships
- Mentorship
- Subcontracting model in nurturing small enterprices

# OTHER AREAS OF INTERVENTION

- Expand special needs education at tertiary education
- Universities should utilize alumni and parents in management of student affairs
- With regard to responsive curricula, universities should partner with the private sector in the development of curricula. Industry-university liaison committees should be set up to ensure regular review of university programmes, promote their relevance and quality in the light of rapid scientific and technological advances, and skills requirements
- Appointment in each institution (public and private universities, CUE, HELB and the Ministry of Education) a committee to spearhead integration, implementation and championing of the CBC reforms
- Reforms required in financing of Higher Education: Focus on mobilizing resources from industry rather than focusing on Government grants and student fees (households financing)
- Design targeted programmes for student welfare and Mental health support; security while at private residence premises; upholding morals and values, personal responsibility

# LESSONS FROM OTHER COUNTRIES

| Country & Institution | Lessons |
|---|---|
| Makerere University in Uganda | The great divide between science-based and humanities-based facilities and programs in universities influence the performance of universities in Africa. |
| South Africa, Telkom South Africa has established Centres of Excellence in selected departments of engineering in South African universities. | University-industry partnerships |
| Denmark, China and France | Merging existing institutions |
| India and United States of America | Transformation of university and tertiary education should also focus on enacting the financing and regulatory policies that encourage institutions to compete at international level |
| The United States and India | Re-engineering higher education also requires a strong leadership structure with a bold vision of the institution's mission and goals. |
| -In Australia, the University of Adelaide, for example, used Oracle's intelligent chatbot<br>-The Central New Mexico Community College is using Oracle's technology | Integrating technology in teaching, distribution of materials and communications; Open universities |

# RECOMMENDATIONS

There is need for higher education in Kenya to strengthen the collaboration and partnership between higher learning institutions and industries


The government should consider reviewing programmes in existing universities to be consistent with CBC


The government needs to strengthen policy environment and create the financing and regulatory conditions


Universities and Technical Institutions should encourage internal decentralization in the administration of resources, and promote the use of management information systems

The government can explore ways of measuring learning outcomes at the tertiary education level.

Thank you