

The Engineering Profession and Professional Development in Realisation of Human Capacity in Kenya

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BACKGROUND

- Engineering in Kenya regulated by the Engineers Board of Kenya (EBK)
- Engineers Board of Kenya is a statutory body established by the Engineers Act, 2011
- The Engineers Act, 2011 was assented to by His Excellency the President on 27th January, 2012 and commenced by the Minister on 14th September, 2012

- The Board consists of 11 members and the Registrar who is an *ex officio* member
- The Board is responsible for the registration of engineers and firms, regulation of engineering professional services, setting of standards, development and the general practice of engineering

Functions and Powers of the Board

- Registration of engineers (graduates, professionals, consulting, accredited checkers, temporary).
- Issue licences to qualified persons.
- Inspect sites where engineering works are in progress to verify that professional engineering services and works are undertaken by registered engineers and that standards and professional ethics and relevant health and safety aspects are observed .

- Approve and accredit engineering programs in public and private universities and other tertiary level education institutions offering education in engineering.
- Evaluate other engineering programmes both local and foreign for recognition by the Board
- Establish a school of engineering
- Establish the Kenya Academy of Engineering & Technology

- Plan, arrange, co-ordinate and oversee continuing professional training & development.
- Facilitate internship for graduate engineers.
- Determine fees to be charged by professional engineers and firms for professional engineering services
- Develop, maintain and enforce the code of ethics for engineers and regulate the conduct and ethics of the engineering profession

- Register engineering consulting firms

Registration Status

<input type="checkbox"/> Registered Consulting Engineers	-	281
<input type="checkbox"/> Professional Engineers	-	1,358
<input type="checkbox"/> Registered Graduate Engineers	-	5,689
Total	-	7,328

Engineers per capita

- The per capita for Kenya is approximately 5,400
- According to UNESCO the per capita for rich countries is 500 while it is 2,000 for poor countries. The average is 770.
- Therefore Kenya should have approximately 20,000 engineers at the minimum

Engineering graduates per year

COUNTRY	GRADUATE ENGINEERS PER YEAR	POPULATION
China	250,000	1.5 billion
India	350,000	1.2 billion
USA	60,000	311 million
Brazil	25,000	190 million
South Africa	1,500	50.5 million
Kenya	700	40 million
Australia	5,000	22.5 million

Why accredit programs?

- An assurance that the program meets quality standards set by the Board
- Helps students, parents and guardians choose quality university programs
- Enables employers to recruit graduates they know are well prepared

- Accreditation is used for registration and licensing
- Accreditation gives universities a structured mechanism to assess, evaluate and improve the quality of their programs
- Facilitates mutual recognition/cross-boarder mobility for engineers

- It is a global practice widely applied in many countries including United States of America, South Africa, Tanzania, Malaysia, Korea, Australia, Canada, and Japan among others
- Board has developed a document to guide the universities in the preparation of programs
- Criteria contains the following among others:

- ❑ Curriculum content

- ❑ Minimum admission requirements

- ❑ Human resource: qualifications and numbers of staff, particularly those teaching core engineering courses

- ❑ Physical infrastructure – availability of well equipped laboratories ,libraries, computing facilities, etc

- ❑ procedures for inspection of the facilities

- The fundamental principal here is to safeguard public health and safety
- The Act prescribes very deterrent penalties for offering programmes which are not approved and accredited by the Board – Fine of Kshs. 5 million or five years in jail or both(Section 46).

Qualifications for Registration as a Consulting Engineer (Section 16 (b))

- Must have practised in a specialised engineering field as a professional engineer for a period determined by the Board
- He/she must have achieved a standard of competence to enable him/her to practise as a consulting engineer in that particular specialisation

Qualifications for Registration as a Professional Engineer (Section 16(a))

- Must be a registered graduate engineer and has obtained practical experience as prescribed under the Act
- Has passed a professional assessment examination conducted by the Board
- Is a corporate member of the Institution of Engineers of Kenya

Qualification for Registration as a Graduate Engineer (Section 18)

- Hold a degree in engineering from a recognised university or such other qualifications as the Board may determine
- Be a Kenyan citizen or a permanent resident of Kenya

Internship for Graduate Engineers

- The Act provides for internship for graduate engineers
- Board has developed the draft policies , guidelines and training manuals for internship
- It is expected that approximately 500 interns will be put on the rolling program annually

- Licensed engineers will be engaged as mentors
- Interns to be paid some stipend.
- Reports from each intern to be filed with the Board on quarterly basis.

- This will accelerate capacity building for engineers
- In the last five years the Board has been registering averagely 55 professional engineers per year – out of over 5,600 registered graduate engineers

Continuing Professional Development

- Section 32(2) of the Engineers Act provides for mandatory continuing professional development (CPD)
- Draft policy and guidelines for implementing the program under preparation
- CPD certificate required for renewal of annual practising licence

Professional Misconduct

- A person who is licensed as a professional or consulting engineer commits an offence of professional misconduct if:-
 - ❑ He deliberately fails to follow the standards of conduct and practice of the engineering profession set by the Board
 - ❑ Commits gross negligence in the conduct of his professional duties

Prohibition on for the use of the term “engineer” Section 47

- The term “engineer” and “engineers” are protected under the Act and shall only be applied to persons or bodies fulfilling the requirements of the Act.
- A person who uses the term/s but is not registered under the Act commits an offence
 - Fine Kshs 500,000 or 2 years in jail or both.

Practising without a licence

- A person shall not be entitled to recover a charge for professional engineering services unless that person is licensed
- The penalty for practising engineering without a valid licence or charging professional fees without a valid licence is Kshs. 2 million or five years in jail or both (Section 51)

Challenges

- Many graduate engineers opting for other professions. This is due to the perception that engineering is boring and hard, jobs are badly paid considering the responsibilities involved
- Shortage of requisitely qualified engineering lecturers
- Inadequate physical infrastructure in the universities offering engineering

- Obsolete teaching facilities in the faculties/schools of engineering

Way Forward

- Increase enrolment in undergraduate engineering programmes without compromising the quality
- There is need for deliberate phenomenal investment in engineering education
- Look beyond our borders to find proven solutions

- Take advantage of what others have done – there is no point re-inventing the wheel.
- Practise value engineering
- Adopt the best practices that develop the present and preserve the future
- Nurture the young professionals(YP) for sustainable engineering

THANK YOU FOR YOUR
SUSTAINED ATTENTION

Q & A