The Case for a Regulatory Policy Framework in Kenya: Insights from Overlaps and Conflicts in the Regulation of Engineering Professions

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I. INTRODUCTION

The Institute of Civil Engineers (ICE) has modified Thomas Tredgold's classical definition of engineering into: "the art of working with the great sources of power in nature for the use and benefit of society"[1]. This definition places civil engineering, or any other engineering for that matter, at the centre of economic development. Nonetheless engineers themselves are a resource that a country must develop and manage to realize national developmental aspirations. Development and management of this critical human resource entail professional regulation.

Engineering's role in transformation of societies is indisputable. For instance, Kumar (1995) saw engineers as the main agents of development in colonial India. According to the Association of Professional Engineers Australia, human progress relies fundamentally on engineering (APEA n.d.). engineering is regarded as fundamental to almost every national goal. Cebr (2016 p 4) in a report to the Royal Academy of Engineering noted that: "With half the world living in poverty and millions of people without sufficient food or sanitation, engineering continues to have a key role to play in helping countries to progress across the world". The Cebr Report has given detailed overview of the role of engineering in economic development including the achievement of the Sustainable Development Goals (SDGs). This position has been reiterated by UNESCO (2021).

Kenya has a national development blueprint in the form of vision 2030, that seeks to transform the country into "a newly-industrializing, middle income country providing a high quality of life to all its citizens in a clean and secure environment" (Republic of Kenya 2007a). The blueprint identifies strategic elements in terms of foundation for socio-economic development and economic and social pillars of development as summarized in Table 1.

[1] https://www.newcivilengineer.com/archive/defining-civil-engineering-12-02-2018/

Table 1: Strategic features of vision 2030

Feature	Item
Foundation	infrastructure, Science, technology, and innovation Human resource development Security Public service
Economic Pillars	tourism Agriculture Wholesale and manufacturing Business process outsourcing/offshoring Financial services
Social Pillars	education and training Health care delivery Water and sanitation Environmental management Gender youth and vulnerable groups Housing and urbanization Social equity and poverty reduction

From the Table we can see that engineers will be involved directly in some of the items like technology and innovation, agriculture, manufacturing, water and sanitation, housing and practically in all of them through provision of infrastructure. This makes engineering a critical profession for national development in Kenya.

However, engineering like professions such as accounting, architecture and medicine require high degree of integrity and accountability. Since we cannot move forward without the professional input of engineers, their practice must be regulated for better outcomes in society and economy. According to Naiyaga (2011) there are three basic objectives for regulating engineers:

- Legislative Efficiency; to have a comprehensive, consistent statutory registration system for engineers that would alleviate inconsistencies across jurisdictions
- Professional Recognition; so that the set of standards and skills expected of the engineers are maintained
- Industry/Consumer Efficiency; to provide consumers with the level of experience and skills that is required of the engineer.

This study deals with the legislative efficiency of the regulation of engineering professions in Kenya. It examines the actual and potential conflicts entailed in the jurisdictional overlaps of the agencies and statutes involved in the regulation of engineering professions in Kenya. After highlighting this regulatory inefficiency (or inconsistencies) it proceeds to propose a policy remedy in the form of a regulatory policy framework.

II. REGULATORY OVERLAP AND CONFLICT

It is important to note that much of the studies in regulation concern industry regulation. This primarily involve competition and sector regulatory laws. Hence regulatory conflict literature is dominated by studies of conflict between competition agencies and sector regulators or competition and economic regulation. The grounding treatise on the theory regulatory overlap and conflict was written by Haines and Gurney (2003): *The Shadows of the Law: Contemporary Approaches to Regulation and the Problem of Regulatory Conflict*. This work pointed out that conflict between sector regulators is also possible; arising from differing regulatory ideologies attributed to different regulatory regimes or bodies. It is this kind of conflict that this study deals with albeit in the lesser studied field of professional regulation.

Haines and Gurney (2003) made a strong case for bringing regulatory conflict to the centre stage of regulation studies because conflict had remained undertheorized. Their study did this demonstratively, by considering the ideological conflicts between the Trade Practices Act and the Occupational Health and Safety Act in Australia after reckoning that regulatory scholarship mainly focused on:

- Improving compliance at the generic level
- Maximizing compliance with a single regulatory goal e.g. improved environmental standards
- Occupational health and safety
- Competition and economic regulation

In this context, conflict when considered, was understood to be between compliance and self-interest or profit, with the assumed moral rightness of improving compliance. The study further noted that regulation scholars tended to avoid the study of conflict because its nature was politically problematic and instead shifted attention to regulatory competition rather than harmonization whenever regulatory overlaps occurred. Therefore, it underscored the need for scholars of regulation to research on conflicts, their impacts on regulatee and methods of resolution of such conflicts.

It is in the light of this that we consider overlap in the regulation of engineering professions in Kenya and the regulatory conflict it generated, how the conflict affected the engineering schools, graduates and students and a proposal toward resolution of such conflicts. The solution to such conflicts entails regulatory reforms. Regulatory reforms have been pushed through ''better regulation" which is associated with the New Public Management (NPM) paradigm (see Radaelli and Meuwese 2009) and ''quality regulations" associated with Whole-of-Government (WOG) paradigm (see OECD 2011). According to Christensen and Lægreid (2006a, 2007) the global trend of regulatory reform has moved from the NPM to the WOG paradigm. Therefore, this study embraces the WOG paradigm to be up to date in the reform considerations.

In the next two sections we consider two vignettes of regulatory overlaps and conflicts experienced in the regulation of engineering professions in the recent past. Thereafter we shall use the WOG/regulatory quality approach to advance a solution to such conflicts in the form of a regulatory policy framework.

III. VIGNETTE I: LEGAL WRANGLES IN THE REGULATION OF ENGINEERS

A landmark regulatory conflict that took legislative and judicial dimensions was triggered in the realm of regulation of engineering professions when two related petitions were brought before the High Court. This involved High Court Petition No. 149 of 2011 by Jesse Waweru Wahome and 42 others against ERB, Egerton University, Ministry of Higher Education Science and Technology, and Commission for Higher Education (CHE). The second, High Court Petition No. 207 of 2011, pitted Martin Wanderi and 11 others against Masinde Muliro University of Science and Technology, Moi University, ERB, The Permanent Secretary Ministry of Higher Education Science and Technology, and CHE. Both cases were consolidated heard and determined by the High Court. Basically, the two cases involved graduates from Egerton and Masinde Muliro universities who had been denied registration by ERB as graduate engineers on the account that ERB had not accredited the engineering programmes offered by the respective universities.

Two fundamental issues were raised in the litigations. The first one concerns the petitioners' and the universities' argumentation that ERB had no mandate to accredit university programmes. CHE on the other hand absolved itself by arguing that it only regulated private universities. Public universities were autonomously regulated each by its own incorporating statute. These two positions led to interesting statutory developments and litigations regarding the regulation of engineers.

As the matter dragged in court, the Engineers Registration Act (Republic of Kenya 2009) was repealed and replaced by the Engineers Act no. 43 of 2011, that came into force on 14th September 2012 (Republic of Kenya 2012a). In the new legislation, the regulator corrected the lacunae earlier on identified to give itself the sole authority to accredit engineering schools in Kenya see no. 6 of Table 5 under extraprofessional functions. Meanwhile the Ministry of Higher Education, Science and Technology also saw it fit to transform CHE into an overall regulator of

university education. This led to the enactment of new statute, the Universities Act no. 42 of 2012, that transformed CHE into Commission for University Education (CUE) (Republic of Kenya 2012b). This legislation disbanded CHE, repealed the autonomous university statutes and placed all public and private universities under the accreditation and regulation of CUE.

Meanwhile, given to fear of the legal ensconcement of ERB's successor the EBK as the accrediting authority for engineering schools, the second petitioners filed another case in the high court to scuttle the regulators strategy on the basis that the Engineers Act no. 43 of 2011 was unconstitutional. In Petition No. 248 of 2012, Martin Wanderi & 19 others versus Engineers Registration Board and 5 others, the contention was that Section 7(1)(l) that gave EBK power to accredit engineering schools alongside other two Sections rendered the new law unconstitutional. However, the presiding Judge ruled that the said Section had been repealed by the enactment of the Universities Act no. 42 of 2012.

In order to implement Section 7 (1) (l) the regulators had shored up EBK's position. For instance, at section 46 the Act criminalized the "statutory independence" of universities by making it an offence to teach engineering courses without accreditation by the EBK. It stated that: "A person who, being in charge of a training institution which is not recognised by the Board as an institution registered or seeking registration [...] commits an offence and is liable on conviction to a fine of five million shillings or to imprisonment for a term not exceeding five years, or both" (Republic of Kenya 2012a p E9—21).

Eventually when the initial case came to determination, the presiding Judge ruled that there was no clause in the Engineers Registration Act that empowered ERB to accredit engineering schools. This was appealed up to the Supreme Court but the latter upheld the High Court ruling. Despite this outcome the tussle between EBK and CUE on who should accredit engineering programmes continued unabated and universities were caught at the crossroads. This led to the amendment of the Universities Act to settle the scores once and for all. The Universities (Amendment) Act No. 48 of 2016 addressed itself elaborately to the issue of accreditation.

In this case amendments were made stating that: "If there is a conflict between the provisions of this Act and the provisions of any other Act in matters relating approval or accreditation of academic programmes offered by universities, the provisions of this Act shall prevail". Further on it criminalized the accreditation activities of the EBK by making provisions that: "A person who without the authority of the Commission under this Act purports to license, accredit, recognise, audit, inspect, index students or collect a fee or a charge from a university or a student commits an offence and shall be liable on conviction to a fine not exceeding two million shillings or imprisonment for a term not exceeding two years or both" (Republic of Kenya 2016 p. 1187).

This legal wrangle exposes Parliament of Kenya as a chaotic and inconsistent house that passes any law brought to its floor without regard to any entailed incoherence. In 2011/2012 it passed two contradictory laws regarding the regulation of engineers: Engineers Act no. 43 of 2011 and the Universities Act no. 42 of 2012. According to the OECD (2009 p 32) Parliament ''can play a key role in helping strengthen regulatory quality". As the institution that approves regulatory legislation it can ''exercise oversight and control over the application of better regulation principles for new and amended regulation" (OECD 2009 p 32). However, the Kenyan Parliament seems to be making uncoordinated legislative decisions.

IV. VIGNETTE II: STATUTORY OVERLAPS IN ENGINEERING REGULATION

The judicial conflict discussed in Vignette I was based on the Engineers Registration Act that created the ERB. Before it was repealed in 2011, it formed the legal basis for the regulation of both engineers and technician engineers. Its repeal led to the commencement of two separate statutes, one regulating engineers, the Engineers Act no. 43 of 2011 and the other regulating technician engineers, Engineering Technology Act No 23 of 2016 (Republic of Kenya 2016b). The former

created EBK while the latter created Kenya Engineering Technology Registration Board (KETRB) as the regulating body. Table 2 presents the regulatory overlaps of both boards.

Table 2: Regulatory overlaps and the engineering professions

Regulatory Powers of EBK	Regulatory Powers of KETRB
1. Enter and inspect sites where construction, installation, erection, alteration, renovation, maintenance, processing or manufacturing works are in progress for the purpose of verifying that a. Professional engineering services and works are undertaken by registered persons under this Act; b. Standards and professional ethics and relevant health and safety aspects are observed; 2. Assess, approve or reject engineering qualifications of foreign persons intending to offer professional engineering services or works; 3. Evaluate other engineering programmes both local and foreign for recognition by the Board; 4. Enter and inspect business premises for verification purposes or for monitoring professional engineering works services and goods rendered by professional engineers; 5. Instruct, direct or order the suspension of any professional engineering services works, projects, installation process or any other engineering works, which are done without meeting the set out standards; 6. Approve and accredit engineering programs in public and private universities and other tertiary level educational institutions offering education in engineering; 7. Plan, arrange, co-ordinate and oversee continuing professional training and development and facilitate internship of graduate engineers;	1. Enter and inspect sites where construction, installation, erection, alteration, renovation, maintenance, processing or manufacturing works are in progress for the purpose of verifying that a. Engineering professional services and works are undertaken by registered persons b. Standards and professional ethics and relevant health and safety aspects are observed, in line with Occupational Safety and Health Act, (No. 15 of 2007) 2. Assess, approve or reject engineering technology qualifications of foreign persons intending to offer engineering technology professional services or works in Kenya; 3. Enter and inspect business premises for verification purposes or for monitoring works, services and goods rendered by professional engineering technologists; 4. Recommend for the suspension of any engineering technology professional services, works, projects, installation process or any other engineering technology works, which are done without meeting the standards; 5. Plan, arrange, co-ordinate and oversee professional training and facilitate internship of engineering technologists;

From the Table we may observe that the regulatory powers read the same in most cases. Take for instance entry number 1 for both boards. They are given regulatory power to do the same thing which already constitute an overlap in their regulatory jurisdictions. At a. they are supposed to inspect construction sites to ensure that the workers involved are registered by respective board. In the near past, it was reported in one of the dailies that KETRB is seeking funding to enable it to achieve what it considers its mandate, regulation of the construction industry[2]. According to the Chairperson of the board the major challenge of the housing sector was the employment of unregistered technicians, technologists, and artisans that made it impossible to prosecute those at fault in the case of a building collapsed. Although from a technical point of view, the collapse of a building cannot be

[2] https://www.the-star.co.ke/business/2019-07-17-new-state-agency-seeks-fund-to-regulate-construction-industry/

attributed solely to poor workmanship but to many factors including quality of materials (regulated by the Kenya Bureau of Standards), the contractor (regulated by National Construction Authority) and the Building Code implemented by a city or town's building regulations inspectorate.

At b. there is an overlap between the two boards too, and an overlap between them and other regulatory institutions. In the instance of the Occupational Safety and Health Act that RBK implicitly and KTRB explicitly seek to enforce, its descriptive title says that it is "an Act of Parliament to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes" (Republic of Kenya 2007b). This description implies that the legislation is meant to deal with all work environments even where no engineering practice is taking place which puts it outside the jurisdiction of regulation of professions. Additionally, from the described scope, the legislation created its own regulatory agency, the National Council for Occupational Safety and Health (NCOSH), to oversee its implementation. This means, therefore, that the operations of EBK, KETRB and NCOSH are going to clash. Section 23 of the Act has clearly stated that:

- There shall be a Director of Occupational Safety and Health Services who shall be responsible for the administration of this Act,
- The Director shall be, (a) an ex officio member of the Council but shall have no right to vote; and (b) the secretary of the Council.

So here is a case where the drafters of the engineering regulation law did not consider the provisions of other sector Acts to eliminate overlap and potential regulatory conflicts.

Number 2 for both bodies is to do with assessing and approving foreign qualifications. This will overlap with the mandate of Kenya National Qualifications Authority (KNQA) set up to coordinate and harmonize education, training, assessment, and quality assurance. The overlap in number 3 and number 6 for EBK, has been removed by the settlement of the regulatory conflict that had erupted between ERB and the regulators of university education as has been discussed in the preceding section.

Number 4 for EBK and number 3 for KETRB, also number 5 for EBK and number 4 for KETRB are regulatory ambitions that will lead to straying into the jurisdictions of many agencies as they tend to cut across two major sectors of the economy i.e. the construction and manufacturing sectors. Furthermore, the boards should be concerned with the regulation of engineering practice, not products. They should set standards for practice of engineering not for production of goods. Product standards are the jurisdictions of other relevant agencies. In the instance of the construction sector, some of the agencies that regulate the construction product are shown on Table 3.

Number 5 for KETRB and number 7 for EBK are legitimate regulatory duties but taking control of internship creates a monopolistic management of the qualification process that may then create conflicts with actors in other jurisdictions.

Table 3: Regulatory agencies in the construction sector

Regulator	Mandate
Communication Authority of Kenya information	To approve projects concerning the construction of and communication related infrastructure
County Governments	To issue Development Permission and approvals under physical planning Act To issue Building approvals under the building code

Energy Regulatory Commission	To approve any construction of infrastructure in the energy sector
National Environmental Management construction projects Authority	To issue Environmental Impact Licence for
National Construction Authority	To promote and ensure quality assurance in the construction industry To encourage the standardisation and improvement of construction techniques and materials To accredit and register contractors and regulate their professional undertakings To accredit and certify skilled construction workers and construction site supervisors
construction	To develop and publish a code of conduct for the industry

Whereas the overlaps in Vignette I reveal inconsistency in the development of regulatory law, the overlaps in Vignette II expose duplicity. For instance, in the case of occupational safety and health three agencies (EBK, KETRB and NCOSH) will draw money from the exchequer to implement the requirements of the Occupational Safety and Health Act. In Vignette I, inconsistency led to legal wrangles, here inconsistency has led to duplicity and potential waste of public funds.

V. THE CONCEPT OF REGULATORY QUALITY

From the empirical evidence on the practice of implementation of engineers' regulation, it is possible to evaluate the regulatory framework and establish its quality mark. Arndt et al. (2016) see regulation as an essential instrument for governments to attain policy objectives. In the case of regulation of engineering professions in Kenya, the positive premise is that the government wants to achieve public interest by ruling out market imperfections and presenting the consumer of engineering services with a standardized service. This will ensure a series of public benefits.

According to Arndt et al. (2016), if regulation is designed and implemented well, it can promote economic growth, increase social welfare, and enhance the quality of life. This would engender high quality; conversely low quality is associated with regulation that is not well designed and implemented. Therefore, quality matters in regulation. Quality is associated with the notion of good governance.

What is regulatory quality? This term was introduced in the literature of regulation by the OECD. According to OECD (2015) regulatory quality concerns "enhancing the performance, cost effectiveness, and legal quality of regulation and administrative formalities". From this definition we can see regulatory quality as a policy concept that can be applied as a guiding principle in the reform of regulations. Our scope here is limited to the last aspect of quality. Nevertheless, the notion of regulatory quality covers process, concerned with how regulations are developed and enforced, and the outcomes. Under outcomes regulatory quality seeks to achieve:

- Regulations that are effective at achieving their objectives,
- Regulations that are efficient (do not impose unnecessary costs),
- Regulations that are coherent (when considered within the full regulatory regime)
- Regulations that are simple (regulations themselves and the rules for their implementation are clear and easy to understand for users).

In this context we are focusing on the aspect of coherence in evaluating the quality of regulation of the engineering professions in Kenya.

The principles of regulatory quality were first laid down in the 1995 OECD's Recommendation of the Council on Improving the Quality of Government Regulation that provided a Reference Checklist for Regulatory Decision Making where the principle of consistency was included (see OECD 2021). One of the stated attribute quality regulation should have is to be "consistent with other regulations and policies". Since then, regulatory quality has featured a lot in many OECD documents on regulation and governance where the principle of consistency has been underscored. Follow up documents include:

- The 1997 OECD Report on Regulatory Reform (OECD 1997)
- The 2005 Guiding Principles for Regulatory Quality and Performance (OECD 2005)
- The 2012 Recommendation of the Council on Regulatory Policy and Governance (OECD 2012)

In the 2012 Recommendation of the Council on Regulatory Policy and Governance, for instance, recommendation number 10 calls upon OECD countries to identify cross-cutting regulatory issues at all levels of government and "promote coherence between regulatory approaches and avoid duplication or conflict of regulations". This is a reiteration of the principle of consistency.

The principle of consistency has been replicated elsewhere. For instance, the principle of consistency is included in the Regional Charter for Regulatory Quality for the Middle East and North Africa (MENA) region. The charter is a non-binding set of policy framework that MENA countries may rely on to integrate principles of regulatory quality into their policy-making process. One of the principles included in the 8 points document is that regulations must be "consistent with other regulations and policies".

The principle of consistency is one of the things lacking in the design of regulatory tools in Kenya as demonstrated by the empirical evidence above. It is one of the items that must be mainstreamed in the regulatory policy making in the country.

VI. WHOLE-OF-GOVERNMENT APPROACH

Whole-of-Government Approach (WGA) is one of the contemporary reform initiatives that seek to improve performance of public management institutions, especially in Anglo-Saxon countries (see Christensen and Lægreid 2007). In its E-Government Survey of 2012, the UN defined whole-of-government as "the movement from isolated silos in public administration to formal and informal networks". On the other hand, Hood (2005) see whole-of-government concept as a new label for the old doctrine of coordination in public administration.

According to Ling (2002) whole-of-government is an umbrella term referring to government's initiatives meant to address the problem of increased fragmentation of the public sector with the main objective to increase coordination among other things. Further WGA can be used for boundary management in the policy sector. Colgan, Kennedy and Doherty (2014 p 5) in their primer on implementing whole of government approaches noted that:

"In complex policy implementation, the boundaries between Government departments, between policy-makers and implementation bodies, and between levels (national and local, policy-makers and front-line personnel, administrative and professional personnel) must be managed if implementation is to be effective".

WGA is one of the administrative procedures that can be used to mainstream consistency in the construction of regulatory statutes in Kenya since it engenders coordination and boundary management that seem to be lacking in government institutions. WGA has been applied to regulatory reforms (see Christensen and Lægreid 2006b). For instance, when Mexico was facing inconsistent and overlapping regulations (Malyshev n.d.), it applied WGA to resolve this problem by developing a regulatory policy framework (OECD 2014).

VII. CONCLUSION: TOWARD REGULATORY POLICY FRAMEWORK

Regulatory policy refers to the rules, processes, and institutions put in place for designing, implementing, and evaluating regulations (OECD, 2015). Regulatory policy has been championed as key element of public sector reform in the OECD countries. Its objective is to ensure that regulations and regulatory frameworks are: justified, of good quality and fit for purpose (OECD 2014). This would ensure regulations achieve public interest and support economic development. In terms of public governance, regulatory policy helps shape the relationship between the state (regulator), the citizen (consumer) and businesses (regulatee) (OECD 2014).

Mexico is one of the OECD countries that has developed a formal policy on "better regulations" by enacting administrative procedure law (OECD 2014). This law established a national agency to oversee regulatory reform. The policy defines the responsibilities of the national oversight body, the line ministries and the regulators. Additionally, it established tools for regulatory improvement including the regulatory impact assessment. Ex ante regulatory impact assessment would be instrumental in bringing up and eliminating potential areas of inconsistency, overlap and fragmentation (Malyshev 2006).

In Kenya the act of deregulation and re-regulation of engineers' practice may be construed as regulatory reform. Therefore the repeal of the existing engineers Act and replacement by two new Acts was an attempt at regulatory improvement that was being conducted without the guidance of any policy framework. Guided by the principles of regulatory quality, the practice of whole-of-government approach and the experience of Mexico, Kenya can now develop its own regulatory policy framework that would help in ruling out inconsistency, overlap and fragmentation and hence achieve coherence, and coordination of its regulatory governance. This would be instrumental for achieving its developmental goal of becoming "a newly-industrializing, middle income country providing a high quality of life to all its citizens in a clean and secure environment".

Conflict of Interest Statement

Author wishes to state that there is no conflict of interest.

REFERENCES

1. Arndt, C., Hermanutz, S., Kauffmann, C. and Schultz, R. (2016). Building Regulatory Policy Systems in OECD Countries. OECD Regulatory Policy Working Papers, (5), OECD Publishing, Paris.
2. APEA (n.d.) Engineering our economic prosperity: The value added by professional engineers to the Australian economy. Association of Professional Engineers Australia.
3. Cebr (2016) Engineering and economic growth: a global view. A report by Cebr for the Royal Academy of Engineering, September 2016.
4. Colgan, A., Kennedy, L.A. and Doherty, N. (2014) A Primer on implementing whole of government approaches. Dublin: Centre for Effective Services.
5. Christensen. T. and Lægreid, P. (2007) The Whole-of-Government Approach to Public Sector Reform. Public Administration Review, 67(6);1059-1066.
6. Christensen. T. and Lægreid, P. (2006a) Rebalancing the State: Reregulation and the Reassertion of the Centre. In Autonomy and Regulation: Coping with Agencies in the Modern State, edited by Tom Christensen and Per Legreid, 359-80. Cheltenham, UK: Edward Elgar.
7. Christensen. T. and Lægreid, P. (2006b) The Whole-of-Government Approach– Regulation, Performance, and Public-Sector Reform. Stein Rokkan Centre for Social Studies, Working Paper 6 - 2006.
8. Haines F, Gurney D (2003) The Shadows of the Law: Contemporary Approaches to Regulation and the Problem of Regulatory Conflict. Law and Policy 25, 353.
9. Hood, C. (2005) The Idea of Joined-Up Government: A Historical Perspective. In Joined-Up Government, edited by Vernon

Bogdanor, chap. 2. Oxford: Oxford University Press.
10. Kumar, A. 1995. Colonial Requirements and Engineering Education: The Public Works Department, 1847-1947. In Macleod, R. and Kumar, D. (eds.). Technology and the Raj: Western Technology and Technical Transfers to India 1700-1947. Delhi: Sage.
11. Ling, T. 2002. Delivering Joined-Up Government in the UK: Dimensions, Issues and Problems. Public Administration 80(4): 615-642.
12. Malyshev, N. (n.d.) The Evolution of Regulatory Policy in OECD Countries.
13. Malyshev, N. (2006) Regulatory Policy: OECD Experience and Evidence. Oxford Review of Economic Policy, 22(2); 274-299.
14. Naiyaga, I. (2011) Engineers' role in economic growth and financial stability. Speech by Mr Inia Naiyaga, Deputy Governor of the Reserve Bank of Fiji, at the Fiji Institute of Engineers' (FIE) workshop, Suva, 2 June 2011.
15. OECD (1997) The OECD Report on Regulatory Reform Synthesis Organisation for Economic Co-operation and Development Paris, 1997.
16. OECD (2005) OECD Guiding Principles for Regulatory Quality and Performance
17. OECD (2009) Indicators of Regulatory Management Systems. Regulatory Policy Committee, 2009 Report.
18. OECD (2011), Regulatory Policy and Governance: Supporting Economic Growth and Serving the Public Interest, OECD Publishing. Http://dx.doi.org/10.1787/9789264116573-en.
19. OECD (2012) Recommendation of the Council on Regulatory Policy and Governance.
20. OECD (2014) Regulatory Policy in Mexico Towards a Whole-of-Government Perspective to Regulatory Improvement. Paris: OECD.
21. OECD (2015), OECD Regulatory Policy Outlook 2015, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264238770-en.
22. OECD (2021) Recommendation of the Council on Improving the Quality of Government Regulation, OECD/LEGAL/0278.
23. Radaelli, C.M. and Meuwese, A.C.M. 2009. Better regulation in Europe: between public management and regulatory reform. *Public Administration*, 87: 639–654.
24. Republic of Kenya (2007a) Kenya Vision 2030: A Globally Competitive and Prosperous Kenya. Nairobi: Republic of Kenya.
25. Republic of Kenya (2007b) The Occupational Safety and Health Act. The National Council for Law Reporting, Nairobi.
26. Republic of Kenya (2009) Engineers Registration Act. Revised Edition. The National Council for Law Reporting, Nairobi.
27. Republic of Kenya (2012a) Engineers Act No. 43 of 2011. Revised 2012. Nairobi: The National Council for Law Reporting
28. Republic of Kenya (2012b) Kenya Gazette Supplement: Acts, 2012. Nairobi: Government Printer.
29. Republic of Kenya (2016) Kenya Gazette Supplement: Acts, 2016. Nairobi: Government Printer.
30. UNESCO (2021) Engineering for Sustainable Development. Paris: The United Nations Educational, Scientific and Cultural Organization and International Center for Engineering Education (ICEE).
31. Wilkins, R. (1993) The Problems of Duplication and Inconsistency of Regulation in a Federal System. In Business Regulation and Australia's Future, edited by Peter Grabosky and John Braithwaite. Canberra: Australian Institute of Crimin.