

**A PUBLIC POLICY REVIEW OF TECHNICAL REGULATORY REFORM: THE
CASE FOR THE AFRICAN CONTINENT**

by

Elsabe Jaatjie Steyn

Submitted in partial fulfilment of the requirements for the degree
PHILOSOPHIAE DOCTOR in Public Affairs
in the Faculty of Economic and Management Sciences
University of Pretoria
Pretoria

Supervisors: Prof Dr E J van Rooyen
Dr K B Moeti

2010



Declaration

I hereby declare that this is my original work both in form and content and that wherever I have referred to the work of other authors, that has been duly acknowledge.

EJ Steyn
85614352

Acknowledgements

I acknowledge with gratitude the support of my family and friends during my Philosophiae Doctor studies.

I also wish to express my appreciation for the guidance and assistance provided by Prof J.O. Kuye during the conceptualisation and Prof E.J. van Rooyen during the writing of the Philosophiae Doctor thesis.

I also wish to state my appreciation for the knowledge and insight gained through the lectured course work that was provided by members of the School of Public Management and Administration of the University of Pretoria during the first two years of my studies in partial fulfilment of the requirements for this qualification.

ABSTRACT

Tariff and non-tariff barriers to trade are measures that are put in place in a country to which an exporter wants to export to. These barriers make it difficult for a new manufacturer to export their products. These measures may be considered undesirable in the context of world trade, because they restrict the flow of goods and are detrimental to the consumer because they drive prices up.

The Uruguay Round of multilateral trade negotiations significantly reduced tariff barriers to trade. During the same round, the World Trade Organisation Agreement on Technical Barriers to Trade was negotiated with a view to ensure that countries use technical regulations (non- tariff barriers) for no other purpose than to protect the health and safety of the public and the environment. Many of the developing countries have not yet been able to take full advantage of this agreement.

It is often difficult and costly for exporters from developing countries to meet the technical requirements of standards and technical regulations and to provide evidence of compliance. This stems from a lack of resources available to developing countries to participate and influence the work of international standards-setting bodies serving as a basis for technical regulation. The absence of internationally recognised national infrastructure for standardisation, accreditation and metrology also prevents acceptance of African products in export markets.

Various regions such as Asia and Europe have initiated technical regulatory reforms to align their technical regulations with the requirements of the World Trade Organisation requirements and to establish appropriate technical institutions. These reforms are also expected to assist member countries to gain a competitive edge in global trade ensuring increased gains from trade liberalisation initiatives which provide fair market access for goods and services.

Africa appears to be lagging behind the abovementioned regions. The current technical regulatory system in Africa is still too inefficient and ineffective to position African countries competitively. The technical institutions are underdeveloped and under funded and can not support market assess and thus economic development.

It is in this context that this study is conducted to explore the technical regulatory framework in Africa against the background of reforms in Asia and Europe with a view of providing public policy recommendations for the establishment of an African technical regulatory system supported by appropriate institutional capacity that may expedite economic recovery for the continent.



Table of contents

Declaration	ii
Acknowledgements	iii
Abstract	iv
List of tables	xiv
List of figures	xvi
List of abbreviations	xvii
Terminology	xix

Chapter 1: Introductory perspectives on policy and state institutional reform on the African continent

1.1	Introduction	1
1.2	Doing business in Africa	2
1.3	Policy on reform in Africa	4
	1.3.1 Structural reform	5
	1.3.2 Capacity reform	6
	1.3.3 Service delivery reform	6
	1.3.4 African peer review mechanism	7
1.4	State institutional capacity in Africa	10
1.5	Public policy reform and its impact on state institutions	11
1.6	Technical regulatory reform	14
1.7	African economic strategies that are relevant to technical infrastructure reform	16
1.8	Compliance cost for African entrepreneurs	18
1.9	Technical infrastructure institutional capacity to support African trade	21
1.10	Conclusion	24



Chapter 2: Research Methodology

2.1	Introduction	26
2.2	The research problem	26
2.3	The use of research	28
2.4	Types of research approaches	28
2.5	Qualitative research design	30
2.5.1	Content analysis method	30
2.5.2	Grounded theory study method	31
2.5.3	Phenomenological study method	31
2.5.4	Ethnography study method	31
2.5.5	Case study method	32
2.6	Qualitative research sources	34
2.7	Need for the study	35
2.8	Nature of the study	38
2.9	The problem statement and the objectives of the study	39
2.9.1	The research questions	41
2.10	Methodology	44
2.11	Limitations on the scope of the study	45
2.12	Conclusion	46

Chapter 3: A review of the relevant literature on public administration

3.1	Introduction	47
3.2.	The boundaries of Public Administration	48
3.3	Public Administration	48
3.2.1	The generic functions of Public Administration	49
3.2.1 (a)	Policy-making	50
3.2.1 (b)	Organising	50
3.2.1 (c)	Staffing	51



3.1.2 (d) Directing and co-ordinating	51
3.1.2 (e) Reporting	51
3.1.2 (f) Budgeting	52
3.2.2 The historical development of Public Administration	52
3.2.3 Summary paragraph	55
3.4 Understanding public policy	56
3.5 Policy types and policy levels	59
3.6 Public policy-making models	61
3.6.1 The rational comprehensive model	61
3.6.2 The incrementalist model	61
3.6.3 The mixed scanning model	62
3.7 Setting policy agendas	64
3.8 Policy-making processes	65
3.7.1 Internal factor	66
3.7.2 External factors	66
3.9 Models for analysing policy-making processes	67
3.9.1 The elite/mass model	67
3.9.2 The group model	67
3.9.3. The institutional model	68
3.9.4 The systems model	68
3.10 Approaches to policy analysis	69
3.10.1 Policy content analysis	70
3.10.2 Policy system analysis	71
3.10.3 Policy issue analysis	71
3.10.4 Policy outcome analysis	71
3.10.5 Policy value analysis	71
3.11 Reasons for and advantages of public policy analysis	72
3.12 The public policy analysis process	80
3.12.1 Formulation	80
3.12.2 Search	84
3.12.3 Forecasting	85

3.12.4 Modelling	87
3.12.5 Synthesis	88
3.13 Policy implementation	92
3.14 Improving public policy in developed and developing countries	94
3.15 Public policy in Africa	97
3.16 State institutions	100
3.17 Models of institutional theory	101
3.18 State institutional development	103
3.19 Institutional development in developing countries	104
3.20 Institutional development in Africa	105
3.21 Conclusion	107

Chapter 4: A case study review of international and regional trends in technical regulatory reform

4.1 Introduction	109
4.2 International technical regulatory reform	110
4.2.1 The World Trade Organisation Agreement on Technical Barriers to Trade	110
4.2.2 Committee on Technical Barriers to Trade	118
4.2.3 Tri annual reviews of the World Trade Organisation Agreement on Technical Barriers to Trade	119
4.2.4 The relationship between standards and technical regulations	121
4.2.5 Influencing standards development and technical regulations	123
4.2.6 Technical regulations from country to country	126
4.2.7 Equivalence of national standards	127
4.2.8 More international standards for technical regulations	128
4.2.9 Conformity assessment requirements for technical regulations and standards	129
4.2.9 (a) Quality management systems	131
4.2.9 (b) Product certification	132

4.2.9 (c) Testing reports	137
4.2.9 (d) Inspections	138
4.3 Regional technical regulatory reform	140
4.3.1 Organisation for Economic Cooperation and Development	141
4.3.1 (a) Defining the problem correctly	145
4.3.1 (b) Justifying government action	146
4.3.1 (c) Ways of intervening	147
4.3.1.(d) Legal base for regulation	147
4.3.1 (e) Appropriate levels of government action	148
4.3.1 (f) Assessing the costs and benefits of regulations	148
4.3.1 (g) The distribution of effects of technical regulations across society	149
4.3.1 (h) Clarity, consistency and accessibility to users	149
4.3.1 (i) Consulting all interested parties	150
4.3.1 (j) Achieving compliance	151
4.3.2 Asian Pacific Economic Community	151
4.3.2 (a) Performance-based technical regulations	155
4.3.2 (b) Referencing voluntary standards	156
4.3.2 (c) Alignment with international standards	157
4.3.2 (d) Equivalency	157
4.3.2 (e) Conformity assessment requirements	158
4.3.2 (f) Types of conformity assessment	159
4.3.2 (g) Choosing the appropriate conformity assessment requirements	161
4.3.2 (h) Recognising the results of conformity assessment activities	161
4.3.2 (i) Regulatory safety nets	162
4.3.3 Comparison of the Asian Pacific Economic Community and the Organisation for Economic Cooperation and Development principles and guides	163

4.3.4	Implementation of technical regulatory guidelines	166
4.3.5	Southern African Development Community	167
4.4	Internationally recognised institutions	172
4.4.1	Three key technical institutions	173
4.4.2.	Metrology	175
4.4.3	Standardisation	177
4.4.4	Accreditation	181
4.5	Institutional capacity in Southern Africa	184
4.5.1	Metrology	187
4.5.2	Standardisation	189
4.5.3	Accreditation	191
4.5.4	Investment in technical institutions in the Southern Africa Development Community	191
4.5.5	South Africa	193
4.6	Conclusion	198

Chapter 5: An analysis of technical regulatory reform and state institutional capacity: Implications for an African technical regulatory framework

5.1	Introduction	201
5.2	Technical regulatory reform	201
5.3	Non-discrimination	204
5.4	Transparency	205
5.5	Avoiding unnecessary trade-restrictiveness	206
5.6	Use of internationally harmonised measures	207
5.7	Conformity assessment	208
5.8	Impact and risk assessment	210
5.9	Technical infrastructure capacity in Africa	211
5.10	Technical infrastructure co-operation	219
5.10.1	Metrology	219
5.10.2	Standardisation	220

5.10.3 Accreditation	221
5.11 South Africa	222
5.12 Conclusion	223

Chapter 6: Recommendations for an African policy approach to technical regulatory reform

6.1 Introduction	226
6.2 Recommendations	227
6.2.1 Recommendation 1: Develop an African technical regulatory reform policy	228
6.2.1 (a) Introductory paragraph	228
6.2.1 (b) Recommendation	230
6.2.2 Recommendation 2: Establish institutional arrangements for an African technical regulatory framework	232
6.2.2 (a) Introductory paragraph	232
6.2.2 (b) Recommendation	233
6.2.3 Recommendation 3: Establish and strengthen coordination of quality activities in the sub-region	235
6.2.3 (a) Introductory paragraph	235
6.2.3 (b) Recommendation	236
6.2.4 Recommendation 4: Strengthening national institutional capacity in the area of standards, conformity assessment and metrology	239
6.2.4 (a) Introductory paragraph	239
6.2.4 (b) Recommendation	240
6.2.5 Recommendation 5: Provide specific companies with technical assistance	240
6.2.5 (a) Introductory paragraph	240
6.2.5 (b) Recommendation	241
6.3 Summary	243



6.4	Conclusion	246
	References	251

List of tables

Table 1.1: Interindustry distribution of quality expenditure	19
Table 1.2: Export related quality and compliance expenses	20
Table 1.3: Annual budgets for standards development in 2002	22
Table 3.1: Approaches to policy analysis	70
Table 3.2: Differences between goals and objectives	82
Table 3.3: Checklist for identifying new and relevant goals and objectives	82
Table 3.4: Three approaches to forecasting	87
Table 3.5: Stages in the policy analysis process	90
Table 3.6: Phases for conducting policy analysis	91
Table 4.1: Organisation for Economic Co-operation and Development checklist	144
Table 4.2: Asian Pacific Economic Community technical regulatory checklist	155
Table 4.3: Summary of the metrology infrastructure costs, financing, needs and planning considerations	179
Table 4.4: Summary of the standards infrastructure costs, financing, needs and planning considerations	182
Table 4.5: Summary of the accreditation infrastructure costs, financing, needs and planning considerations	185
Table 4.6: Developmental stages for metrology institutes and current status of SADC countries	189
Table 4.7: Developmental stages for national standards bodies and current status of SADC countries	191
Table 4.8: Estimated costs of compliance on selected farms in South Africa for selected standards	198
Table 4.9: Financial support by the South African government as percentage of turnover	200
Table 4.10: Turnover of the South African technical infrastructure institutions	200



Table 5.1: Notifications of the European Union rapid alert system for food and feeds concerning African exports - January 2005 to December 2006	216
Table 5.2: United States Food and Drug Administration import refusals from Africa - January 2005 to December 2006	217
Table 5.3: Overview of the technical infrastructure situation in Africa	221



List of figures

Figure 4.1: The building blocks of a technical infrastructure system and the linkages between metrology, standardisation and accreditation	217
Figure 5.1: Supporting technical infrastructure	221

List of abbreviations

APEC	Asia Pacific Economic Community
APRM	African Peer Review Mechanism
BIPM	Bureau International des Poids et Mesures (International Bureau of Weights and Measures)
CIPM	International Committee for Weights and Measures
EAC	East African Community
ECOWAS	Economic Community of West African States
EU	European Union
GATT	General Agreement on Tariffs and Trade
IAF	International Accreditation Forum
IEC	International Electrotechnical Commission
ILAC	International Laboratory Accreditation Co-operation
IMF	International Monetary Fund
ISO	International Organisation for Standardisation
NEPAD	New Partnership for Africa's Development
NMISA	National Metrology Institute of South Africa
UEMOA	West African States
UNIDO	United Nations Industrial Development Organisation
OECD	Organisation for Economic Co-operation and Development
SABS	South African Bureau of Standards



SADC	Southern African Development Community
SADCA	SADC Accreditation Co-operation
SADCMET	SADC Metrology Co-operation
SADCSTAN	SADC Standardisation Co-operation
SANAS	South African National Accreditation System
SI	Systeme International
TBT	Technical barriers to trade
WTO	World Trade Organisation
WB	World Bank

Terminology

Accreditation

Means a procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific conformity assessment tasks (ISO/IEC Guide 17000: 2004).

Asia Pacific Economic Community

Means a forum for 21 Pacific Rim countries to cooperate on regional trade and investment liberalisation and facilitation (APEC, 2009).

Conformity assessment

Means any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled (ISO/IEC Guide 17000: 2004).

Cost of transformation

Means the cost associated with a process of profound and radical change that orients an institution or a business in a new direction and takes it to an entirely different level of effectiveness (Business Dictionary, 2009).

Cost of transactions.

Means the cost associated with exchange of goods or services and incurred in overcoming market imperfections. Transaction costs include safety, quality, and durability (Business Dictionary, 2009).

Metrology

Means measurement through the implementation of a harmonised system which comprises the International System of Units adopted by the General Conference on Weights and Measures, which is the international authority on the metric system (ISO Guide 99: 2007).

Non-tariff barriers

Means trade barriers that restrict imports in forms other than tariff (WTO, 2006).

Organisation for Economic Co-operation and Development

Means an international organisation of 30 countries that accept the principles of representative democracy and free-market economy (OECD, 1995).

Public Administration

Means a study of the relationships between government and the society it governs as well as the public policies that government develops and implements to respond to social needs (Shafritz and Russell, 2005:5-22).

Public policy

Means a combination of goals, decisions, commitments and actions directed towards the implementation of particular outcomes that are deemed to be in the public interest (Birkland, 2005:19).

Public policy analysis

Means a social sciences process applied to investigate public policy used by policymakers to resolve public policy problems (Dunn, 1981:35).

Southern African Development Community

Means an inter-governmental organisation headquartered in Gaborone, Botswana with the goal to further socio-economic cooperation and integration as well as political and security cooperation among 15 southern African states (SADC, 2004).

Standard

Means a document approved by a recognised body that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It

may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method (ISO/IEC Guide 2: 2004).

Standardisation

Means the activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context (ISO/IEC Guide 2: 2004).

Tariffs

Means a duty imposed on goods when they are moved across a political boundary (Wikipedia, 2009).

Technical infrastructure

Means the totality of the institutional framework required to formulate, issue and implement standards (e.g. to establish with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context) and to provide associated evidence of compliance (e.g. the relevant mix of inspection, testing, certification, metrology and accreditation) in order to improve the suitability of products, processes and services for their intended purposes, prevent barriers to trade and facilitate technological co-operation (ISO/IEC Guide 2: 2004).

Technical regulation

Means a document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method (WTO, 2006).

CHAPTER 1

INTRODUCTORY PERSPECTIVES ON POLICY AND STATE INSTITUTIONAL REFORM ON THE AFRICAN CONTINENT

1.1 INTRODUCTION

African countries have been repositioning their economies for sustainable growth over the last two decades. Lately, the repositioning has been guided by various tailor-made and not one-size-fit-all policies including fiscal and monetary policies. These policies promote domestic investment, employment generation and growth. As a result of these policy interventions economic growth increased steadily, albeit from a low base of 2,1% from 1985 to 1994, to an average of 3,7% from 1995 to 2002, and from 4,1% in 2003 to 5,8% in 2007 (ECA, 2007). The Economic Report on Africa 2008 (ECA, 2008) expected Africa's grow rate to remain high in 2008. Africa as a continent, however, remains the most underdeveloped region of the world with 33 of the world's least-developed countries as classified by the United Nations.

The sub Saharan Africa region experienced the slowest growth of any region in the world. Africa remains marginalised as demonstrated by the fact that its share in global trade has declined since the 1980s despite an estimated fivefold increase in overall world trade over the last two decades (Grobelaar, 2006:36). This marginalisation has been accompanied by a widening social gap as income levels have diverged across African countries. In 1995, African countries' gross domestic product per capita ranged from \$102 to \$769 a year compared with developed countries which have gross domestic product per capita of \$15 892 to \$43 600 a year. The gross domestic product per capita of Egypt, Botswana, Mauritius and South Africa alone falls in a higher range of \$770 to \$15 891 a year (IMF, 2003:96).

The widening of the abovementioned social gap also correlates with limited state institutional capacity. A 2003 International Monetary Fund Report on the World Economic Outlook: Growth and Institutions observes that country-specific income differences, e.g. gross domestic product per capita, appear to be closely correlated with indicators of state institutional quality (IMF, 2003:95-127). Countries with low economic growth and low per capita income often have limited state institutional capacity. Conversely, countries with high growth and high per capita income often have strong state institutional capacity. The report also confirms that economic growth will need to be supported by organisational reform which aims to strengthen institutional capacity in a systematic and orderly manner.

Lately, researchers have also found that conventional growth factors e.g. labour, physical and human capital, do not fully explain the slow growth experience of Africa. Recent research considered how the lack of state institutional capacity impacts on economic growth. It was found that state institutional capacity affects growth because it impacts directly on the cost of transformation and the cost of transactions. Weaker state institutional capacity often means higher transaction cost, which translates into higher transformation cost, making a country uncompetitive and the society less productive (Aron, 2000:99-135).

1.2 DOING BUSINESS IN AFRICA

African businesses are impacted on negatively, as illustrated by a World Bank report on *Doing Business in 2005* (World Bank, 2005:3) by the relatively higher costs of doing business in poor countries. The report confirms that administrative costs in poor countries can be as much as three times higher and bureaucratic procedures and associated delays twice higher than that of richer countries. It is these high costs that deter businesses from investing in Africa. These costs also

put serious obstacles in the way of African entrepreneurs, who can create jobs and boost economic growth.

A business climate survey on regional integration commissioned by the Association of Southern African Development Community (SADC) Chamber of Commerce and Industry in 2004 concurred that the private sector supported the simplification and improvement of African countries' regulatory frameworks as well as improvement in infrastructure and institutional capacity. Thomas Friedman (2005: 398 – 404) confirms the importance of infrastructure because it connects countries with the global trade system in a world that is getting smaller. He also highlights the need for a regulatory environment that makes it easy for the private sector to do business and to remain competitive if market circumstances change.

A number of countries in Africa are starting to make policy decisions with regard to regulatory reforms aimed at establishing infrastructure capacity to support economic development and remove bureaucratic red tape, which impacts negatively on enterprise development. As a result, the legislative and regulatory environment in Africa is steadily becoming more supportive and conducive to business. The gains are twofold for business. **Firstly**, businesses spend less time and money dealing with regulations and **secondly**, they have more time and money available for producing and marketing their products and services (Luiz, 2006:27).

To conclude, although the cost of doing business in Africa remains relatively high because of the abovementioned higher administrative costs and delays in terms of bureaucratic procedures there are considerable profits to be made in terms of various business opportunities on the continent. The average rate of return on investments in Africa is twice higher than in Asia and four times higher than in the G7 countries (Grobbelaar, 2006:35).

1.3 POLICY ON REFORM IN AFRICA

Over the past two centuries there have been continuous demands on African states for policy reform to re-assess the service delivery responsibilities of their governments through regulatory reform, privatisation, outsourcing and the competitive provision of services. The main reasons for the policy reform demands were impatience with slow and inefficient state organisations, overregulation by the state and the lack of trust that the state can deliver effective services. Another reason is the pressure from public choice theory that services delivered through the private sector operating in a competitive environment will always outperform state service delivery operating in a monopolistic environment. Additionally, these policy reforms in specifically developing and less-developing countries were conditional in terms of World Bank (WB) and International Monetary Fund (IMF) support (Cavanagh and Mander, 2004:60-63).

International organisations such as the International Monetary Fund and the World Bank have played a substantive role in the diffusion of policy reform ideas inspired by the neo-liberal ideology (Nef, 2003:523-535). Nef (2003) notes that developing states are often on the receiving end of this externally induced transplantation of policy reform ideas from other regions. Olsen (2006) highlights the problem of the transplantation of ideas that are not informed by a thorough understanding of the political, social, economic and cultural characteristics of a region or the individual countries in the region.

The following three policy reform phases, as diffused by the above mentioned international organisation, can be identified in Africa: the structural reform phase, the capacity-building phase and the service delivery reform phase. These phases are considered with a view to identify their impact on Africa. It is important to note that different phases of reform often overlap and sometimes elements of one reform phase spill over into the next reform phase.

1.3.1 Structural reform

The structural reform phase of policy reform came about because of the various macroeconomic and fiscal reforms that were required in terms of the structural adjustment programmes of the World Bank and the International Monetary Fund. These programmes were aimed at rationalising government to make it more efficient and economical. They include activities such as divesting non-core operations and reducing staff numbers.

Countries approached this phase differently. Some embarked on serious reform programmes. Others implemented slower and less far-reaching programmes. In general, both approaches, however, impacted negatively on service delivery and capacity, including institutional capacity. Where some gains were made, these were reversed because of the difficulty to sustain the structural adjustment interventions, the fact that the strategies were not linked to improvement of service delivery and because some interventions undermined capacity-building for service delivery. Other problems were the general lack of reform ownership and commitment, the absence of political support and lastly, limited political and public pressure for the improvement of service delivery (OECD, 2002).

A 2001 World Bank report which evaluated the impact of World Bank assistance on the state capacity found that these efforts were largely ineffective and that it impacted negatively on state capacity. One of the reasons for these failures was excessive technocratic approaches to institutional design. In addition, rigid lending instruments ignored the complexity of institutional change. Governance structure reform was also left far too late in the reform process (World Bank, 2001).

1.3.2 Capacity reform

The capacity reform phase of policy reform came about because of the problems with the structural reform phase. There was a shift away from rationalisation as it became clear that weak capacity is the reason for poor service delivery. The World Bank and United Nations Development Programmes included broad capacity-building programmes such as enhancing staff skills, improving management systems and structures as well as improving the work environment.

Apparently this phase was also not a success and made no impact in terms of organisational performance to improve delivery of services. The programmes were often fragmented, piecemeal and donor-driven. They were also biased towards supplying equipment and training. In addition, the fact that the moral was low and discipline limited contributed to the problem (OECD, 2002). The World Bank report (World Bank, 2001) found a lack of focus on institutional performance and the wrong sequencing of interventions also hampered sustainable institutional improvements.

1.3.3 Service delivery reform

The service delivery phase of policy reform diffused by the World Bank and International Monetary Fund appears to be prominent in many developing countries. The focus is on the improvement of service delivery because the majority of public and political leaders are of the opinion that the first two phases have contributed to severe social and political concerns.

Pressure from the public in terms of increasing demands for transparency, accountability and integrity is also a driver. In addition, the focus has shifted from market-led economy growth to private sector-led economic growth. The need to pursue an integrated systems approach providing for sector-wide support in

order to facilitate good service delivery is also acknowledged by both administrative and political leaders (World Bank, 2001).

Expectations are still high that this phase may result in sustainable capacity including institutional capacity that can provide sustainable service delivery. This phase is, however, still dependent on donor funding. Some stakeholders are concerned that the old paradigms would reassert themselves and that the new approach of the World Bank and International Monetary Fund is limited to a re-labelling exercise from structural reform to service delivery (Cavanagh and Mander, 2004:55-74). Others are, however, encouraged because developing countries increasingly appear to be taking ownership of the assistance in order to channel them more effectively in terms of the needs of developing countries (OECD, 2002).

1.3.4 African Peer Review Mechanism

In 2003, Africa introduced the African Peer Review Mechanism as a key element of the New Partnership for Africa's Development to guide and facilitate public policy reform. The African Peer Review Mechanism is an instrument that can be used by member countries of the African Union to do voluntary self-assessment of their policies and practices with a view to conform to agreed political, economic and corporate values and standards. The African Peer Review Mechanism therefore is an important tool that will be used by African governments to foster the adoption of policies, standards and practices and the creation of appropriate institutional capacity, which may lead to political stability, high economic growth and sustainable development. The African Peer Review Mechanism may also support accelerated sub-regional and continental economic integration as it facilitates the sharing of experiences and reinforcement of successful and best practice (NEPAD, 2003).

The design of the African Peer Review Mechanism provides for a Participating Heads of State and Government Committee as the supreme political authority. This committee manages and directs the African Peer Review Mechanism through a panel of Eminent Persons that are appointed as individuals.

The African peer review process in a review country has five stages. In the **first** stage the review country government does a background study, collects information and completes a detailed questionnaire. The **second** stage involves a visit by an African Peer Review Mechanism review team who consults the review countries' government, parliament and political parties as well as civil society. The **third** stage involves the preparation of a draft report by the African Peer Review Mechanism review team and discussion with the government of the review country for response. The **fourth** stage, which is crucial, involves the submission of the report to the Participating Heads of State and Government Committee for their consideration. At this stage, the Participating Heads of State and Government committee will support countries that want to rectify shortcomings. If countries, however, do not want to continue with rectification of shortcomings, a constructive dialogue process will follow. Only as a very last resort the Participating Heads of State and Government may inform the country by notice of their intention to take appropriate measures by a given date. The **last** stage involves the lodging of the report with regional and sub-regional organisations (NEPAD, 2003).

The four focus areas of the African Peer Review Mechanism are: democracy and political governance, economic governance and management, corporate governance and socio- economic development. For each area, there are objectives, standards, criteria and indicators. Each of the areas also deals with the issue of the availability of appropriate state organisational infrastructure. Questions are asked in terms of capacity, resources and functioning. The African Peer Review Mechanism thus includes the identification of state organisational

deficiencies and assessment of the needs for state organisational development and reform (Wissink and Melnyk, 2004:2-11).

Twenty-four countries have subscribed to be reviewed through the African Peer Review Mechanism and a few more have indicated their intention to join in the near future. Three countries, namely Ghana, Rwanda and South Africa, have completed their first reviews. Kenya and Nigeria have started with their reviews. Recently, countries recounted their experiences with the African Peer Review Mechanism. Many found that citizens in their countries do not understand the benefits of the African Peer Review Mechanism and that there often is public scepticism of government intention. There is a need for much dialogue among stakeholders to ensure support, buy-in and sustainability for the review process. Insufficient funding for the review process is problematic. The cost of a review is estimated at between \$1 million to \$2 million per country. Recommendations to improve the reviews are amongst others, to make the process simpler and customise the questionnaires to cater for domestic needs (NEPAD, 2006). One benefit of the African Peer Review Mechanism is that it creates a platform for national consultation on issues that never were subjected to consultation previously. In addition, it provides an opportunity for a government to educate its people and to involve them in decisions (SAIIA, 2006).

The biggest test for the effectiveness of the African Peer Review Mechanism is the extent of frankness and forthrightness of reports being published and the extent of the policy reform initiatives and action plans, including state institutional reform plans, emanating from them. Some stakeholders are questioning the voluntary nature of the African Peer Review Mechanism. Dr Bernard Kouassi, who was appointed chief executive of the African Peer Review Mechanism in January 2006, however, explains that the voluntary nature of the mechanism makes it a tool that can be used by governments without fear to reveal real issues, to discuss them constructively and publicly, with a view to find solutions.

Making it compulsory will make the African Peer Review Mechanism a policing institute that rewards and punishes (SAIIA, 2006).

1.4 STATE INSTITUTIONAL CAPACITY IN AFRICA

The importance of state institutional capacity to implement public policy has been recognised in the writings of Adam Smith and in the work of Douglas North (1990). They specifically focused their writings on the importance for state institutions to provide an enabling environment for economic development. Other research focused on sources of institutional differences across countries, how these institutions affect economic performance and the quantitative links between growth and state institutional capacity.

Government bureaucracies consist of state institutions that are responsible for the provision and delivery of public services. These state institutions are the vehicles through which governments deliver virtually every policy intervention. State institutions are important because they provide the institutional capacity that is needed to support, among other things, entry into global politics and the global economy. The identification of the full range of institutions that a state need is almost impossible. However, examples of key state institutions are health, education and infrastructure.

State institutions, including African state institutions, underwent dramatic transformations since the mid-nineteenth century. At that time the state used relatively unsophisticated methods to conduct its affairs. Today a vast and sophisticated apparatus is or should be available to deliver services to meet modern demands and needs of the public.

Institutional reform was examined by Brusson and Olsen (1993) in an attempt to better understand when reform occurs, why reform is necessary and what the effects of reform are. Brusson and Olsen (1993) established that institutional

reform occurs when a gap between institutional performance and institutional delivery is identified. The rationale for institutional reform comes from the basis that choices can be made in terms of institutional reforms with a view to improve operations and performance. They acknowledged that institutional reform has effects such as the reshuffle of power, re-legitimisation, education and democratisation. These effects may benefit certain actors while threatening others.

Brusson and Olsen (1993) identified the following four attributes of institutional reform. **Firstly**, that institutional reform consists of simple and clear principles rather than detailed descriptions. **Secondly**, that institutional reform attempts to bring order into a chaotic reality. **Thirdly**, that institutional reform introduces consistency in terms of values and perceptions. And **lastly**, that institutional reform is a process rather than immediate action with a promise of future benefits.

The above attributes are important and can also be applied when state institutional reform or development is considered. If it is found that there is a gap between state institutional performance and what it is expected to deliver, the reform process should be guided by clear principles. Problems such as possible rearrangement of power, re-legitimisation and democratisation, which may benefit certain actors while threatening others can be minimised if the reform process makes provision for an opportunity for all stakeholders to agree on values, perceptions and potential benefits.

1.5 PUBLIC POLICY REFORM AND ITS IMPACT ON STATE INSTITUTIONS

Public policy reform is a continuous process that occurs in countries to bring about change and transformation in the context of a country's specific needs and demands. From a state institutional capacity point of view, the African Peer

Review Mechanism offers the opportunity to African governments to direct and affect the necessary reform based on benchmarking with other African member countries. It also offers governments the opportunity to not repeat the mistakes made in terms of the structural adjustment and capacity-building phases. In addition, there may be a possibility for states to build on the activities of the service delivery phase.

Chandarasorn (1998) points out that the scope of any policy reform programme will have a direct impact on the successful implementation and adoption of such a programme. Often, if the scope of the policy reform programme is large, the implementation is more difficult and the possibility for successful implementation less likely. Therefore, the greater the scope, the more necessary is stakeholder support, including political and bureaucratic support, for the policy reform programme to succeed. The reason is that a substantial policy reform programme may impact on bureaucrats at various levels who may resist the changes or feel threatened by them.

The time needed to achieve institutional reform also impacts on the success of implementation. Generally, the greater the speed at which change is required the less likely the success. The reason is that change requires enough time to create an understanding to the reform receiver, to ease the perception of threat and to ensure stability. The problem with a time scale that is too long is the perception that it is less urgent and less important. Leadership that supports the institutional reform and that plans and monitors continuously and systematically will facilitate successful implementation (Chandarasorn, 1998).

The clarity of the institutional reform objectives and goals also impacts on implementation. Clear objectives and goals translated into sub-goals and action plans that are monitored and evaluated and adjusted if necessary will result in successful implementation. The use of appropriate tools and methods, which are user-friendly and fit for purpose, will be beneficial and will facilitate

implementation. Various measures such as training, motivation and enough time for behavioural change are necessary. Sufficient resources, e.g. financial, human expertise and equipment will make implementation possible. The availability of enough resources directly collates with the chance of success. However, enough resources do also imply efficient and effective use of these resources (Chandarasorn, 1998).

Monitoring and evaluation of institutional reform in terms of both quantitative and qualitative indicators are crucial. A participating process that allows for stakeholder input and proposals for action, as well as understanding that also facilitates buy-in from these stakeholders will increase the chances of successful institutional reform implementation. Lastly, institutional reform of state institutions enabled through legislation also supports successful implementation because legislation provides continuation (Chandarasorn, 1998).

In terms of state institutional development processes, the following aspects are critical (DFID, 2003). **Firstly**, state institutional reform and development should start with an analysis of the overall institutional framework in which the state institution will have to operate and deliver. The next step is an examination of the state institution's strategic environment and the organisational problems. Then follows a review and design phase when a series of interventions is designed and the impact and risk of each intervention are considered. This phase includes a re-engineering process. The next step is the implementation phase, which will include a major change programme as well as a change management process. Lastly monitoring and evaluation are critical.

To summarise, sound approaches to state institutional reform require leadership that supports the organisational reform, takes into account the scope of the review and clarifies the institutional reform objectives and goals. In addition, enough resources should be available. Monitoring and evaluation of the process are crucial. These reforms will be continuous because state institutions will be

required to keep up with the new needs and demands of the societies for which they are established.

Over the past 30 years policy reform efforts, mostly driven from the World Bank and the International Monetary Fund, have impacted negatively on African countries. Today these failed reform efforts mean that African states do not have the necessary state institutional capacity required to support political stability, high economic growth, sustainable development, accelerated sub-regional and continental economic integration.

The African Peer Review Mechanism marks the start of a new kind of African diplomacy where African states will start to drive their own agendas and reform programmes. The African Peer Review Mechanism offers member countries the opportunity to benchmark and learn from the successes and good policies of other members. The challenge for Africa is thus to turn back the state decay by introducing targeted state reforms with a view to create political stability, high economic growth and sustainable development.

The main test for the effectiveness of the African Peer Review Mechanism is the extent of frankness of the reports being published by governments and the extent of the public policy initiative, action plans and implementation activities, including state institutional reform plans and actions, emanating from them.

1.6 TECHNICAL REGULATORY REFORM

It is widely acknowledged that the explosive growth of the global economy is the result of rapid changes in world trade and investment which took place in the 1980s and 1990s. These changes include the reduction of barriers to the free flow of goods, services and capital. Mills (2000:20), however, also point out that the changes led to an intensification of non-tariff barriers including subsidies, quotas, regulations (also technical regulations) and anti-dumping policies.

Regulations in general, refer to a set of instruments that governments use to institute requirements for enterprises and people. Technical regulations, in particular, refer to a set of requirements used by governments to determine compulsory requirements for product or service characteristics or the related processes that should be complied with. Technical regulations also have specific administrative provisions and testing, certification and other conformity assessment requirements where compliance is mandatory with regard to public safety, health and environmental issues.

Some authors are of the opinion that these compulsory requirements are sometimes used by governments in excessively stringent or discriminating ways to restrict and protect trade..Cateora and Graham argue that the sheer volume of these technical regulations which require multifaceted formalities and substantial paperwork is becoming a problem in itself (2002:42). Hill (2002:538) supports this view and is of the opinion that global markets with global standards and technical requirements may still be a long way off, because national product standards and technical regulations still differs substantially.

On the other hand, Cateora and Graham (2002:454) recognise the legitimate and necessary use of technical regulations and standards to protect the consumers and the environment. The argument, however, is that countries that are not interested in using technical regulations and standards as trade barriers should look for ways to minimise trade-restrictive requirements through technical regulatory policy reform strategies.

O'Brien (2003:8) points out that technical regulatory policy reform is "the junction where the research and judgments of physical and natural scientists intersect with risk/return calculus of economists, the intricacies of the law and jurisprudence, the methods of public administration, and, to an ever increasing extent, the force of public opinion". It is, however, necessary to recognised that the identification of common practice trends, informed by international guidance

and practices, is possible and may be useful to policy makers who are responsible for the development of flexible regional policy approaches to technical regulatory reform. The application of these common practices, however, needs to be applied with caution because of different regional views and approaches and even gaps in terms of knowledge (OECD, 2003:11).

These common practice trends should therefore be understood as a flexible and not a one-size-fits-all concept that may be used by specific countries and regions to suit their specific technical regulatory needs, challenges and objectives. In the context of this research common practice means identifying patterns in technical regulatory policy approaches by various regions and countries that are similar as well as emerging policy areas that are different and that may be improved.

1.7 AFRICAN ECONOMIC STRATEGIES THAT ARE RELEVANT TO TECHNICAL INFRASTRUCTURE REFORM

The New Partnership for Africa's Development identified market access as a key driver of economic growth. This encompasses intra-African trade, Africa's trade with other countries and regions and the diversification of production and exports as a key priority area for the continent. The manufacturing market access initiative of the New Partnership for Africa's Development aims to increase the production and improve the competitiveness and diversification of the private sector, with potential for increased exports and employment creation, especially in the agro-industrial, mining and manufacturing sub-sectors (UNIDO, 2001).

The Market Access Initiative provides for the following technical infrastructure objectives (UNIDO, 2001:7): **Firstly**, the plan is to harmonise the technical regulatory frameworks of African countries and to adopt a best practice framework for technical regulations that meet both the World Trade Organisation requirements and the needs of Africa. **Secondly**, the intent is to establish national standards infrastructure in African countries and to develop appropriate

regional and national standards. **Thirdly**, the aim is to establish national measurement capacity. **Fourthly**, the aim is to ensure that internationally recognised conformity assessment bodies (e.g. testing and calibration laboratories, inspection and certification bodies) are established or assisted and to establish an appropriate, internationally recognised, accreditation infrastructure. **Fifthly**, the goal is to actively participate in international standards, metrology and accreditation activities and, **lastly** the intention is to pursue mutual recognition of test, calibration, inspection and certification results with major trading partners.

The African Productive Capacity Initiative was finalised in 2003 with a view to strengthen Africa's industrial production. The initiative's objectives are to produce goods that can continue to meet present market requirements and to upgrade the quality of produced goods in order to tap into future export markets (UNIDO, 2003).

African leaders attending an ordinary session of the African Union Assembly of Heads of State and Government held in Addis Ababa, Ethiopia, in January 2008, confirmed that there are emerging opportunities for Africa to foster industrial development as an effective, socially responsible and sustainable means towards economic transformation. During this meeting, African leaders took an important decision by adopting the Action Plan for Accelerated Industrial Development of Africa which aims to establish operational priorities, programmes and projects in close co-operation with key stakeholders, such as the Conference of African Ministers of Industry Bureau members, African Development Bank, African Union, African Union Commission, Common Market for Eastern and Southern Africa, European Investment Bank, New Partnership for Africa's Development, Southern Africa Development Community, United Nations Economic Commission for Africa, United Nations Industrial Development Organisation (UNIDO) and the World Bank. In October 2008, African leaders agreed to a strategy for the implementation of the plan of action for the

accelerated industrial development of Africa (AC, 2008). The abovementioned implementation strategy includes two projects that are relevant to this study, namely the project that focuses on technical assistance to enterprises to meet international standards and technical regulatory requirements and the project that focuses on the establishment of a regional framework to coordinate standards, metrology and accreditation activities in Africa (AC, 2008:33-34).

It is crucial to note that about 80% of global trade is affected by standards and regulations that call up standards (NIST, 2000) and that the estimated cost of measurement for most modern industries is at about 10-15% of production costs (SADC, 2004:38). The lack of technical infrastructure in Africa undermines the region's competitiveness because it creates technical barriers to trade and impacts negatively on regional integration (AC, 2005).

In view of the above, the importance of reforming the technical infrastructure, e.g. metrology, standardisation and conformity assessment for Africa is highlighted. However, Van Rooyen and Peet (2007) confirm the enormity of building sustainable technical infrastructure that would meet the needs of the continent. Current positive economic outlooks for growth in the region of 5.8% for 2006 and 5.5% for 2007 also support this idea (OECD, 2006). The next section reflects on the current status of technical infrastructure co-operation in Africa.

1.8 COMPLIANCE COST FOR AFRICAN ENTREPRENEURS

Global trade means that many of today's products are built with components sourced from around the world, which must fit together, perform as expected and comply with international standards and technical regulations. High compliance costs to international standards and technical regulations detract from the international competitiveness of African entrepreneurs. Businesses often need to incur quality assurance compliance costs in terms of good manufacturing practices, occupational health and safety, in-house or third-party laboratory

testing, certification, verification, quality auditing and calibration (UNIDO, 2005: 96). Table 1.1 below provides a range of quality costs relative to total sales for specific sectors.

Table 1.1: Interindustry distribution of quality expenditure

Inter-industry distribution of quality expenditures	
Activity area	<i>Incidence of expenditure in quality on selling price (%)</i>
Chemicals (granular enzymes)	0.29
Metals (aluminium and steel)	0.058 – 0.27
Vehicle parts (shock absorbers and engine valves)	0.92 – 3.19
Electric machinery (digital weighing machines and fitness equipment)	0.93
Beef	1.50
Dairy products (cheese, powdered milk)	0.66 – 9.5
Footwear (leather shoes)	2.50
Processed food (fruit juice and canned tomato)	0.2 – 2
Oil seed products (peanut and peanut butter)	0.33
Refined fuels	0.04

Source: UNIDO (2005: 96)

In addition to the above quality expenditure, African enterprises also incur additional export-related quality and compliance expenditure if they wish to export to the EU and the US (see table 1.2). These expenses exclude significant investment in process re-design, new equipment, quality auditing, product and process certification and testing which may be necessary.

Table 1.2: Export related quality and conformity expenses

Export related quality and conformity expenses		
Activity Area	<i>Incidence of expenditure in quality on selling price (%)</i>	<i>Incidence of incremental costs on selling price (%)</i>
Chemicals (granular enzymes)	0.29	0
Metals (aluminium and steel)	0.058 – 0.27	0 – 4.20
Vehicle parts (shock absorbers and engine valves)	0.92 – 3.19	0 – 4.66
Electric machinery (digital weighing machines and fitness equipment)	0.93	4.30 – 8.33
Beef	1.50	S/d
Dairy products (cheese, powdered milk)	0.66 – 9.5	1.77 – 3.19
Footwear (leather shoes)	2.50	10.73
Processed food (fruit juice and canned tomato)	0.2 – 2	2.44
Oil seed products (peanut and peanut butter)	0.33	2.04
Refined fuels	0.04	2.50

Source: UNIDO, (2005: 96)

The size of costs for quality compliance differs from sector to sector. For many sectors, it is negligible either because quality assurance is based on suppliers' declaration or because firms are part of a global production chain, which provides for an integral total quality system. An example is the vehicle parts sector. Other sectors, however, incur significant quality assurance costs. The footwear sector, for instance, and leather shoes in particular can incur costs of up to 11% of total sales. The dairy sector and the electrical machinery sector also incur high compliance costs. In the food industry, quality-related expenditure includes complying with public standards. For example, the United Kingdom's retailer standards for food, requires re-tooling, adjustments in product characteristics, which places a huge burden on exporters.

Technical infrastructure capacity becomes critical when countries start to export their products and services as it impacts directly on export companies' ability to be competitive.

1.9 TECHNICAL INFRASTRUCTURE INSTITUTIONAL CAPACITY TO SUPPORT AFRICAN TRADE

The capacity of a country's technical infrastructure institutions, e.g. the standards body, the accreditation system and the metrology institute, impacts directly on the competitiveness of its private sector. It can raise or lower economic efficiency, facilitate or constrain exports, enable or exclude the participation of small and medium enterprises and block or promote competitiveness (UNIDO, 2005:94). It is particularly during the early phase of sector development that effective technical infrastructure support is necessary to support private sector entrepreneurial efforts. Technical standards help to focus the direction of collective technology search efforts. Standards foster diffusion of new innovation and technology. It also fosters efficiency gains from specialisation enlarging the scope of mass production, reduced costs and prices and enlarging the potential market (UNIDO, 2005:85).

In addition countries also have to ensure that they obtain international recognition for the national technical infrastructure, which demonstrate the equivalence between their domestic technical infrastructure and those of other countries. The domestic technical infrastructure also needs to be able to deal with fast-changing requirements from other countries.

The abovementioned demands require consistent government budgets, constant skills availability, good managerial practices and alignment of the activities of the technical infrastructure institutions. It requires careful investment by government into technical infrastructure based on careful needs assessments and economic evaluations. The investments required from government will need to provide for a

vast range of metrology facilities, a sound accreditation system that can be used to support a country's certification testing, calibration and inspection activities, a system to facilitate standards development and harmonisation and last but not least, investment in order to gain and maintain the international mutual recognition of the technical infrastructure (UNIDO, 2005:98).

Table 1.3 is a summary of the investments made by a selected group of countries in national and international standard development activities.

Table 1.3: Annual budgets for standards development in 2002 (Thousands of Swiss francs)

Group 1 <u>0 – 10 000</u>	Group 2 <u>10 001 – 40 000</u>	Group 3 <u>40 001 – 60 000</u>	Group 4 <u>60 001 – 500 000</u>
<u>Africa</u>	<u>Africa</u>	<u>Africa</u>	<u>Africa</u>
Algeria	-	Nigeria	-
Angola		South Africa	
Benin	<u>Asia</u>		<u>Asia</u>
Botswana	China	<u>Middle East</u>	Australia
Burundi	India	Israel	
Cameroon	Japan		<u>Western Europe</u>
Congo	Rep of Korea		Germany
Côte d'Ivoire	Singapore		Greece
Egypt	Vietnam		UK
Eritrea			Spain
Ghana	<u>Latin America</u>		Turkey
Kenya	Peru		France
Lesotho			
Libya	<u>Middle East</u>		
Madagascar	Saudi Arabia		
Malawi			
Mali	<u>North America</u>		
Mauritius	USA		
Morocco			

Mozambique	<u>Western Europe</u> Austria Denmark Italy Netherlands Sweden Finland Portugal		
------------	--	--	--

Adapted from Source: UNIDO (2005:101-103)

Developed countries invest a substantial amount of money in the international and national standards development process as illustrated in table 1.3. Specifications of international standards are therefore strongly influenced by the large international companies of the developed world. There is a growing concern about the use of standards and technical regulations as discriminatory technical barriers to trade. Although standards and technical regulations should be designed taking into account risk and scientific evidence, dominant groups can manipulate the standards development process to protect their interests.

In addition to the manipulation of international standards development processes by developed countries, developing countries lack the capacity to participate actively in international standards development activities. Developing countries also have limited capacity to provide credible information to defend their interests, putting developing country enterprises at a disadvantage. This, therefore, makes developing countries standards-takers and thus reactive players in the international trade system. Developing countries' enterprises are therefore at a constant disadvantage creating an asymmetric playing field. Additionally, developing countries often have to comply with numerous technical requirements of the different trading partners (Wilson and Abiola, 2003:xxxv).

The role of a country's national technical infrastructure is therefore crucial to facilitate diffusion of the international standards in order to improve the competitiveness of its domestic industries. The problem is, however, that technical infrastructure is mostly absent or insignificant in developing countries, including countries on the African continent. Investment in technical infrastructure institutional development and capacity-building is increasingly important if countries in Africa want to increase their share in global trade by assisting African enterprises in their attempts to enhance their competitiveness.

1.10 CONCLUSION

This chapter considered the various public policy reform phases that occurred in Africa in order to bring about change. Many of the changes that occurred were conditional in terms of World Bank and International Monetary Fund support. Others changes, however, were the result of the African Peer Review Mechanism, which countries used to introduce policy reforms. The focus of these public policy reforms was the adoption of policies, standards and practices that can lead to political stability, high economic growth and sustainable development. So far, many of the reforms and changes have failed and this negatively impacts on among others, the state institutional capacity, which is crucial for development. The chapter therefore highlights the importance of state institutional capacity and the responsibility of government to invest in these institutions and to manage them effectively in order to support economic growth and sustainable development.

In the above regard, the chapter specifically explored the need for technical regulatory reform and the establishment of appropriate technical infrastructure in Africa in the light of current African initiatives aimed at the accelerated industrial development of Africa and market access for African goods and services as a key driver of economic growth. The current issue is that African enterprises are not competitive because of high compliance costs, the need for significant

investment in new equipment, quality auditing and product certification and testing. In addition, African enterprises lack the support of national standards, metrology and conformity assessment infrastructure to deal with fast-changing requirements of other countries that they want to export to.

The next chapter focuses on the research methodology followed to investigate the topic in greater detail.

CHAPTER TWO

RESEARCH METHODOLOGY

2.1 INTRODUCTION

The purpose of this chapter is to describe the researcher's investigation into the importance of the research problem, the types of research approaches available to the researcher as well as the various research designs that can be utilised in order for the researcher to choose the most appropriate research methodology to solve the problem statement.

Taking into account the aforementioned, this chapter considers the need, nature as well as purpose of the study. The problem statement for the study is articulated in order for it to inform the research design and the objectives of the research. The limitation of the study is also considered.

2.2 THE RESEARCH PROBLEM

A study is scientific if it contributes to knowledge through empirically driven and methodological rigorous research (Birkland, 2005:11-12). Scientific studies follow a systematic process of asking questions and seeking answers on a specific subject where knowledge is incomplete and research problems need to be solved. Scientific studies therefore aim to contribute to greater scientific knowledge and deeper detail through a process of discussion. Rossouw (2005: 37) supports this approach and confirms that science is a continuous process of persuasion, explanation and justification. Inductive argument will be used throughout this study in order to support the conclusion because it facilitates the discovery of new knowledge based on available knowledge (Rossouw, 2005:40-41). Mouton and Marais (1988:111) reach the conclusion that when a researcher

uses inductive argument, the supporting evidence may lead to highly probable conclusions through a process of gradual support.

Leedy and Ormond (2005:2-9), identify the following distinct research characteristics that make a study scientific. **Firstly**, research starts with a clear question or problem that can be stated precisely and distinctly. **Secondly**, research requires a clear articulation of the final goal of the research. **Thirdly**, research requires that the researcher plan and design his/her research in a purposeful way ensuring that the appropriate data is acquired. **Fourthly**, researchers often break the main problem into several small or sub-problems. The researcher therefore deals with each of the sub-problems with a view to solve the main problem. It is important to note that research is more often than not helical because it is seldom conclusive. One research cycle often comes across additional research problems that need resolving. The next sections look into the importance of the research problem, types of research available to researchers, the different research methods that can be employed as well as qualitative research sources available to researchers.

Leedy and Ormond (2005:2-9) emphasise that “the heart of every research project is the problem”. Stating the research problem clearly and completely is crucial because it offers both the justification for the research and it convinces readers that the research contributes to the specific academic field.

Additionally, a well-defined research problem helps the researcher to choose an appropriate method of researching to focus the researcher and improves the researcher’s efficiency. The quality of the research problem statement also determines the quality of the research design and the solution to the research problem statement. Mouton (1996:69) confirms that the logic of a research project is informed by the relationship between the research problem, the evidence provided by the researcher and the conclusion of the research.

2.3 THE USE OF RESEARCH

Social research has two fundamental uses. **Firstly**, research is used to advance general knowledge and **secondly**, research is used to solve specific problems. Neuman (2002:33) distinguishes between researchers who seek to understand the fundamental nature of social reality and thus engage in basic or pure research and researchers who primarily want to apply knowledge to address a specific practical issue. Applied researchers want to answer policy questions.

For this study, applied research is relevant. The objective of the study is to focus on technical regulatory policy reform in Africa and the institutional capacity required supporting future technical regulatory reform policy strategies. The aim is to apply scientific knowledge to develop recommendations for an African policy approach to technical regulatory reform that will ultimately assist African countries to grow their economies sustainability.

2.4 TYPES OF RESEARCH APPROACHES

Research involves obtaining scientific knowledge through various objective methods and procedures. The use of the correct research methodology is of crucial importance for the validity of the findings of the study. Lasswell (1933), a well known social scientist and reformer of the 1940s to 1960s, argued that both quantitative and qualitative research methodologies can be used to study public policy. The choice between quantitative and qualitative research methodologies is determined by the aims of a specific research study, the concept and context of the study as well as the type of research.

Verwey (2005:160-163) describes the difference between the two methodologies as follows. Quantitative research methodology is empirical and uses numerical analysis to convey results. This research approach is highly objective and uses of deductive reasoning. Quantitative research methodology findings can be

generalised, aim to be one hundred percent reliable and valid and are thus repeatable. The use of quantitative methods is also functional, specifically in the information age. Qualitative research methodology, on the other hand, is critical and uses words, symbols and metaphors to describe, decode and translate results. This research approach is subjective and makes use of inductive reasoning. Qualitative research methodology findings are limited to the sample and reliability is not so important, nevertheless it is still valid.

One criticism of the quantitative research methodology is that researchers may regard the accuracy of the measurement more important than the significance of the study. Qualitative research methodology is therefore more suitable for the study of social sciences because it focuses on exposing hidden meaning (Verwey, 2005:163). The use of qualitative methods is effective and preferred because it allows for the collection of evidence from journals, official responses to reports and others sources that are not strictly quantifiable.

Qualitative research approaches allow researchers studying public policy to understand and analyse complex situations. These approaches also provide for the use of explanatory methods to explain the work and makes extensive use of inclusive reasoning, which allows the policy researcher to make a broad range of observations that the researcher can use to identify broader or more general conclusions (Leady and Ormond, 2005:91-97). Welman, Kruger and Mitchell (2005:188) confirm that qualitative studies may lend themselves to studying cases.

In conclusion, both quantitative and qualitative research methodologies can be used to complement each other because each method provides complementary insights.

For this study the researcher will use a qualitative research design to answer questions about the complex nature of technical regulatory reform in different

regions of the world. The qualitative research design will be used to describe and understand the technical regulatory phenomena with a view to interpret the findings and to gain new insight with a view to develop policy recommendations for a African approach to technical regulatory reform.

2.5 QUALITATIVE RESEARCH DESIGN

The **first** aim of qualitative research is to establish the nature of the reality of certain social situations, processes, systems or people. **Secondly**, the aim is to enable the researcher to gain new insights, develop new perspectives and discover new problems within a specific phenomenon. **Thirdly**, the aim is to allow the researcher to test the validity of certain findings and generalisation and **lastly**, to provide the researcher with a means to analyse the effectiveness of policies or practices (Denzin and Linclon, 1994:4).

The following paragraphs consider some of the commonly used qualitative research designs used by researchers, namely content analysis, grounded theory study, phenomenological and ethnography designs and case study methods.

2.5.1 Content analysis method

The content analysis method of research focuses on a detailed examination of the contents of a particular body of information with a view to identify themes, trends or patterns. Content analysis methods often require both quantitative and qualitative analysis and in some studies appropriate statistical analysis are performed to interpret the data (Leedy and Ormond, 2005: 142-143).

2.5.2 Grounded theory study method

A grounded theory study focuses on a process related to a specific topic with a view to develop a theory about that process. The grounded theory approach starts with data that is used to develop a theory. This approach is often used when current theories on a specific topic are inadequate or non-existent. The grounded theory approach involves a process of moving back and forth between data collection and data analysis. This method is also known as the constant comparative method where data analysis guides subsequent data collection (Leedy and Ormond, 2005: 140-141).

2.5.3. Phenomenological Study Method

A phenomenological study focuses on the understanding of people's perspective of a specific situation with a view to use the multiple perspectives on the same situation to make some generalisations. The data collection and data analysis process requires that the researcher separate relevant and irrelevant information. Relevant information is broken into smaller parts that reflect similar thoughts. The focus is therefore on common themes that are used by the researcher to develop an overall description of the phenomenon as experienced by many people despite their diversity (Leedy and Ormond, 2005:139-140)

2.5.4 Ethnography method

An ethnography study method is used when a researcher studies a specific community, group or organisation that shares a common culture. Ethnography studies focus on the understanding of complex cultures. The researcher needs a solid background in cultural anthropology if this method is used. An essential condition for this sort of study is that the researcher must be informed by prolonged engagement with the cultural group that is investigated (Leedy and Ormond, 2005:137). This allows the researcher the opportunity to observe

behavioural regularities in everyday situations and provide the deductive keys to the culture under investigation (Welman, Kruger and Mitchell, 2005:193). Data collection and data analysis often occur simultaneously during this study method. Data collection happens chronologically and data analysis identifies patterns and regularities with a view to interpret the general nature of the culture, group or organisation (Leedy and Ormond, 2005:138-139).

It is, however, important to understand that the abovementioned methods are not that distinctively different. By its very nature qualitative research is flexible enough to allow for the use of two or more methods if they are relevant to the research question.

2.5.5 Case study method

The case study method is useful when specific programmes are studied in depth with a view to understand and inform similar programmes. Case studies are generally preferred as a research strategy when exploratory questions are considered and are often used in policy and public administration research (Yin, 1994:7). In policy and public administration the distinctive need for case studies arises out of the need to understand complex social phenomena (Yin, 1994:3).

According to Yin (1994: 38-45) there are primarily two types of case study design, namely single-case and multiple- case designs. This means a researchers needs to make a decision, prior to any data collection, on whether a single-case study or a multiple cases are going to be used to address the reseach questions.

In this study the researcher will use a multiple-case design. Yin (1994:45) advises that the selection of the specific cases that will be studied should be done carefully and should serve a specific purpose within the overall scope of the study. Yin is of the view that the selection of the cases should be informed by

replicational logic. Thus, if a researcher compares multiple cases in which the same results are predicted the researcher may be able to produce evidence that the multiple cases did involve the same syndrome. If similar results are obtained from the selected cases replication is said to have taken place.

The researcher using the case study method collects extensive data on the programme which is under investigation. The data collection process includes collecting information on the context surrounding the case for example any relevant historical, economic or social factors that impact on the programme. Context is important because it helps the researcher and others that read the case study to draw conclusions about possibilities to generalise the findings for other programmes. Generally, a case study must allow the researcher and the reader to converge or triangulate the data in such a manner that all the data must point to the same conclusion (Leedy and Ormond, 2005:135-136). Case studies therefore direct the researcher to the distinctiveness and uniqueness of the case that is studied in all its complexities (Welman, Kruger and Mitchell, 2005:193).

Yin (1994:10) identified the following concerns that researchers may have when using the case study methodology. **Firstly**, the concern is that case study research may lack rigor and may allow for biased views to influence the direction of the findings and the conclusion. **Secondly**, the concern is that case studies provide little basis scientific generalisation. **Lastly**, the concern is that case studies may take to long and may be too massive in size, which make them unreadable. He, however, is of the opinion that these complaints may be appropriate for case studies done in the past, but it is not necessarily the way case studies must be done in the future.

In view of the above the concerns with the case study methodology the researcher aimed to report all evidence fairly, used the cases of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development that started with technical regulatory for in the early 1990s as a

basis for scientific generalisation and avoided the traditional lengthy narratives which made it possible to limit the time it took to complete the study.

2.6 QUALITATIVE RESEARCH SOURCES

Welman, Kruger and Mitchell (2005:40-41) distinguish three categories of qualitative research sources, namely primary, secondary and tertiary sources. Primary sources are original written information by authors based on their experiences and observations. Secondary sources are information derived from original sources. Tertiary sources include indexes, abstracts, as well as encyclopaedias and are often used to locate primary and secondary sources or to introduce a topic. Information often flows between primary to secondary to tertiary sources. As the information flows, it becomes less authoritative and detailed. Secondary and tertiary sources are also consulted to question and review the primary information (Welman, Kruger and Mitchell 2005:213).

The methodology used by the researcher for this study is the qualitative research method combined with secondary techniques. The secondary sources are relevant textbooks, web based resources, official World Trade Organisation, Asian Pacific Economic Community, the Organisation for Economic Co-operation and Development and Southern African Development Community documents and published reports.

The primary reason why this study utilizes secondary techniques is that a lot of written information is available and debates on technical regulatory reform are ongoing. The information sought in the research process is concerned with targeting some emerging common trends in technical regulatory reform and identifying the institutional capacity needed to implement these trends.

Welman and Kruger (2001: 240-241) confirmed that secondary data may be used as the basis for a research study and the reasons are the following:

- **Firstly**, secondary data may be used to seek a reference benchmark against which other findings can be tested.
- **Secondly**, secondary data keeps the researcher from trying to reinventing, allows the researcher to explore the past to contribute to the present study and helps the researcher to decide what further research needs to be done.
- **Thirdly**, primary research is difficult to conduct because of physical, legal and cost limitations.

2.7 NEED FOR THE STUDY

There are more than 100 000 quality standards and technical regulations, which are designed to facilitate interconnection and interoperability and safeguard health and safety around the world (UNIDO, 2002). In order to prevent these standards and technical regulations from impacting negatively on trade and creating technical barriers to trade, organisations such as the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development have both embarked on technical regulatory reforms to gain a competitive edge in global trade. The principles that these organisations apply in the reform of strategies are those that countries agreed to during the Uruguay Round of negotiations in terms of the World Trade Organisation Agreement on Technical Barriers to Trade. The agreement was negotiated because developing countries recognised the potential of standards and technical regulations to have a detrimental effect on their exports (Stiglitz and Charlton, 2007:211).

Current public policy on technical regulatory reform in Africa appears to be lagging that of the abovementioned regions thus impacting negatively on Africa's economic development and its ability to increase the African continent's share of global trade. Stiglitz and Charlton (2007:212) confirm that many developing

countries cannot assist their producers to meet international standards and technical requirements because of serious institutional deficiencies.

African countries face critical challenges in terms of improving capacity to meet quality standards as well as safety and environmental technical regulations that are required in global markets. Some of the challenges experienced in Africa are the lack of capacity to meet international standards and technical regulations, the lack of critical institutional infrastructure such as national standards development organisations, metrology institutions and accredited conformity assessment facilities, inability to verify compliance with international standards and technical regulations, inadequate inspection capacity to ensure that exports meet all the technical requirements and export bans on selected products (UNIDO, 2002:).

At continental level, African countries have unharmonised regional rules and procedures, which hampers continental trade. Soko (2004:39) points out that although regional integration has been an integral part of the continent's development strategy, most efforts to improve economic integration in Africa have been unsuccessful. To complicate matters further, the removal of trade barriers in regional blocs often benefits the most developed country within the bloc. Luiz (2006:43) illustrates this through the example of the relocation of the Volvo plant from Gaborone, Botswana to Durban, South Africa in 2005 as a result of the creation of the Southern African Customs Union.

Additionally, technical barriers to trade are expanding as developed countries also appear to use standards and technical regulations to protect local vested interests and a small number of politically powerful producers, often at the expense of the consumer (Oxfam International, 2002:58). The view is that while the standards and technical regulations genuinely aim to protect public health, these standards and technical regulations can be applied in a manner that undermines developing countries' efforts to export to developed countries (Oxfam International, 2002:103).

Gross domestic product (GDP) growth in Africa has increased over the years. This growth was underpinned by improved macro-economic policies as well as a strong demand for key African export commodities. The dependence on commodities for production, exports and growth, the limited capacity to add value to these commodities and the lack of diversification expose the region to external price shocks. Real growth rates are also still not enough to support Africa's development goals. In the light of the aforementioned African countries recognise the need to make economic diversification a top policy priority.

The Economic Report on Africa 2007 (EC, 2007) of the Economic Commission for Africa confirms that economic policies aimed at diversification have been marginalised since the 1980s because of a shift in favour of macroeconomic policies which were based on legitimate concerns such as the lack of service delivery by African governments and impatience with slow and inefficient state organisations. This marginalisation, however, impacted negatively on the efforts of the 1970s to deepen diversification. The report recommends that while macroeconomic policy remains important it needs to be sufficiently flexible to underpin economic policies on trade, finance and industry that may support diversification and transformation of the economy of Africa.

The abovementioned industry policies should also include policies on regulatory reform, creating a business environment that supports enterprise development and becomes more business-friendly. A World Bank report *Doing Business in 2005* (World Bank, 2005:3) highlights the relatively higher costs of doing business in poor countries and confirms that it is these high costs which put serious obstacles in the way of African entrepreneurs, who may support diversification, create jobs and boost economic growth. The abovementioned World Bank report confirms that the pay-off for regulatory reform appear to be as much as an increase of two percentage points on annual economic growth rates in terms of a hypothetical improvement on the ease of doing business.

A precondition for positive diversification outcomes is the strengthening of state institutions. This includes investment in the relevant institutions in a manner that is sustainable and that enhances good governance.

2.8 NATURE OF THE STUDY

The primary aim of this study, which is embedded in the field of Public Administration, is to investigate through a policy analysis process the extent to which Africa can provide African regulatory reform solutions for the lack of harmonised technical regulations and institutional capacity in standards, metrology and accreditation (technical infrastructure), which impact negatively on diversification, economic growth and access to global markets. The study will therefore consist of two parts.

The **first** part of the study considers the policy implications of the World Trade Organisation Agreement on Technical Barrier to Trade and the work of the Committee on Technical Barrier to Trade which is critical in that the committee provides policy principles that countries have agreed to with a view to improve the quality of their technical regulations for industry. The analysis will be done against the background of technical regulatory reform undertaken by the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development to support diversification of their products and services and to enable access to global markets. The study also considers the international, regional and national institutional arrangement for standards, metrology and accreditation, which is required to implement the policies that the World Trade Organisation Agreement on Technical Barrier to Trade.

The **second** part of the study considers the policy implications of the Southern African Development Community Technical Barrier to Trade Annex to the Southern African Development Community Trade Protocol, which aims to provide

a technical regulatory framework for technical regulatory reform in southern African. This part of the study also considers the Southern African Development Community's arrangement for co-operation on standards, metrology and accreditation. Southern Africa's participation in the international standardisation activities will be investigated as well as the status of the international recognition of its technical infrastructure institutions and current activities of the Southern African Development Community to improve the southern African institutional capacity.

The comparative analysis of the abovementioned Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development cases will facilitate an in-depth understanding of the two programmes as well as the identification of generalisations. The analysis of the Southern African Development Community arrangement will also be used to inform an approach to Africa. The set of generalisations will be used to make recommendations on an African approach to technical regulatory reform and institutional capacity-building to support the approach.

2.9 THE PROBLEM STATEMENT AND THE OBJECTIVES OF THE STUDY

Governments in Africa are responsible for the development of public policies that provide an enabling environment for Africa's economic development and growth. They are also responsible for providing support to African businesses who may want to export African products and thus increase Africa's share of global trade. This responsibility includes the provision of institutional capacity that can assist African enterprises to meet international standards and technical regulations. In addition it also includes the responsibility for African government to harmonise regional rules and procedures that will support regional trade and regional integration.

Currently, challenges that have been alluded to in terms of the need for the study, including the lack of technical regulatory reform in Africa and critical capacity constrains and expanding technical barriers to trade, remain. In view of these problems and in view of the fact that African governments recognised the need for increased economic development through economic diversification, the underlying problem to be addressed in this study is the absence and therefore need for an Africa policy framework to technical regulatory reform and institutional capacity-building to redress the current unsupportive technical regulatory policies and the limited institutional capacity.

The purpose of the study is thus to explore the scope for an African approach to public policy on regulatory reform, which may provide African solutions for current unsupportive regulatory frameworks, limited institutional infrastructure and a lack of capacity that impact negatively on economic growth and access to global markets.

In order to investigate the abovementioned problem the objectives of the study are to:

- Outline the relevant historical, economic or social factors which impacts on African public policy initiatives including reform and state institutional capacity-building initiatives.
- Provide a literature review of the theoretical aspects of Public Administration which form the basis for this research.
- Review international approaches to technical regulatory reform and compare two regional cases with a view to identify policy trends in technical regulatory reform as well as developments around institutional arrangements which influence policy implementation.
- Analyse the two regional case studies in order to draw conclusions about possibilities to generalise the findings in terms of common practices and areas for improvement for an African policy program.

- Develop policy recommendations for the development of an African technical regulatory policy framework responding to the needs of the region.

2.9.1 The research questions

The following research questions are thus posed for the study:

- Which historical, economic or social factors impacted on African public policy initiatives including reform and state institutional capacity-building initiatives?
- Why did many of the policy reforms and changes failed in Africa?
- How did the failed policy reform efforts impacted on the state institutional capacity?
- What is government's responsibility regarding investment in specific state institutions?
- What are the theoretical aspects of Public Administration and specific public policy-making and public institutions responsible for implementing public policies?
- What are the differences in policy processes between developed and developing countries?
- What is the status of public policy in Africa?
- What is the status of institutional development in developing countries and in particular in Africa?
- What was the international response to technical regulatory reform?
- How does the international response to technical regulatory reform impact on businesses?
- What were the regional responses of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development to technical regulatory reform?

- Which policy trends can be identified in technical regulatory reform in the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development?
- What are the policy trends in technical regulatory reform in southern Africa?
- What are the developments around international institutional arrangements which support implementation of technical regulatory reform strategies?
- What is the status of institutional capacity in Africa, in particular in southern Africa and South Africa?
- Which common practices and areas for improvement can be identified in the World Trade Organisation, the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development?
- What institutional capacity will Africa need to support implementation of an African technical regulatory framework?
- What policy options and policy recommendations can be adopted by African governments as alternative solutions to the problems identified in the research.

Chapter 1 of the thesis outlines the relevant historical, economic or social factors that may impact on African public policy initiatives including reform and state institutional capacity-building initiatives. The chapter considers why many of the reforms and changes failed and why these failures are impacting negatively, on among others, the state institutional capacity. The chapter also investigates the responsibility of government regarding investment in specific state institutions.

Chapter 2 of the thesis outlines the need for the study, the nature of the study, the problem statement, the research methodology and the research limitations. The chapter outlines the research problem, the various types of research approaches available to researchers as well as the many research designs that

may be utilised by researchers. The chapter also identifies the research methodology that the researcher uses for this study.

The third chapter of the thesis focuses on the theoretical aspects of Public Administration and reviewed relevant literature on Public Administration, and more specifically policy-making and institutional development. The chapter investigates the differences in policy processes between developed and developing countries and provides an overview of the status of public policy in Africa. The chapter also considers the status of institutional development in developing countries and includes an overview of institutional development in Africa.

Chapter 4 reviews the international approach to technical regulatory reform and compare two regional cases in order to identify policy trends in technical regulatory reforms and state institutional capacity requirements. The review covers the World Trade Organisation, the Asian Pacific Economic Community, the Organisation for Economic Co-operation and Development approaches to technical regulations and standards. The chapter explores how the international response to technical regulatory reform impact on businesses The Southern African Development Community's approach to technical regulatory reform is also examined. The chapter also investigates the institutional arrangements for standards, metrology and accreditation at international level and reflects on the arrangement and status of technical institutional capacity in southern Africa.

Chapter 5 identifies the principles that governs technical regulatory reform and considers the challenge for regions to develop a technical regulatory system taking account of the legislative and political system of the countries in the region. The link between technical regulatory reform policy and institutional capacity-building policy is investigated as well as the benefits of establishing reliable technical infrastructure.

Chapter 6 concludes with a number of policy recommendations regarding an African policy framework to technical regulatory reform, the establishment of regional and sub-regional co-operation and coordination on technical regulations, standards, metrology and accreditation, the development regional and sub-regional capacity to meet the needs of the region and lastly, technical support to enterprises to manufacture and sell quality goods and services. The chapter also provides a summary of the research and a conclusion.

2.10 METHODOLOGY

This study aims to contribute to greater scientific knowledge of public policy of technical regulatory reform in Africa through discussions of the technical regulatory reform practices and capacity-building initiatives that are taking place all over the world. Recommendations will be provided for an African approach to technical regulatory reform. A qualitative research strategy is employed, including the use of a comparative case study approach to test the research question because it facilitates complex investigations informed by extensive data. The comparative case study method is very useful for this study because it requires that the researchers set boundaries when the study starts but it allows the researcher to adjust the boundaries if necessary, thus giving the researcher flexibility. However, this does not mean that the intended research will necessarily be changed. Additionally, the qualitative research strategy is appropriate because the study started in chapter 1 with the relevant historical, economic or social factors that impact on African public policy initiatives. Chapter 1 provides the context for the researcher and others that read the case study.

This study uses secondary sources. The secondary sources include relevant books, journals, published reports, official World Trade Organisation, New Partnership for African Development and Southern African Development Community documents and web-based sources.

The advantages of the literature review method are that a large amount of information and data can be gathered through an interactive and cyclical process that takes into account limited timescales and costs. Lötter (2005:91) advises that the researcher must know about all the relevant literature on the topic that is researched, must judge the value of the information, must subdivide the information and must make the connections between the subdivisions of the literature. These connections need to be discussed and explained in terms of the nature of the connections and the connection with existing knowledge.

In addition, the comparative case study approach will allow for an analysis of international technical regulatory policies of the World Trade Organisation, regional policies of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development and at African level, technical regulatory policies of the Southern African Development Community. International policy trends on standardisation, metrology and accreditation will also be covered in the case study with a view to compare it with what is happening in the Southern African Development Community. Welman, Kruger and Mitchell (2005:193) recommend the use of inductive reasoning to search for recurring patterns.

2.11 LIMITATIONS ON THE SCOPE OF THE STUDY

The researcher acknowledges the following limitations: the researcher settled for a sample of literature because of time limitations and resource constraints. Not all literature on public policy for regulatory reform and technical infrastructure was studied; however, all literature that relates to the main themes of the study was covered. In terms of the comparative case study methodology, the researcher used two case studies as a sample because of limited resources and time.

2.12 CONCLUSION

To conclude, economic growth policy and regional development are important issues for Africa as these issues affect the quality of lives of African citizens. African countries are experiencing steady economic growth creating the policy space for interventions that can sustain these trends in a proactive manner. The research problem of this study is therefore of interest as it investigates what an African approach to technical regulatory reforms should be and which institutions government needs to put in place to support these reform. The following chapter focuses on the theoretical aspects of Public Administration in which the research topic is embedded and which forms the basis for this research.

CHAPTER 3

A REVIEW OF THE RELEVANT LITERATURE ON PUBLIC ADMINISTRATION

3.1 INTRODUCTION

This study is embedded in Public Administration. The chapter therefore provides a literature review of the theoretical aspects of Public Administration, which forms the basis for this research. The chapter also assesses the origins and historical development of public administration studies and identifies the generic administrative functions of public administration.

The chapter provides a conceptual overview of the nature of public policy with reference to international and African material and considers public administration as it is practised at international, regional and national level. The chapter pays specific attention to one specific function of public administration, namely public policy-making. Attention is also paid to public institutions that are responsible for the implementation of these policies.

The chapter provides definitions of public policy and public policy analysis. Different policy types and levels are identified. The chapter continues with a categorisation of the types and identifies different policy levels. Various models for policy-making are investigated. This is followed by an overview of the various approaches to policy analysis, reasons for public policy analysis and advantages and limitations of public policy analysis. Policy implementation is investigated as well as policy agenda-setting.

Of particular significance is an examination of the difference between policy processes in developed and policy processes in developing countries. The chapter concludes with an overview of public policy in Africa. In terms of institutional development, the chapter includes a literature review of

characteristics of state institutions, three models of institutional theory and approaches to institutional development. The chapter also examines institutional development in developing countries and concludes with an overview of institutional development in Africa.

3.2. THE BOUNDARIES OF PUBLIC ADMINISTRATION

The boundaries of Public Administration are not clearly defined because many of the theories of Public Administration are borrowed from other disciplines. These disciplines include business administration, economics, political science, philosophy, sociology, history and leadership. The result of the use of theories from other disciplines is the substantial literature and knowledge that has been developed in the field of Public Administration (Box, 2005: 14 and 32)

3.3 PUBLIC ADMINISTRATION

Public Administration is a combination of theory and practice, which is used to provide a greater understanding of the relationships between government and the society it governs, to encourage responsive public policies that meet social needs and to implement effective and efficient managerial practices. The science of Public Administration relates to the broad range of theories that has been developed by Public Administration scientist and is still being developed and used by public administrators to digest and transfer public policy information. The practice of public administration relates to what public administrators do to organise and get people to implement public policy. Public administration is therefore what governments do to provide public services in a specific political context. Public administration is practised in the fields of politics, economics, society, science and technology. Public administration is practiced by government internationally, regionally, nationally, provincially and locally.

Public Administration lies at the centre of human endeavours and thus shapes and structure contemporary society (Jreisat, 2002:6). Public administration refers to government which are tasked with the responsibility to oversee, administer and manage a government's public programmes, establish laws, regulations and policies aimed at meeting the needs of the public (Reilly, 1979:5-6). The word *public* means people in Latin and dictionaries define *public* as "the people of a community, nation or state" (Rainey, 2003:65).

Public administration is "simply the collective name for the complex of state departments, local authorities, state-controlled corporations and others" according to Hanekom and Thornhill (1986:7). Nationally, it concerns all areas of government such as the executive, judicial and the legislature. In this regard, public administration includes the establishment, maintenance and execution of the administrative system of government. Public administration also entails the establishment, maintenance and management of government institutions, which implements government policies as mandated by the legislature (Reilly, 1979:5-6). In addition, public administration involves bureaucratic agents of government who often identify a problem or are informed about a problem by outside forces, shape perceptions about the nature of the problem and place them on the agenda of government. Public administration, however, also involves generic functions as described in the following elucidation.

3.3.1 The Generic Functions of Public Administration

Public administration consists of the following three activities. **Firstly**; the generic administrative function of public administration that includes policy-making, organising, staffing, directing, co-ordinating through work procedures, reporting and budgeting. **Secondly**, the functional activities include the activities of each state institution or department or ministry, such as finances, trade and industry, education, security and energy. **Thirdly**, there are the auxiliary functions that support both the generic administrative functions and the functional activities,

such as research, analysis, collection and processing of data, record-keeping and costing (Hanekom and Thornhill, 1986:7-17).

3.3.1 (a) Policy- making

In terms of the generic functions of public administration of particular significance for this study, the **policy-making** function relates to the development of a broad framework of things that need to be done as well as the methods for doing them in order to accomplish the goals of the policy. These administrative actions are informed by specific goals and objectives that are set in terms of public policy and are often subject to environmental changes. Policy formulation, analysis and implementation are used to identify public policy needs, analyse existing policies and systems and prepare policy statements, legislation, regulations and directives. The implementation of public policy entails translating the policies into the mission and vision statement, objectives and priorities. During implementation, policy-makers should also communicate in order to establish policy shortcomings (Cloete, 1993:59).

3.3.1(b) Organising

The **organising** functions relate to the establishment of formal structures of authority and the arrangement and co-ordination of work in the structures to achieve at least one common goal. Organising is used to design and improve organisational structures, divisions of functions and communication channels. It involves formalising and balancing employee relationships. In this regard, line and staff functionaries are identified as part of the organising function. Botes, Brynard, Fourie and Roux (1996:343) differentiate between the staff and line functionaries. Staff functionaries are those employees that are responsible for support to the line functionaries, such as human resource managers or financial auditors.

3.3.1 (c) *Staffing*

The **staffing** function relates to the personnel function that brings in and train staff with a view to retain them in a favourable work environment. Staffing also involves the utilisation of employees according to their potential. The two personnel administration areas are **firstly**, the functionally specialised activities such as recruiting, training and promotion and **secondly**, the administrative implementation activities such as training policy, training control and training management. Stahl (1976:442) highlights the importance of personnel management and states that personnel management is the responsibility of everyone in the organisation who is in a position of leadership and authority.

3.3.1(d) *Directing and co-ordinating*

The **directing** function relates to the continuous task of making decisions and providing leadership through specific and generic orders, rules and procedures. It includes the **co-ordinating** function that relates to the co-ordination of interrelating parts of the work. Botes, Brynard, Fourie and Roux (1996: 331) confirm that modern technology should be utilised to support the directing and coordinating functions.

3.3.1(e) *Reporting*

The **reporting** function relates to providing information to the executives and subordinates through records, audits and research. This function includes, according to Cloete (1993:59), the design of control systems to ensure that work standards and procedures are met while delivering services to the public.

3.3.1(f) *Budgeting*

And lastly, the **budgeting** function relates to fiscal planning, accounting and control. Cloete (1993:59) defines *budgeting* as the design of financial systems for the preparation of budgets and the audit of financial statements. Government is responsible and accountable for the appropriation of public money that it receives in the form of taxes, tariffs, levies and fees. The public money is used to provide efficient and effective public services. These services are provided by state institutions which cannot function without sufficient finance.

In summary, the policy-making function comes first as it determines the mandate and tasks to be executed and the organising function follows with the establishment of the institutions that will be responsible for the implementation of the policy decisions. The staffing, directing, co-ordinating, reporting and budgeting functions are elements of the management of the established institutions (Hanekom and Thornhill, 1986: 10, 17-18).

3.3.2 **The Historical Development of Public Administration**

In this section, the origins and historical development of Public Administration are assessed and discussed from an evolutionary perspective in order to facilitate a better understanding of the current status of public policy and public policy analysis as discussed elsewhere in this chapter.

Public Administration goes back to biblical times and before. The ancient Egyptians and Babylonians recorded substantial advice on Public Administration. So did ancient China, Greece and Rome. In the late nineteenth century, America borrowed from the European public administration experiences (Shafritz, Hyde and Parkes, 2004:2).

The late Woodrow Wilson, however, is acknowledged as an eminent writer on Public Administration. His eminence was established with his famous 1887 essay, *The Study of Administration*. The essay's main themes were that Public Administration should be separated from traditional politics and Public Administration should be based on a science of management (Wilson, 1887). This essay is still recognized as essential to the understanding of the evolution of public administration (Shafritz, Hyde and Parkes, 2004:2).

In the 1940s, Herbert Simon, made a contribution to Public Administration with his book *Administrative Behavior*. He argued for the use of logical positivism when dealing with policy-making, which entails the use of natural-scientific methods to observe and measure policies objectively, thus excluding the feelings and opinions of individuals (Simon, 2004:136-149). Simon also developed the concept of *bounded rationality* with subsequent work (Shafritz, Hyde and Parkes, 2004:78). His work focused on the behavioural and cognitive processes used by humans to make rational choices and decisions. Simon argued that policy-makers could use the method of closed systems thinking to deal with the inevitable limitations of rational decision-making, thus limiting the choice between alternatives and their subsequent consequences (Simon, 1946).

By the 1950s, the role of government and thus public administration changed significantly in Europe and America. World War 1, the Depression and World War 2 altered the size, scope and reach of governments. Public administration became increasingly sophisticated and public sector organisations progressively larger and more complex. In this context, Charles Lindblom (1959) started to question the rational models of policy formulation and policy decision-making in public administration. Lindblom recognised the complexity of policy-making and argued that a rational-comprehensive approach to policy-making is impossible. He argued for a successive limited comparison approach to policy-making where policy-making builds on current situations through a step-by-step decision making-process that introduces small incremental changes (Lindblom, 2004:177-

187). He contrasted the abovementioned approach with the rational comprehensive approach, which fundamentally starts the policy-making process from anew using only theory to take experiences and relevant knowledge into account when considering a problem.

By the 1960s, Public Administration as a social science was strongly influenced by the systems approach to analyse social phenomena. Katz and Kahn (1966) identified the fact that organisational environments were increasingly complex, dynamic and uncontrollable (Katz and Kahn, 2004:207-215). The two Public Administration scientists also argued that organisations including public sector organisations and their environments are interdependent. Their work marked the beginning of an understanding that organisations and their environments interact in an open dynamic system and pointed to the end of the closed system view of organisations.

The advancement of policy analysis of Public Administration accompanied the 1960s systems approach. Yehezkel Dror (1967) developed a practical approach to policy analysis in public administration in his 1967 article in the *Public Administration Review*, *Policy analysts: A new professional role in government services*. Dror was one of the first writers on Public Administration to call for an approach to public policy decision-making that balances economics and politics. His main concern was that policy analysis should not only be informed by economics (Dror, 1967).

By the beginning of the 1970s, policy analysis started to focus on the evaluation of the effectiveness of policy decisions as well as the implementation aspects of policy decisions. This focus was the result of an increased recognition that many public policy decisions failed during the 1960s because policy-planning and analysis did not take into account the difficulties of implementation. In 1969, Wildavsky and Pressman (1973) initiated some of the first work in Public Administration that considered how policy analysis should include the issue of

policy implementation. In their landmark book of 1973, *Implementation*, they considered how a closer nexus could be achieved between policy and implementation.

The 1980s saw a substantial growth in the area of public policy and analysis (Shafritz, Hyde and Parkes, 2004:379). Work in the 1980s covered major areas of public policy such as policy formulation, policy analysis techniques, policy implementation, policy-planning and policy evaluation. Various excellent Public Administration journals such as the *Journal of Policy Analysis and Management*, *Policy Studies Journal*, *Policy Studies Review* and *Policy Science* were dedicated to public policy matters.

In the 1990s, John Kingdon (1995) made an important input into the public policy field with his work on what affects the setting of policy agendas, who the participants are in the setting of agenda and what the processes are for the setting of policy agendas.

To conclude, the history and the systematic study of Public Administration are now more than one hundred years old. The above description is therefore only a snapshot of the history of Public Administration that is relevant for this study.

3.3.3 Summary Paragraph

The preceding sections revealed that public administration is at the centre of human endeavour and it relates to what public administrators do or not do. Public administration consists of the functions of policy-making, financing, organising, co-ordinating and directing aimed at realising specific policy objectives that are considered to be in the public interest.

The previous sections also revealed the substantive body of research done by an increasing number of Public Administration scientists because of the increased

complexity and sophistication of public administration. An outcome of the work of the scientists that focused their research on government actions and the causes, content and consequences of these actions has been the development of sufficiently distinctive features for new emerging subfields such as public policy-making, public policy analysis and public policy implementation, which will be discussed in the next section of the literature review.

3.4. UNDERSTANDING PUBLIC POLICY

The literature review of public administration sources reveals that there is no universally accepted definition for public policy or public policy analysis because there are many possible ways to define public policy and policy analysis and often it means different things to different people. A review of some of these definitions is, however, necessary since it enables the researcher and the reader to attribute certain features to public policy and public policy analysis for the purpose of this study.

Birkland (2005:19) defines *public policy* generally as a combination of goals, decisions, commitments and actions directed towards implementing and achieving a particular outcome or result, which is deemed in the public interest. Birkland (2005:19) also identifies the following attributes to public policy: public policy is public in nature because it affects a greater variety of people than does private decision, public policy is made by government, it is what government intends to do and it is implemented by public and private actors. Roux (2002:425) points out that not all public policies are in writing. Some public policies that are followed by established public institutions develop over time because of organisational culture, a particular mindset or a particular perspective of how, where and when to do things.

Public policy is also defined as policy made in the interest of the public, instituted by government and interpreted and implemented by public and private sectors

(Shafritz and Russell, 2005:39-42). Public policy is thus a series of actions or inactions rather than a single action by government. William Jenkins confirms in *Policy analysis: a political and organisational perspective* (1979), the view that *public policy* is a set of decisions that are interrelated. Policy-makers who aim to achieve a selection of goals within a specific situation make these decisions.

Thomas Birkland (2005:18): highlights the lack of consensus on the definition of public policy as follows:

- “the term public policy always refers to the actions of government and the intentions that determine those actions” (Clarke Cochran, Lawrence Mayer, TR Carr and Joseph Cayer)
- Public policy is “Whatever government chooses to do or not to do” (Thomas Dye)
- “Public policy is the outcome of the struggle in government over who gets what” (Clarke E Cochran Lawrence Mayer, TR Carr and Joseph Cayer)
- “Public policy consists of political decisions for implementing programs to achieve societal goals” (Charles Cochran and Eloise Malone)
- “Stated most simply, public policy is the sum of government activities, whether acting directly or through agents, as it has an influence on the life of citizens” (Guy Peters).

For the purposes of a working definition for this study, *public policy* is defined as a statement of intent with respect to a particular problem or set of problems formulated by legitimate policy-makers. Public policy is usually presented as a formal policy statement. Its interpretation and emphasis are, however, communicated verbally.

Regarding public policy analysis: Dunn (1981:35) defines *policy analysis* as a process that applies social sciences to investigate public policy used by policy-

makers to resolve public policy problems. Anderson (1994:23) confirms public policy analysis as the designated study of public policy with a view to gain a better understanding of political behavior and government processes. Dye (1984:5-7) summarises *public policy analysis* as:

- a description of public policy content and the impact of environmental forces on the content:
- an analysis of the effect of politics and institutional arrangements on public policy: and
- an investigation into the expected and unexpected consequences of public policies on society.

Hanekom (1987:65) defines *policy analysis* as follows:

“Policy analysis is an attempt to measure the costs and benefits of various policy alternatives or to evaluate the efficacy of existing policies; in other words, to produce and transform information relevant to particular policies into a form that could be used to resolve problems pertaining to those policies”.

Weimer and Vining (1989:1) define *policy analysis* as merely the following:

“.... as client-oriented advice relevant to public decisions”.

Quade (1975:4), however, offers the following much more pragmatic approach to defining *policy analysis*:

“.....any type of analysis that generates and presents information in such a way as to improve the basis for policy-makers to exercise their judgment In policy analysis, the word analysis is used in its general sense; it implies the use of intuition and judgement and encompasses not only the examination of policy by decomposition into its components but also the

design and synthesis of new alternatives. The activities may range from research to illuminate or provide insight into an anticipated issue or problem to evaluation of a complete program. Some policy analyses are informal, involving nothing more than hard and careful thinking, whereas others require extensive data gathering and elaborate calculation employing sophisticated mathematical processes”.

The abovementioned scrutiny confirms the broad attributes of public policy and public policy analysis required for this study and it is therefore unnecessary to develop more definitions. In general, however, it is important to remember that public policies are developed and implemented as a collective response to deal with problematic public conditions. These conditions are often social, economic and environmental in nature and are therefore intertwined, without boundaries, interconnected and complex. With particular reference to this study the above process distinction drawn by Anderson (1994) and the summary by Dye (1984) are relevant.

3.5 POLICY TYPES AND POLICY LEVELS

An increased understanding of policy issues has led to better understanding of policy types. De Coning (2006:18-29) identifies the following public policy types: political policy, which is in the form of legislation or political party policies; executive policy, which is in the form of cabinet decisions; or implementation policies of political office-bearers and high-ranking public officials; administrative policy, which is in the form of extractive policies (e.g. taxes); as well as allocative policies (e.g. education and health budgets); and regulatory policies (health safety and environmental regulations and standards).

Theodore Lewis (1964:667-715), a policy scholar of the 1960s, worked on the development of policy categories or policy typologies. He laid down the following three classical policy types: distributive, redistributive and regulatory policy.

Birkland (2005:141-146) summarises distributive, regulatory and redistributive policies as follows: distributive policies involve policies that benefit particular groups of people while spreading the cost of the policies broadly across society. Examples of distributive policies are policies on farm subsidies, aviation, highways and schools. He, however, highlights the fact that these types of policies can result in serving the interest of particular people and not the interest of the public. Regulatory policies involve policies that govern the conduct of business. Examples of regulatory policies are policies that regulate competition traders or professions as well as policies that protect the public from the negative effects of business activities such as unsafe consumer goods, contaminated food and air pollution. These kinds of policies are often resisted by businesses on the ground that the costs of regulations make them uncompetitive. Redistributive policies are policies that involve transferring resources from the rich off to the poor, e.g. among social classes or racial groups. Examples of redistributive policies are social programmes, civil rights and freedom policies. One problem of redistributive policies is that the less powerful are not organised to defend their interests and thus the more powerful prevail.

The different levels of policy-making relate to geographical levels, for example, local or municipal policies, provincial policies, national policies, regional and international policies (De Coning, 2006:20).

In conclusion, although there are persistent criticisms of the above typologies of policies and work is ongoing to refine types and levels of policies, Lewis's (1964) typology of policies is valid for this study. The different policy levels that will be considered in this study relate to international and regional policies.

3.6 PUBLIC POLICY-MAKING MODELS

3.6.1 The rational comprehensive model

One of the first models of public policy-making developed by public policy researchers is the rational comprehensive model. In terms of this model, the policy development process is regarded as rational and ordered. Rationally, the policy process consists of the identification of a public problem that demands a public solution or public goal worth achieving, assessment of alternatives of achieving the desired public outcome, choosing between these alternatives, implementing the preferred option and attaining the objective (Dunn 2004: 47, 48). Some of the conditions required for the rational policy process to be successful, however, are that only a small number of decision-makers should be involved, that there is a high degree of consensus on the policy problem and the desired objective and a clear understanding of the consequences of each alternative. Additionally, smooth implementation of the chosen option should occur and there should be no obstacles to achieve the policy goals (Birkland, 2005:215).

The problem with this model of policy-making is that no matter how rational a policy-maker hopes to be, no policy-maker can gather all the information and consider all the alternatives. According to Shafritz, Layne and Borick (2005:22-25) Hebert Simon therefore asserts that policy-makers use bounded rationality. In terms of this model, policy-makers will make policy decisions based on a satisfactory amount of information, which may not be optimal but which is considered sufficient enough to inform a policy decision

3.6.2 The incrementalist model

The incrementalist model of policy-making, however recognise that in reality the policymaking processes, are likely to be less structured than both of the

abovementioned models. According to Shafritz, Layne and Borick (2005:22-25), Lindblom, a leading proponent of the incrementalist model, rejected a rational approach to policy-making and argued that policy-makers often start the policy-making process from current policies that are in force. He argued that policy-making was controlled and informed by specific circumstances and events and not so much by the will of the policy makers. Policy-making therefore entails incremental changes or changes from the margin. In terms of this model, policy-makers only consider a restricted number of alternatives and only a restricted number of consequences are envisaged and investigated for any given alternative

3.6.3 The mixed scanning model

Subsequent models were developed such as the mixed scanning model, which proposes a combination of the two abovementioned models, **firstly**, by reviewing the overall public policy and **secondly**, by concentrating on a specific public policy problem or outcome. The mixed scanning aspires to solve the shortcomings of the rational and the incremental model. Amitai Etzioni (1967) identified the following as one of the problems of the incremental policy-making process, namely that the decisions made using this model could reflect the interests of those with the most power. Another problem is that the model ignores the fact that society is innovative and often seeks substantive and fundamental policy decisions. The mixed scanning model of policy-making recognises that most incremental policy decisions anticipate fundamental policy decisions and fundamental policy decisions often affect cumulative incremental policy decisions. Shafritz, Layne and Borick (2005:25), however, highlight that policy-making decisions are often influenced by perceptions of a situation rather than by objective reality.

Currently, it is recognised that policy-making conditions often include multiple decision-makers, little consensus, incalculable probabilities, imperfect

implementation and unknown outcomes (Birkland, 2005:181-200). Public policies incorporate continuity and dynamism and often evolve or develop incrementally and become dynamic over time. Additionally, public policy is often the result of compromise resulting from debates and bargaining between various policy contributors. Public policy often reflects the power relationships, interests and capacity of various stakeholders engaged in the policy process.

Public policy, however, always produces an output but it often has unintended effects and consequences. These may stem from the ambiguity or contradictions of the public policy, from none or unsuccessful implementation, from a lack of understanding of the policy environment or from insufficient or ineffective use of resources.

Thus, public policy can be far-reaching or adaptive and incremental, even statistic. Public policies are often intensely political, they might fail but they are unavoidable because they are the means by which society advance, control and regulate themselves.

The challenge for policy-makers is to ensure that the policy system stays in touch with the needs, demands and preferences of society. Society, however, is a complex system that continuously changes and develops. This perpetual change is valid for individuals, institutions, communities, countries and regions and should not be ignored because it may cause a gap between the policy system and society (Birkland, 2005:49).

Another challenge for policy-makers is to not only change policies on paper but to effect change in society. Policy change is often resisted or implementation is difficult. Some of the questions that policy-makers have to consider are: why do they need policy change? How can they ensure sustainability and how do they manage policy change?

To conclude, the abovementioned analysis of the most prominent policy-making models illustrates that the models are useful for actual policy-making. None of the models are, however, found to be generically appropriate and it is therefore necessary to consider the usefulness of a relevant model or parts of a model for a particular problem or application. It is also recommended that policy-makers should not regard any particular model as entirely correct. Policy-makers should thus consider the value of any particular model relative to a specific policy problem because aspects of the truth are found in all of the different models.

3.7 SETTING POLICY AGENDAS

Agenda-setting is an important phase of policy-making. It is a complex phase that separates real policy issues from non-policy issues.

Agenda-setting is defined as the process by which specific public policy problems or issues reach the public attention. It is recognised that there exists substantial competition to set agendas for public policy in government because no society or political system has the capacity or resources to solve all public policy problems at any one time (Lasswell, 1958). Often public policy problems reach the agenda because of a specific crisis or because of a suggestion that there might be problems. Other times it is the result of increased knowledge gained by policy specialists. Birkland (2005:109) indicates, however, that even if a public policy problem gains attention the challenge remains in terms of keeping a problem on the agenda and focussing on a preferred solution to the problem. Kingdon (2005: 1-22) also warns that promulgation of a public policy does not necessarily mean that the policy will be implemented.

Birkland (2005:133-134) confirms that agenda-setting does not occur in a vacuum because various actors and groups that get involved in the policy-setting process influence it. Institutional relationship also impacts on agenda-setting as do arbitrary social and political factors. John Kingdon (1995) uses the term

window of opportunity for public policy change and argues that a specific matter can reach an agenda when various factors affecting agendas come together. Greater attention is then given to a matter and therefore a greater probability for policy change therefore exists.

A logical conclusion is that agenda-setting is complex because it often deals with the competing needs, values and preferences of different sectors of society. In addition, the challenge for policy-makers is to find a balance between proactive and reactive agenda-setting strategies. This entails that government policy-makers play an active role in defining policy problems with a view to introduce policy change without waiting for public demand.

3.8 POLICY-MAKING PROCESSES

Public policies are developed to accomplish specific policy objectives. Policies often arise because of decisions to pass legislation or regulations on specific issues that need to be enforced and implemented by government. Various stakeholders are responsible for policy-making, namely, legislative bodies in government, political office bearers, senior government officials as well as interest and pressure groups. Public officials, which are responsible for carrying out their functions on a daily basis, are often best placed to provide valuable information for public policy-making. They are in a position to identify limitations in current public policies and to propose means of correcting such constraints (Kuye, Thornhill and Fourie, 2002:76).

Policy-making processes are influenced by a variety of internal and external factors. These factors have to be taken into consideration by policy-makers. According to Botes, Brynard, Fourie and Roux (1992:306-309) the following internal and external factors influence policy-making processes.

3.8.1 Internal factor

- Government departments can only establish policy direction for matters that are within their jurisdiction.
- Policies often reflect the interest of the government of the day.
- Public sector organisations may have their personal and political agendas.
- Public policies are influenced by administrative law that prevent the infringement on the freedom of individuals and groups.
- Implementation of public policies depends on the availability of sufficient funding.
- The availability of adequate physical facilities is required for successful policy processes.
- Public policy processes are influenced by the management style of the head of a government department or a public sector organisation.

3.8.2 External factors

- Unforeseen or changing circumstances such as threats of war, drought as well as international pressure may influence policy-making processes.
- Changes in policy directions are influenced by changes in political parties that govern the country.
- Relationships between representatives of leading interest groups and government officials influence policy-making process.
- Research by commissions and committees appointed by government may influence policies.
- Personal views of public officials and political office bearers also influence policy outcomes.

3.9 MODELS FOR ANALYSING POLICY-MAKING PROCESSES

Models for analysing the policy-making process include the elite/mass model, the group model, the institutional model and the systems model. The following paragraphs will discuss each of the abovementioned models, its assumptions and the problems that each model experiences.

3.9.1 The elite/mass model

The elite/mass model argues that an elite group of policy-makers makes policy decisions on behalf of the masses or the broad public because the public is largely passive, “the masses are notoriously short-sighted” (Bailey, 1948:13) and are “often poor judges of their own interests”(Lasswell, 1933: 527). Thus, the assumption is that a small elite group, which is usually the government, is solely responsible for public policy-making and this small elite group therefore governs the masses. The elite group also argues that it can govern the masses because it has a common set of values that differentiates it from the masses (Henry, 1992:288). Some of the problems with this model are the notion that the elite are firmly in power, they know best and consensus exists in the elite group.

3.9.2 The group model

The group model contends that groups are absolutely crucial in public policy decision-making and that public policy is the outcome of an equilibrium reached between groups. The model is based on the assumption that different interest groups each with their own preferences and self-interest but with an equal amount of influence interact and put pressure on policy makers for specific policy interventions (De Coning and Cloete, 2006:38-39). Some of the problems with the group model are that it presupposes that policy-makers are sensitive to the demands and needs of all interest groups (Henry, 1992:289). It also assumes equal power for different groups, which is not necessarily valid.

3.9.3. The institutional model

The institutional model looks closely at government institutions such as the judiciary, legislature, presidency and the bureaucracy and how they interact and impact on policy-making processes. The model assumes that public policy shaped government institutions and that cross-institutional and intergovernmental connections often need to be considered during the policy-making process. The institutional model argues that public policy-making is the product of public institutions and that the structure of a public institution can have a substantial impact on public policy results. The model therefore argues that public policy should always take the structure of the public institution into account (Dye, 1978:20-21). A problem with this model is that it often ignores institutional linkages (Henry, 1992:290).

3.9.4 The systems model

The systems model contends that public policy is the response of the political system to the demands and needs of interest groups. This response is, however, influenced by the political, social, economic, cultural and technological environment. The model assumes that policy-making processes can be depicted at a general systems level, which identifies major subsystems and processes (De Coning and Cloete, 2006:40-42). The value of the systems model lies in the fact that it highlights the cyclical nature of policy-making (Fox, Schwella and Wissink, 1991:32). The argument is that policy-making starts with a public policy demand that is converted into policy outputs, followed by a policy statement. Policy implementation is then evaluated and monitored and may trigger new demands, restarting the cycle. Some of the problems with this model are that it does not take into account that various interest groups with specific powers influence policy-making. The model ignores the fact that policymaking is not orderly

because multi-factors and processes impact on public policy-makers and policy-making processes (Fox, Schwella and Wissink, 1991:32).

To conclude and in view of the problems that each of the policy-making model experience it is recommended that the abovementioned models should be used in a flexible manner. Anderson (1994:35) recommends that the uses of a specific model or a combination of models may depend on which seems the most useful in explaining policy-making. It is therefore necessary to acknowledge the value of each model relative to the specific policy that needs to be analysed. There are also a wide variety of other models such as symbolic, optimal, chaos, complexity and quantum models, which may be used in conjunction with the abovementioned models. It is also clear from the above description that policy-makers should not regard any particular model as entirely correct. In addition to the various models available for policy analysis, the following section considers various policy analysis approaches available to policy-makers.

3.10 APPROACHES TO POLICY ANALYSIS

It is necessary to consider the different methodologies to public policy analysis as different approaches can be used to analyse different aspects of policy. Each of the approaches is examined in the following paragraphs. Wissink (2006:77) developed the following table to model four major policy analysis approaches:

Table 3.1: Approaches to policy analysis

Analytical approaches	Analytical focus	Analytical instruments
Policy content analysis	Interpretation of policy content	Judicial practice Administrative law
	Comparative policy analysis	Correlation of policy content
	Policy dynamics	Indication of policy changes
	Policy pathology	Problems and ailments of the policy process

Policy systems analysis	Policy behaviour studies	Influence and decisions of shareholders and stakeholders
	Policy institutional studies	Role of institutions and related organisations
	Policy process studies	Agenda-setting procedures of policy-making bodies and committees
Policy issue analysis	Policy problem structuring	Structure of the nature of policy problems
	Policy recommendations and advocacy	Determining and forecasting policy solutions
Policy outcome analysis	Policy monitoring	The outcome of policy actions
	Policy impact evaluation	The value of policy actions
Policy value analysis	Community values and general morality or moral guidelines	Values and ethical considerations supporting specific policy choices and actions

Source: Wissink (2006:77) In Cloete

3.10.1 Policy content analysis

Policy content analysis focuses on the analysis of similar types of policies applied, changed and adapted in different environments. The aim of policy content analysis is thus to inform policy makers of how different policies can be adopted to suit specific environments (Wissink, in Cloete 2006:78).

3.10.2 Policy system analysis

Policy system analysis concentrates on the study of relationships and interaction between different stakeholders and policy-makers who participate in the policy-making processes. The aim is thus to explain how policy actors, policy

institutions and policy processes contribute to the outcome of policy decisions (Gilbert and Specht, 1986:12-13).

3.10.3 Policy issue analysis

Policy issue analysis focuses on investigating specific policy issues for which government is responsible. The aim is to provide policy-makers with a specific methodology to solve policy issues. The analysis starts with the identification of the problem by the policy analyst. The analysts then consider different solutions while taking into account the effect and impact of each solution. This forms the basis for a specific policy decision. The next phase involves monitoring and evaluation of the implementation and impact of the policy (Wissink, 2006:79).

3.10.4 Policy outcome analysis

Policy outcome analysis concentrates on the study of the actual effect of public policy. The aim is to analyse through the monitoring of policy outcomes and the evaluations of policy performance whether a policy did change, redirect, improve or preserve social conditions (Wissink, 2006:79).

3.10.5 Policy value analysis

Lastly, policy value analysis focuses on the examination of the underlying values of a specific policy decision as well as the morality of those decisions. This is of particular relevance in heterogeneous societies where conflicting values can create difficulties in solving specific public policy problems (Wissink, 2006:79).

In summary, specific policy analysis approaches provide methodological ways to solve particular problems in government. The framework developed by Wissink (2006:77) is very useful because it links specific policy analysis approaches with specific analytical focuses, instruments and applications. The specialised

information that is provided through policy analysis is, however, not only used for policy-making. It is also used for academic debate and for impact assessments in organisations. For the purpose of this study the policy content and the policy systems analysis is used in chapter 4.

In conclusion, the researcher acknowledges that a full discussion of policy analysis is not possible for the purpose of this study. It is, however, clear from the literature review that policy analysis has evolved in a post-industrial society, which needs an increasingly professional and scientific approach to the analysis of public policies that are multidisciplinary and interdisciplinary in nature.

3.11 REASONS FOR AND ADVANTAGES OF PUBLIC POLICY ANALYSIS

The main reason why it is imperative to analyse public policies is to determine whether these policies are in effect producing the desired impact to improve the well-being of society (Hanekom, 1987). **Firstly**, public policy analysis can provide insights into the political and administrative dynamics that influence policy decisions. **Secondly**, public policy analysis can identify the principles and values as well as the assumptions, whether normative, philosophical or ideological that influence the substance of public policies (Cloete and Wissink, 2000:V).

Dye (1987:5) categorised the reasons for public policy analysis as follows:

- Scientific reasons

The basic intention of scientific research is concerned with determining the cause and effect of particular public policy decisions in order to extend the knowledge of society.

- Professional reasons

The basic intention of the professional use of scientific knowledge is concerned with creating a better understanding of factors that influence particular public policies or the potential results of a public policy in order to provide advice to policy-makers.

- Political reasons

The basic intention of the political use of scientific knowledge is concerned with ensuring that government follows appropriate public policy approaches realise the desired policy objectives.

Hanekom (1987:66) provide the following reasons for public policy analysis:

- Scientific reasons

The scientific reason for policy analysis is to determine the feasibility of a specific policy decision in terms of politics (what is the impact on the executive institutions?), society (is it socially acceptable?), technology (can it work?), economics (what are the resource requirements?) and time (can it be implemented within a reasonable period of time?). Answers to the above mentioned questions may contribute towards narrowing the gap of uncertainty (Hanekom 1987: 66). The intention is to determine the causes and results of particular policy decisions in order to extend knowledge of society or to identify the environmental factors and characteristics that have an impact on the content of the policy. Another reason is to investigate the impact of policy on the environment and the political system. The scientific knowledge of the causes and results of public policy may be used by public officials to achieve a better understanding of social issues or to identify

factors influence public policy which enable them to advise the government on how to proceed to achieve policy objectives.

- Professional reasons

Professional reasons for policy analysis relates to creating scientific knowledge that may be used to inform policy-making to resolve social problems. Professional reasons for policy analysis include searching for and assessing alternative policy options by forecasting the direct and indirect impacts and long-range effects of existing or proposed policies by applying cost-benefit analysis, modelling or simulation to the different options (Hanekom 1987: 66).

- Political reasons

Political reasons for policy analysis are concerned with providing the political office-bearer with the information that may enable him to understand the complexity of the public issues that has to deal with and to make feasible policy decisions that may ensure that the desired aims are realised by appropriate policies (Hanekom 1987: 67).

Hanekom (1987: 65) confirms that public policy analysis provides information on priorities, certainties or uncertainties to the policy-maker. Public policy analysis contributes towards the making of rational public policy decisions because it makes it possible for the policy-makers to take into account the probable consequences of selected policy options. Public policy analysis also helps various stakeholders to understand the roles of values, it identifies particular interests and it recognises the political considerations in selecting a particular policy option.

Modern policy-makers must be able to establish clear public policy objectives, determine and weigh measurable targets, compare costs to benefits and measure performance. The various steps in public policy analysis allow for careful reasoning and the interpretation of knowledge and information about a specific policy problem or situation, for comparing costs to benefits and for measuring of performance.

Lynn (1980: 5) confirms that sophisticated policy analysis may be used to improve the basis for public policy decisions. He, however, warns against a narrow dependence on benefit-cost calculations to guide policy decisions. He argues that policy analysis may be used to understand complex public policy issues, to identify a range of appropriate alternatives, to provide evidence of the social consequences of each policy alternative and to allow for the discovery of the principles that ought to inform particular policy choices. Bresnick (1989:165) is also of the opinion that policy analysis may be used to anticipate the impact of public policy choices with a view to make better choices, which will result in better utilisation of resources and to reduce costs.

It is, however, important to realise that policy analysis has limitations. Dunn (2004:58-59) states that policy analysis has some or all of the following limitations: **Firstly**, policy analysis is seldom used directly as a basis for improving specific policy decisions. Policy analysis is often used in an indirect and general manner and as part of a larger body of information on a public policy issue. The main reason for its indirect and general use is the complex nature of policy-making processes which composed of numerous policy phases, ranging from termination and succession to adaptation and short-circuiting. **Secondly**, policy improvement may be controversial. The question of what constitutes a public policy improvement depends on the political, ideological or ethical stance of stakeholders and it often involves the selection of some values and norms over others. **Lastly**, policy analysis often reflects personal, professional and institutional interests.

Hanekom (1987: 71, 72) identifies the following constraints that limit the impact of the results of policy analysis. Societal problems are often defined in relative terms, which complicate the development of options to address those policy problems. Political considerations are important and thus policy-makers may only consider policy recommendations that are politically feasible. The results of policy analysis may support a preconceived idea and a policy analyst may use an analysis to promote his/her own views. Policy analysis which concentrates only on the effect a particular policy without also considering the effect it should have is ineffective. Over-emphasising the specific results of a policy may lead to unintended effects of the policy. Policy analysis is always incomplete because it is impossible to predict the future and thus a degree of uncertainty is always present.

Heineman, Bluhm, Peterson and Kearny (1997: 61, 62) agree that policy analysts have accumulated and developed numerous techniques that are sophisticated and powerful in their capacity for providing data, analysing relationships and clarifying alternatives. He, however, indicates that the use of the work of policy analyst in the policy-making process remains limited for the following reasons. Policymakers often are faced with information overload. In particular when contentious policy issues are being considered and where various stakeholders have an interest. In addition policy makers often use policy analysis primarily for the reinforcement of policy choices that policy-makers already made. Another problem relates to the politicisation of research which may result in opposing research by interest groups and other political actors. This may lead people to see research as a commodity to be bought and may impact negatively on the value of the research. Another problem relates to the fact that policy analysts may lack an independent power base or political acumen. Sometimes, analysts may be politically innocent which means they do not understand the importance of political considerations. Policy-makers need to take this into account.

Another limitation of policy analysis relates to the fact that policy analysts may provide useful information about a particular policy, they however give very little guidance on how the policy should be implemented. Because policy analysts may fail to understand the constraints on policy makers, they may develop policy recommendations that are implausible, impractical and unrealistic. Policy analysts should therefore put a higher priority on implementation issues, including how the policy recommendations may be operationalised and administered. Consideration of the implementation issues of the policy recommendation may increase the use of policy analysis (Heineman, Bluhm, Peterson and Kearny, 1997: 61, 62).

Roux (2002: 91-93) stated that the following limitations should also be borne in mind by the policy analyst:

- Budgetary constraints

The policy option may look good in principle but it is influenced by the realities of life. For example government budgets may be insufficient, specifically in developing countries, to satisfy all the needs of society and the policy analyst should therefore opt for objectives that are practical and affordable.

- Political constraints

Certain politicians may be more interested in policy options that support party politics and they may therefore not choose policy options or alternatives that are necessary in the interest of society in general.

- Organisational constraints

Ineffective institutional capacity, organisational structures and work processes and inadequately human resources may hamper the implementation of particular policy options. The analyst should therefore make allowances for capacity constraints when specifying policy alternatives.

- Inadequate information

Important policy information may not be available to the policy analyst that therefore limits the policy analyst's ability to specify clear policy proposals.

- Legal constraints

Legislation and departmental regulations may also limit the achievement of policy objectives. It is therefore important that the policy analyst understand the legal parameters for policy options before recommending policy options that are feasible in terms of legislation.

- Information overload

Information overload may have negative effect on policy analysis because it impedes or distorts meaningful interpretation, systematisation and classification of facts and data. This may make it difficult for the analyst to identify precise policy proposals.

- Fear of change

Government officials may be reluctant to change long-established government programmes. Policy analysts should therefore advocate incremental changes which are less radical.

- Over quantification

Policy analysts often use of quantitative data and econometric models when analysing public policies. It is, however, argued that the social needs and values of society can not always be measured in quantitative terms. The view is that some public policy matters may be better analysed by using common sense and good judgement rather than by using mathematical equations. When determining policy options, over quantification may become a constraint, and the analyst should in some cases rather opt for qualitative criteria.

- Subjectiveness

Subjectivity and prejudice on the part of the policy analyst may cause the final policy recommendations to be invalid. Analysts should strive to be as objective as possible when approaching policy problems.

- Inadequate satisfaction of divergent needs

It is often difficult to describe public questions in absolute terms. They are often complex and connected to a multitude of other concerns. Therefore making policy proposals for one problem may complicate others policy questions.

In summary, policy analysts should avoid the limitations that they can and keep the limitations that are unavoidable in mind when approaching policy problems and making policy recommendations..

3.12 THE PUBLIC POLICY ANALYSIS PROCESS

According to Quade (1989: 48, 49) the search for policy options takes place in five stages that must be appropriately linked together and that may have to be repeated several times. These stages are:

- Formulation: Clarifying and constraining the problem and determining the policy objectives
- Search: Identifying, designing, and screening the policy alternatives
- Forecasting: Predicting the future environment or operational context of the policy
- Modelling: Building and using models to determine the impacts of each policy option and
- Synthesis: Comparing and ranking the policy alternatives.

Quade describes each of the abovementioned stages and identifies the activities peculiar to each as follows.

3.12.1 Formulation

Formulation entails identifying the policy questions or issues involved, determining the context within which these policy issues are to be resolved, clarifying the policy objectives, discovering the major factors that are present and understanding the relationships among them. At this stage the relationships may be hypothetical and information may be in short supply. The attempt to clarify the above matters may, however, help to determine the logical structure of the analysis. The formulation stage is one of the most important stages, because it requires that the analyst defines the policy problem in different ways in order to identify viable policy options. Objectives can be set once everyone has a fair idea of what can be done. New alternatives can not be designed until the hidden deficiencies in the original possibilities are uncovered. The boundaries of an

investigation are influenced by how well the proposed policy solutions may behave and the true nature of the problem may not become clear until the policy analyst has what appears to be a solution. In addition feedback from the decision-maker may imply further iteration (Quade 1989: 51, 52).

A thorough investigation of the objectives of the policy-maker or the public institution is necessary. It is therefore recommended that the policy analyst should focus the inquiry on values and ultimate goals.

Academics and practitioners may differ in their interpretation of concepts such as goals and objectives. It is thus essential for the policy analyst to have a clear understanding of the meaning of these terms, how they differ and how to identify them for the purpose of analysing public policy (Roux 2000: 117). The Public Administration Dictionary (Fox and Meyer, 1995: 55) defines a *goal* as “an unrealised state not yet achieved by the members of an organisation but which they regard as desirable”. The Public Administration Dictionary (Fox and Meyer, 1995: 88) *defines* objective as “a short-term goal that can be deduced from an organisation’s mission and that could be stated by means of a process of negotiation”.

According to Dunn (1994: 195), goals and objectives are both future oriented. However, goals express broad purposes while objectives set forth specific aims. The following table illustrates the differences between goals and objectives:

Table 3.2: Differences between goals and objectives

Characteristics	Goals	Objectives
Specification of purposes	Broadly stated (e.g. to upgrade the quality of health care)	Concrete (e.g. to increase the number of physicians by 10 percent)
Definition of terms	Formal (e.g. the quality of health)	Operational (e.g. the quality of health)

	care refers to accessibility of medical services)	care refers to the number of physicians per 100,000 persons)
Time period	Unspecified (e.g. in the future)	Specified (e.g. in the period 2005 to 2007)
Measurement procedure	Non-quantitative (e.g. adequate health insurance)	Frequently quantitative (e.g. the number of persons covered per 1000 persons)
Treatment of target groups	Broadly defined (e.g. persons in need of care)	Specifically defined (e.g. families with annual incomes below R5000)

Source: Adapted from Dunn (1994: 196).

The identification of policy goals and objectives is important in view of the continually developmental and changing nature of the needs of the public or the beneficiaries of public policy. The environment within which the government operates also changes because of changing socio-economic, technological and political values that may necessitate a redesign of existing public policies. Questions that may assist the policy analyst in identifying new and relevant policy goals and objectives are listed in Table 3.3.

Table 3.3: Checklist for identifying new and relevant goals and objectives

Question	Practical implications/meaning
Where are we now?	Determine the present position and determine why a change of direction is necessary.
Where do we want to be?	Determine the desired route to follow as well as the means to get there.
What is hindering us?	Identify the constraints upon intended action or impediments to a desired line of advance.
What do we need from other institutions?	Determine what might be needed from other institutions and whether interdepartmental action will be required.

What do we require from whom in our institution?	Determine what actions are required within your institution to achieve your objectives, and determine who the role-players should be and at what level in the hierarchy.
How well do we handle multiple objectives?	Determine the financial and human resource capacity of the institution and its structural ability to deal with multiple objectives. Prioritise objectives and goals within the realistic capacity of the institution to execute a policy.
What will we regard as success?	Establish means not only to evaluate the anticipated effectiveness of particular objectives, but also to establish whether your judgement of success matches the perceptions of those affected by policy outcomes. Cultural and value considerations will be important here.
Should success be quantified?	Determine whether achievements should be quantified as an indication of success, or whether non-quantifiable indications should be applied to determine real success in achieving a policy objective.
On what conditions does success depend?	Determine on a small scale whether assumptions about particular policy outcomes per goal or objective are realistic before embarking on a large-scale and costly implementation of a policy. A particular course does not necessarily imply a particular effect.
What will we do if objectives are not achieved?	View plans or policies as conditional and design alternative contingency options. Be flexible in order to avoid failure. Make remedial adjustments to the policy.

Source: Roux 2000: 118,119

In order to establish the effectiveness of various policy alternatives in achieving the specific policy objectives it is also necessary to determine a way to measure their effectiveness against the identified values and goals. In addition, the policy analyst needs to develop criteria that can be used to rank the policy alternatives. The criteria may help the policy decision-makers to choose between the different policy alternatives. A policy analyst, however, must remember that objectives and criteria for public policy goals must be set by the policy-makers who are

responsible for the policy decisions that are informed by the policy analysis (Quade, 1989: 52, 53).

During this stage the policy analyst needs to look at the problem as a whole, not just at its separate parts. Quade (1989: 53, 54) warns that the process of formulation of the policy problem is highly subjective and recommends that a systematic approach should be followed to determine the problem. Only when the real problem has been defined and the issues clarified will the policy analyst be able to determine whether the investigation will be worthwhile.

3.12.2 Search

The search phase entails identifying policy alternatives informed by the information and relationships of the policy analysis. The policy alternatives may include combinations of alternatives or modifications of those policy alternatives that have been identified. If no policy alternatives can be identified then there is nothing to analyse or to choose between. If a specific policy alternative is recommended by the policy analyst that policy alternative must have been discovered during this phase. Thus it is important that the policy analyst considers a wide range of possible alternatives.

Sources for alternatives include ideas of policy makers and other stakeholders that may have an interest in the policy analysis. In addition, the set of alternative policies may include the current policy as an alternative if it is viable. By comparing the effects of alternative policies to the current policy the policy analyst may be able to determine whether any of the alternative policy proposals are better and to estimate how much of an improvement may be likely (Quade 1989: 54).

In some instances policy analysts may borrow policy alternatives from other jurisdictions. They may consider how other regions or countries have handled

policy problems similar to the one that they are analysing. If other jurisdictions appeared to have handled a problem particularly well the policies adopted by those jurisdictions may be a source of policy alternatives (Weimer and Vining, 1999: 279).

Weimer and Vining (1999: 280 - 282) further states that the policy analyst should not expect to find perfect policy alternative because public policies deal with complex problems and often multiple goals. He warns that the policy analysts should not recommend policy alternative which the analyst may prefer or compare the analyst's preferred policy alternative with less unattractive policy alternatives in order for the alternative to look more attractive. The policy analyst should ensure that the policy alternatives are mutually exclusive and that they provide real choices. In general terms alternatives should be consistent with available resources, including jurisdictional authority and controllable variables.

Quade (1989: 54, 55) highlights the role of supporting studies (scientific, engineering, political, etc.) in policy analysis. He argues that a rational policy recommendation to a complex policy question requires much relevant information, insights and judgements about the policy question. Supporting studies may therefore be useful. Policy analysis can not be done based on superficial knowledge of the policy problem. The information used by the policy analyst needs to be reasonably in accord with reality if the recommendations are to be useful to policy-makers.

3.12.3 Forecasting

Forecasting the impacts of policy alternatives depends on the properties of the policy decision, the situation or environment that exists when the policy is implemented as well as the time during which the policy alternatives are implemented. If the period for which the policy analyst must forecast lies relatively far in the future, or the environment is uncertain, the policy analysts

may need to make several assumptions of the conditions under which the policy alternatives will be implemented. The policy analyst thus projects the impacts of the policy alternatives for each assumption.

Dunn (2004:130) identified three forms of forecasting, namely projections, predictions, and conjectures. **Firstly**, projections are forecastings that are based on the extrapolation of current and historical developments into the future. **Secondly**, predictions are forecastings that are based on explicit theoretical assumptions. Lastly, conjectures are forecastings that are based on informed or expert judgements about future states of society.

Various forecasting models such as statistical techniques, quantitative models and scenario writing are available to the policy analysts. Dunn (2004: 142) advises that a useful way to think about these methods and techniques is to group them according to the bases of the forecasts. Table 3.4 outlines the three approaches to forecasting, their bases, appropriate methods and products as described by Dunn (2004: 142).

Table 3.4: Three Approaches to Forecasting

Approach	Basis	Appropriate Technique(s)	Product
Extrapolative forecasting	Trend extrapolation	Classical time-series analysis Linear trend estimation Exponential weighting Data transformation Catastrophe methodology	Projections
Theoretical forecasting	Theory	Theory mapping Causal modelling Regression analysis Point and interval estimation Correlational analysis	Predictions
Judgemental forecasting	Informed judgement	Conventional Delphi Policy Delphi	Conjectures

		Cross-impact analysis	
		Feasibility assessment	

Source: Adapted from Dunn (2004: 142).

Quade (1989:55) is of the view that statistical techniques and quantitative models are of limited usefulness for policy analysis. Quade points out that the prediction of changes in social and political values and attitudes or in technology may best be done through human judgement. In view of the above policy analysts often use scenario writing to predict future policy environments. In policy scenario writing the focus is on a description of the essential features that may affect the implementation of the policy alternatives that are investigated (Quade 1989: 56).

3.12.4 Modelling

The modelling phase is used to compare the costs and impacts associated with different ways of implementing a future policy recommendation. The policy analyst needs to estimate the performance of the system required to implement the policy option over a range of conditions. The standard approach that policy analysts may apply is to build a model of the system and its environment. The same model may be used to project the outcomes of alternative systems. Models may consist of a set of tables or graphs or they may be written in mathematical language, such as algebraic or differential equations or as computer programs (Quade 1989: 56).

Model building is a creative activity that necessitates iteration and adaptation as more information becomes available. Policy analysts need to be experienced in order for them to decide which type of model should be used in any particular situation. The model building process should, however, be subservient to the objective to optimise the performance of a system. The policy analyst may combine theoretical analysis with empirical research. The theoretical analysis will

inform the gathering the correct data to which sophisticated analytic techniques can be applied (Quade 1989: 57, 58).

3.12.5 Synthesis

The synthesis phase is used by the policy analyst to prepare a comparison of the policy alternatives in order to identify the differences and similarities and to rank the policy alternatives according to one or more criteria so assist the policy-maker to make decisions. Quade is of the view that the decision making process may be enhanced if the policy maker has the option to choose from a closed or at least a restricted set of alternatives (Quade 1989: 58).

Analysts may use two conceptual approaches to rank the policy alternatives. The **first** approach is to determine the task or the level of effectiveness and to then determine the alternative that is likely to achieve this level of effectiveness or accomplish the task at the lowest cost. The **second** approach is to establish the budget available to the policy maker to attain the policy objective and to then determine which alternative may produce the highest effectiveness (Quade 1989: 58, 59).

Policy-makers are also required to judge whether or not a given public policy is worth the cost. A common approach is to express the benefits and costs associated with each policy alternative and to then compare the policy alternatives on the basis of the present value of the net benefits (Quade 1989: 59).

Quade points out that public policy problems can rarely be exhaustive. It is almost always impossible to collect, process and interpret all the information that may be needed for policy analysis. Policy analyses are therefore mostly partial and policy-makers often need to make decision without full information. Policy analyses cost time and money. In view of the above, policy analyses are often far

from finished, when it is presented to the policy-maker. There are almost always unanswered questions that could be investigated further. Because policy analysts must so often present their results before they are fully ready their recommendations may be wrong. Policy analysts therefore accept a certain amount of uncertainty and run the risk of being wrong (Quade 1989: 62).

Other public policy theorists have also developed various presentation of the policy analysis process in addition to that of Quade. Table 3.5 below presents some examples:

Table 3.5: Stages in the policy analysis process

Theorists	Stages in the policy analysis process
Stokey and Zeckhauser (1978:5-6)	<ol style="list-style-type: none"> 1 Determine problem and objectives 2 Identify alternatives 3 Predict consequences of each alternative 4 Determine criteria for measuring the achievement of alternatives 5 Indicate the preferred choice of action
Patton and Sawicki (1986:29-38)	<ol style="list-style-type: none"> 1 Verify, define and detail the problem 2 Establish evaluate criteria 3 Identify alternative policies 4 Evaluate alternative policies 5 Display and select amongst alternative policies 6 Monitor policy outcomes
Walker (1993:6)	<ol style="list-style-type: none"> 1 Identify the problem 2 Specify the objectives

	<ol style="list-style-type: none"> 3 Decide on criteria 4 Select alternatives 5 Analyse alternatives 6 Compare alternatives 7 Implement chosen alternatives 8 Monitor and evaluate results
Anderson (1997:39-49)	<ol style="list-style-type: none"> 1 Problem identification and agenda format 2 Formulation 3 Adoption 4 Implementation 5 Evaluation

Source: Roux 2002: 93-94

Roux notes the following similarities of the abovementioned presentations. All of them start with problem identification and end, mostly, with the focus on monitoring and evaluations (Roux, 2002:94).

Roux (2002:94-95) proposes the following three phase presentation that may ensure that policy analysis is conducted in a systematic and reasonably scientific manner.

Table 3.6: Phases for conducting policy analysis

Phases	Stages in the policy analysis process
Phase 1: Preparatory phase	<ol style="list-style-type: none"> 1 Preliminary identification of apparent problem (need assessment) 2 Collect information relevant to policy formulation 3 Categorising/systematizing

	<p>information</p> <ol style="list-style-type: none"> 4 Identify and define the real problem and the real client (determine priority) 5 Account for possible effect on the environment 6 Decide whether analysis should be undertaken by oneself or by consultant based on the cost of investigation
Phase 2: Theoretical construction	<ol style="list-style-type: none"> 1 Theoretical foundation 2 Choice of a approach and model
Phase 3: Real analysis	<ol style="list-style-type: none"> 1 State facts 2 Develop alternatives 3 Analyse alternatives in respect of effectiveness, values and cost benefits 4 Choose the best alternative 5 Forecast 6 Simulation, if possible 7 Verification (control) 8 Recommendation 9 Implementation 10 Re-evaluate: begin with phase 1

Source: Roux, 2002:94-95

Roux (2002: 95) recommends that policy analysts should remember that it may not be necessary to follow all of the abovementioned phases. Depending on the circumstances analyst should decide whether a complete analysis is required. In addition Roux argues that the phase steps of the analysis may follow in a linear way and not in steps.

3.13 POLICY IMPLEMENTATION

Together with policy-making and policy analysis, policy implementation forms a critical pillar for public administration. Successful policy implementation provides confirmation that the policy is successful. More often than not, however, the result of the implementation of public policy is mixed. The implementation of public policy may have both positive and negative effects depending on whether the public policy allows for discretion and flexibility or whether it is inflexible and rigid. The implementation of public policy also depends on the logic, appropriateness and predictability of the policy and whether the policy can be internalised. Furthermore, implementation becomes increasingly complex “the longer the chain of causality and the more numerous the reciprocal relationships among the links” (Pressman and Wildavsky, 1973:xi-xvii). Additionally, the short-term and long-term effects may differ (Olsen, 2006).

Pressman and Wildavsky (1973) highlight the fact that policy-making should include the issue of policy implementation if it is to be successful. Public policy administration is more than just policy formulation or policy in theory. It is also about policy implementation or policy in practice, namely the making of decisions and policy interpretations that contribute to an overall policy process (Hanekom, Rowland and Bain, 1987:36-44).

Two models of policy implementation were developed in the 1970s and 1980s. **Firstly**, the top-down implementation approach starts from the premise that an authoritative policy decision is made at the top level of government. The implementation officials and institutes are then required to take action consistent with the objectives spelt out in the policy (Sabatier, 1986:22). **Secondly**, in response to the above-mentioned approach, the bottom-up approach to policy implementation argue that policy decisions should start with those officials or institutions that is responsible for implementation of the policy decision because

input from lower levels is necessary for successful policy implementation, which meets local needs (Lipsky, 1978:398).

The debate between the two approaches is not yet concluded. Wissink (2006:191) states that although there are differences between the two approaches they also have much in common. Both views acknowledge that implementation is complex and dynamic. Implementation also involves multi-actors and institutions and happens at different levels. Often implementation happens simultaneously within a framework of pressure from the top and from the bottom.

Warwick (1982) developed another model of policy implementation called the transaction model. This model argues that it is important that policy implementation provides for negotiation among parties with conflicting or diverging interests. The models also argue that implementation direction, actions and parameters to achieve the policy results should be provided. (Warwick, 1982:181). Warwick (1982:90) concludes that the key to successful implementation is continuous willingness to acknowledge and correct mistakes and to learn out of the mistakes and the successes.

In addition, Kuye and Mukamunana (2005:595) add that policy implementation becomes very multifaceted and complex at the international and regional level because it depends largely on the willingness of individual countries. The authors advise that implementation in Africa therefore should be supported by appropriate and targeted policies designed as part of development strategies for poverty alleviation, sustainable development, women empowerment, human rights, environmental protection and good governance.

In summary, it is important to note that the abovementioned models are often applied simultaneously because of pressure from the top down, from the bottom up and from parties with diverging interests. Frequently, the specific features of a

certain implementation case may make one approach more relevant than the other. But it is also recognised that the need exists to synthesise the major features of the models with a view to develop one model that maintains the strengths of the different models.

In conclusion, the literature review shows that common theory on policy implementation is continuously under construction. There is, however, agreement by researchers on the critical explanatory variables of policy implementation. These variables include the following: the policy content, the institutional context, the commitment and capacity to implement as well as support from those that have an interest in the policy. These variables are interconnected and act concurrently. Thus a change in one variable will impact on the other variables, which creates both opportunities and threats to implementation.

3.14 IMPROVING PUBLIC POLICY IN DEVELOPED AND DEVELOPING COUNTRIES

A relationship exists between the level of development of a country and the public policy of that country. The same relationship also exists between the level of development of regions and the public policies of that region. Cloete (2006:84) points out that the level of development of a country is initially determined by the starting social, cultural, economic, political, organisational and technological conditions and later by the policy decisions and actions taken by policy-makers impact on those conditions.

Horowitz (1989:197-212) confirms the abovementioned view and states that policy-making frameworks of developing countries differ substantially from those of developed countries. The main reasons are that there is a significant difference in terms of the capacity of the countries, the power of the state in the countries and the availability of resources and institutional capacity. He also indicates that the differences in public policy processes between developing and

developed countries are more a matter of degree than a matter of kind. Often these small differences in policy processes may result in large differences in the public policy product and the outcome of the public policy product (Horowitz, 1989:197-199)

In view of the above, it is necessary to consider the different public policy characteristics of developed and developing countries and the differences in the policy-making processes between the different societies. Public policies in developed countries are relatively stable because they have developed over time. Policy changes are therefore often incremental except when policy changes are the result of changes to the democratic regime. From a socio-economic perspective, most developed countries have a high income per capita, they are less dependent on foreign donors and employment levels are higher on average when compared with developing countries. In addition, resources are relatively equally distributed, which means the gap between the rich and the poor is small. The economies of developed countries are mainly based on manufacturing and services. Effective infrastructure such as transport, telecommunication, water and energy are available in urban and rural areas (Cloete, 2006:88).

In comparison, policy processes in developing countries are often macro in nature and happen every few years when a new regime is elected. Policy changes are therefore complex because they do not develop over time, are far reaching and not incremental and require considerable changes in behaviour. From a socio-economic perspective, most developing countries have a lower income per capita, they are dependent on foreign donors and employment levels are low on average. In addition, resources are unequally distributed, which means the gap between the rich and the poor are vast. Poverty is endemic and widespread. The economies of developing countries are frequently based on subsistence farming activities combined with mineral extraction and production. Infrastructure such as transport, telecommunication, water and energy is not available in rural areas and very basic in urban areas (Cloete, 2006: 90).

The negative impact of the abovementioned variables, on developing countries policy processes and the incapacity of the governments of developing countries to even achieve basic policy objectives, are confirmed by various scholars of public policy. Rondinelli (1982: 43-73) highlights that often the policy elite and the masses at which the public policies are aimed do not expect the policies to succeed. One reason is that many of the policies are aimed at taking away or balancing the power and privileges of existing interest groups thus resulting in fierce resistance against implementation. Other implementation problems such as a lack of finances, poor infrastructure and limited expertise also contribute to the failure of otherwise well-developed public policies.

Public policy-planning is impeded by a lack of guidelines for implementation and availability of sufficient information needed to make decisions and evaluations (Rothchild and Curry, 1978:23). Kiggurdu (1989) argues that inconsistent public policy and the lack of strategic public institutional capacity rather than a lack of resources impact negatively on public policy implementation in developing countries as well as on the development level of those countries. He observes, however, that developing countries are not very successful in utilising and managing resources that are available. Taylor (2003) confirms that the low level of development in developing countries is also the result of public institutions performing inadequately. He also highlights that the difference in development levels between developing and developed countries is the result of a lack of political leadership.

On the whole, the policy process characteristics of developing countries impact negatively on the policy-making and implementation. The policy processes in developing countries are therefore less effective in terms of protecting, regulating and developing in a sustainable manner.

3.15 PUBLIC POLICY IN AFRICA

Public policies adopted in Africa over the last decade often had mixed results. Some of the reasons for failure of public policy are widespread corruption, misallocation and misappropriation of finances and resources, poor accountability and the non-enforcement of laws and regulations. Other reasons are political interference and government initiating too many policy changes at the same time while resources and institutional capacities are limited (Taylor, 2005:116).

Today, public policy in Africa is still focused on fundamental public administration reform. This involves the control of costs and the number of officials as well as the rationalisation and restructuring of government departments and public institutions. Despite policy decisions to decentralise and to focus the work of government on policy development, standards-setting and monitoring government departments remain unnecessary big (Kiragu and Mutahaba, 2005:6).

In addition to fundamental public administration reform, many African countries are pursuing public policies aimed at improvement of service delivery and response to the public demands. The aim is to improve accountability and transparency and to shift African economies to market economies where the private sector leads economic development. In terms of responding to public demands, however, many African countries claim to have processes in place to consult the public. These consultation processes in practice often just give a semblance of participation rather than actually sharing power between the policy elite and masses (Kiragu and Mutahaba, 2005:8-9).

Policy implementation in Africa also varies from country to country. Kiragu and Mutahaba (2005:14-16) explain the variations in the effectiveness of public policy implementation in terms of a comparison that was made between 10 southern

and eastern African countries. **Firstly**, in a country such as South Africa,,, successful implementation of multiple policy reform initiatives is often linked to early stage liberalisation of countries. The reason is the high degree of legitimacy of the ruling party and the fact that sufficient resources are made available to fund policy changes. In addition, vigorous measures are put in place to integrate government departments and agencies with a view to improve service delivery and accountability.

Secondly, in countries such as Botswana, Tanzania, Namibia and Rwanda, policy change and implementation is successful because these countries adopt a systematic and continuous approach to fundamental public administration reform. These policy changes are driven from the top and are taking place in an environment that also enjoys a high level of political legitimacy. These countries have stable and growing economies and good international relationships, which allow them to fund policy reform initiatives with their own resources as well as with resources of development partners.

Thirdly, another set of countries such as Zambia, Malawi, Kenya and Uganda, that is less successful with implementation of policy change are those that have good public policies on paper but where limited implementation occurs. The implementation problems are mostly linked to a lack of political leadership. The political and economic environment is unstable. Economic growth is often negative because the macro-economic fundamentals are problematic; therefore access to funds internally and externally is extremely difficult. **Lastly**, Mozambique like South Africa is in its own class. Mozambique is the least successful with policy changes compared to the other countries because of civil war, low human resource and financial capacity.

It can be deducted from the above explanations that there are a number of conditions for successful public policy-making and policy implementation, which may apply to most African countries: **Firstly**, there must be a shared vision and

recognition for the need for policy change. **Secondly**, political legitimacy needs to be in place to provide for political space that focuses on consistent and systematic policy reform even if the policy reforms are substantive. **Thirdly**, sufficient resources need to be available because policy changes often are expensive. **Lastly**, a growing economy is conducive for policy change because it can sustain and finance policy changes. In addition, development partners and foreign donors may be willing to support the policy reform efforts. In the long run, however, policy changes need a critical mass of local resources, including local expertise.

With regard to foreign aid in Africa, Calderisi (2006:141-149) explains some of the conditions that continue to impact negatively on the development of Africa. He argues that African politics have been repressive and divisive. African economic policy has been neglected. Most African governments do not share basic economic facts with their citizens. Africa's agricultural industry has been hindered because of bad public policy. Africa has not concerned itself with foreign markets and has thus also not capitalised on the crucial link between trade and development. They, therefore, undermined private sector development and were bypassed by foreign investors. Calderisi warns that there is not enough foreign aid to stem the economic losses that Africa continues to face. Where foreign aid is available, it is often used ineffectively and is thus wasted because it is not supported by good public policy.

In conclusion, Nzwei and Kuye (2007:202) highlight the fact that there are no quick fixes in terms of the development of public policies and institutions that are required for economic growth in Africa. The authors recommend an approach that is based on the unique social, cultural and historic exigencies of the continent. It is, however, also important to recognise that what should be done or not done cannot ignore the demands from transformation towards a capitalist economy, the development of drivers of production and the promotion of open market-friendly economies (Nzwei and Kuye, 2007:197).

3.16 STATE INSTITUTIONS

In this part of the literature review, various perspectives on institutions and the theory of institutions are examined. Specific aspects of state institutions will be covered as these institutions are responsible for public policy-making and implementation.

State institutions in the context of this study are a collective of people that deliver public goods and services to people outside the institutions, rather than to people inside the institutions. State institutions include government, government agencies, government co-operation and sometimes non-profit institutions. These institutions can be described in terms of the following characteristics: they are created by society to formulate, interpret and implement public policy; they are publicly owned and controlled; they are funded by taxes, user fees and government appropriation; they usually do not seek profits; and they are sometimes part of a government agency with some independence (Henry, 1992:304).

In addition to the abovementioned characteristics, Umar and Kuye (2006:218) highlight the fact that state institutions should be understood in the broader context of the state and its politics, which implies that state institutions have to meet competing and often contradictory values from the state and the various stakeholders. In the developing country context in particular, it is important to recognise that developing countries are not a homogeneous unit. These countries are heterogeneous in many aspects including geography, social and economic development, size, density of the population, urbanisation, technological advances, and availability of natural resources, political systems, culture and religions (Kiggundu 1989:11). Other differences relate to distribution of income, wealth, quality of life, opportunity and organisational depth. Kiggundu (1989:11) confirms that these differences are so compelling that it requires a

cautious approach in terms of generalisation. He, however, also argues that in spite of the abovementioned differences, these developing countries have so much in common, particular as it relates to a lack of infrastructure, an absence of administrative and governmental expertise and the inability to make the transition to globalisation at the same rate as developed countries, that it makes sense to deal with them as if they are a homogeneous group.

3.17 MODELS OF INSTITUTIONAL THEORY

Henry (1992:51-64) divides institutional theory into the following three models, namely the closed model, the open model and the synthesis model. Each of the models has its own features, which are to some extent different and in other cases similar.

The closed model of institutions has the following features as identified by Henry (1992:51): tasks are routine and occur in stable conditions, they are specialised and they are prescriptive in terms of the way tasks are done; conflict in a closed model institution comes from the top of the institution and the institution is perceived as a hierarchic structure; responsibility is emphasised with a focus on the institutional subunit; interaction in the institution is vertical and the style of interaction is informed by clear super-ordinate and subordinate relationships; and loyalty to the super-ordinate is often emphasised at the expense of performance.

In comparison the open model of institutions has the following features (Henry, 1992:54): tasks are non-routine and occur in unstable conditions; common tasks are informed by specialised knowledge and they are aimed at getting the task done; conflict in the open model of institution comes from interaction with peers and the institution is perceived as a network structure; responsibility is emphasised in the context that all institutional members contribute to all institutional problems; interaction between people in the institution is vertical and

horizontal and the style of interaction is informed by advice to accomplish certain outputs; and performance of tasks is often emphasised at the expense of obedience to the super-ordinate.

Henry (1992:60-62) describes the following differences and similarities of the two models: the first difference involves the assumptions about the institutional environment. The closed model assumes a stable, routine environment. The open model assumes an unstable, non-routine environment. Both models, however, assume that the institution will take action to thrive and adapt to survive. In this regard, the closed-model institutions often have to adopt to meet demands from an unstable environment. Conversely, open-model institutions have to adapt to meet demands to determine some structure and routine relative to their environment. Thus, whether open or closed, institutions must change as their environments change. Another difference involves the assumptions about the nature of human beings. The closed model assumes that people do not like to work, needs supervision, are motivated by threat or punishment and cannot contribute to the solution of institutional problems. The open model assumes that people like to work, exercise self-control and are motivated by social and ego rewards and can contribute to the solution of institutional problems. In this regard, it is clear that institutions predicated on any one of the two models will attract people that find a specific model appealing.

The essence of the third model, the synthesis model, is that an institution often operates as an open model, in an uncertain environment with a collection of people that each has his/her own goals. These institutions, however, introduce routine and rationalise internal work procedures and external relationships whenever possible (Henry, 1992:64).

To conclude, institutions are often required to adapt to a changing environment if they want to survive and thrive. This is true whether the institution is based on the closed, open or synthesis model of institutions. To adapt to a changing

environment is difficult because it involves human complexities, are often characterised by formal and informal relationships and are integrated into a larger social system, which requires sustained co-operative arrangements.

3.18 STATE INSTITUTIONAL DEVELOPMENT

Institutions are often evaluated by society for effectiveness, efficiency or relevance depending on the nature of the institutions. Henry (1992; 68-70) differentiates between the following institutional tests. The effectiveness test assesses an institution's ability to fulfil and complete its mandate without taking into account how many resources are consumed to achieve the mandate. The efficiency test assesses an institution's ability to fulfil its mandate while using the fewest resources possible. The social test assesses an institution's ability to remain relevant and useful in achieving specific social goals. Both the efficiency and social tests are useful tools that society can use to evaluate state institutions.

Evaluations of institutions often identify the need for change. Institutional development is the process of planned institutional change that is deep and long-lasting and responds to the internal and external environmental dynamics. The aim of these developments is to increase institutional effectiveness and efficiencies by integrating individual growth with institutional goals (Shafritz and Russell, 2005:260-261).

Institutional change must be planned in advance and implemented gradually if it is to be successful. It requires top management support and commitment. It also needs a specific strategy such as institutional diagnosis, process consultation, team building and conflict management (Shafritz and Russell, 2005:261). Massamba, Kariuki and Ndegwa (2004:34) confirm the importance of leadership for institutional development because institutional reform needs to be supported by changing behaviour of top management. They also advise that state

institutional change is often slow due to its inherent conservatism and because change is often a function of its legal mandate.

3.19 INSTITUTIONAL DEVELOPMENT IN DEVELOPING COUNTRIES

The need for developing countries to develop its institutional capacity in a globalised economy offers an opportunity for the development of creative responses (Massamba, Kariuki and Ndegwa, 2004:30), which meet the needs of their societies and take into account regional and national interest. Maur (2008:2) highlights the fact that institutional development should be approached in a holistic manner in order to seek regional solutions to deal with market failures. Approaching regional institutional development in a holistic manner in Africa could in theory mean that institutional capacity that is in the regional interest can be provided by any country in Africa. This, however, will require co-ordination between countries in order to ensure a fair distribution of the institutional capacity between countries. It could also mean that countries with stronger institutional capacity provide assistance to countries with weaker capacity. Lastly, it could mean that countries network increasingly and that this provides improved institutional capacity through the sum of the efforts of the participating countries (Maur, 2008:15).

One of the benefits of regional institutional development is that it offers cost-saving institutional capacity, which enables government to meet demands for regional public goods (Sandler, 2006). Another benefit is that regional institutions are in a better position to carry forward regional institutional agendas and lastly, that regional representation can increase the bargaining power of its constituency in international negotiation forums, such as the international standards-setting organisations (World Bank, 2005). It is however also important to ensure that regional institutional development takes into account international rules in order to guarantee that it is recognised internationally (UNIDO, 2006).

In conclusion, regional institutional development can be developed to address capacity needs, which are often expensive and difficult to provide. Regional institutions may be able to deliver more over a shorter period of time provided, however, that the political will for policy integration exists.

3.20 INSTITUTIONAL DEVELOPMENT IN AFRICA

The African Union Economic Report on Africa of 2007 (EC, 2007:12) confirms the need for strengthening its institutions as a prerequisite for economic growth through diversification. The abovementioned report highlights the need for appropriate institutional development if Africa wishes to achieve both its macro-economic and new sector and industrialisation policies (EC, 2007:163). The report further promotes the consolidation of institutional development both at an aggregated level (e.g. the legal system) and at a micro level (e.g. business regulations).

Furthermore, Caulfield (2006:17) is of the opinion that countries in Africa share common institutional reform experiences largely because of policy conditionality of multilateral donors and aid dependency. Policies of the last 15 years reflect a preference for downsizing of institutional capacity. New approaches to institutional development aimed at service delivery include the establishment of semi-autonomous state institutions, public-private partnerships and the reform of public utility companies. Kiggundu (1989:3) confirms the need for attention to develop and sustain effective state institutions if development initiatives by governments, aid agencies, non-governmental organisations and the private sector are to be successful.

Commentators on development often argue that institutional development is constrained because of weak state capacity which in turn is undermined by slow economic growth, a growing aid dependency and an underdeveloped civil society (Caulfield, 2002). Caulfield (2006:16) states, however, that the above argument

gives insufficient recognition to the political prominence of the African public sector and ignores the African history of autonomous public bodies. It also ignores the reality that necessitates public officials to play the aid game because of the realities of aid dependency while at the same time responding to the expectations of the public.

Hirschmann (1999:287-305) confirms that the focus of structural adjustment programmes to downsize state institutions and devolve responsibilities may have gone too far. The view is that deregulation strategies and decentralisation should have been supported by strengthening of state institutional capacity. In addition, it is important to take into consideration the different approaches to institutional development between francophone Africa and English-speaking Africa as a result of linguistic and economic linkages with former colonial powers and as a result of policy choices of these powers. Francophone countries that received donor support from France had to introduce structural adjustment programmes focused on deregulation of the public sector and specifically its state-owned enterprises. English-speaking countries, in contrast, had to introduce structural adjustment programmes that focussed on personnel reforms, skills development and establishment of service delivery institutions (Caulfield, 2006:18). Although different in focus, the overall direction of institutional development across both francophone and English-speaking Africa confirms a donor policy preference for downsizing and devolution.

Finally, however, both deregulation and devolution have implications for government oversight over state institutions and public entities. The main implication is that government capacity needs to be strengthened in the context of decentralised reforms. The focus should be on their oversight and steering role in delivering institutional development. The aim should be to ensure ownership at a political level and effective communication between the bureaucracy that develop public policies and the technocrats that need to implement the policies and deliver public services.

3.21 CONCLUSION

This chapter provided an overview of the literature on public policy-making and policy analysis as a field of study because public policy is what government chooses to do or chooses not to do.

The chapter concluded that although there is no universally accepted definition, theory or model in this field of study, a wide variety of definitions, theories and models are available and used to study this field in detail. Research and the collection of information on Public Administration are over 100 years old although public administration has been practised for millennia. Some of the very early Public Administration research work, for example the work of Woodrow Wilson, is still relevant to the current main theme of Public Administration.

The chapter discussed the various models of policy-making that have been developed. Each of these models or parts of these models may be appropriate and useful for specific policy problems. In addition, the origins and development of frameworks for policy analysis over the past years point to the increased need for specialised information in changing societies. The chapter also considered the various stages of the public policy analysis process that a policy analyst may use to scrutinise public policy and develop policy options.

The significant differences that exist in policy processes between developed and developing countries were highlighted in this chapter because it often impacts on the policy-making and implementation processes. African public policy initiatives are still very fundamental. Therefore, the policy space needs to be created for public policy initiatives that support development and allow for a pragmatic approach to policy reform creating a balance between macroeconomic reform policies and economic policies. African economic policies need to be developed

to redress the negative impact of macroeconomic reforms on diversification and transformation of their economies, which that started in the late 1970s.

The theory on institutional development confirms that institutions, irrespective of the theoretical model the institution is based on, will have to respond to a change in their environment if they want to survive. Institutional development in Africa has the opportunity to respond in a creative manner, which may include the establishment of regional institutions meeting regional needs and demands for public services.

CHAPTER 4

A CASE STUDY REVIEW OF INTERNATIONAL AND REGIONAL TRENDS IN TECHNICAL REGULATORY REFORM

4.1 INTRODUCTION

The previous chapter reviewed relevant literature on Public Administration in general and public policy and institutional development in particular. This section of the study review policy options instigated by governments at international and regional level to effect technical regulatory reform and the institutional capacity that is required for implementation of the policy options.

This chapter reviews both international and regional cases with a view to identify policy trends in technical regulatory reform as well as developments around institutional arrangements influencing policy implementation. At international level, the case study reviews the World Trade Organisation Agreement on Technical Barriers to Trade as a key policy instrument for technical regulatory reform with a view to develop recommendations for an African approach. At regional level, policies on technical regulations and standards of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development are reviewed with a view to make comparisons or propose generalisations.

The chapter investigates the institutional arrangements at international level and provides a general explanation of standards, metrology and accreditation requirements at national and regional level more specifically reflects on the arrangement and status of technical institutional capacity in the Southern African Development Community.

4.2 INTERNATIONAL TECHNICAL REGULATORY REFORM

The Uruguay Round of multilateral trade negotiations significantly reduced tariff barriers to trade. During the same round, the World Trade Organisation Agreement on Technical Barriers to Trade was negotiated with a view to ensure that countries use technical regulations (non-tariff barriers) for no other purpose than to protect the health and safety of the public and the environment. Many of the developing countries have not yet been able to take full advantage of this agreement which may support economic recovery for the continent. Exporters from developing countries therefore continue to face non-tariff barriers in the form of standards, technical regulations and conformity assessment procedures.

4.2.1 The World Trade Organisation Agreement on Technical Barriers to Trade

The World Trade Organisation was established in 1995 after the Uruguay Round of multilateral trade negotiations, which took place from 1986 to 1994. The main objective of the World Trade Organisation is to help trade flow freely, fairly and predictably. It does this by administering trade agreements and by assisting developing countries in trade policy issues through technical assistance and training programmes. The World Trade Organisation is a forum for governments. Businesses can be represented only through their governments. Businesses can also obtain direct assistance from the World Trade Organisation through participation in the training programmes of the World Trade Organisation. Businesses also benefit from the implementation of the agreements, which seeks to facilitate international trade (ITC, 2004:1).

The World Trade Organisation members agree on the rules and regulations that are to be applied multilaterally by consensus. They, however, do not lose their sovereignty when they take decisions with their partners on these rules. In addition the agreements take account of the different levels of economic

development in member countries as well as the difference in commercial and economic policies of member country governments (ITC, 2004:2).

The rules and regulations developed by the World Trade Organisation also aim to eliminate unnecessary barriers to trade. These barriers make it difficult for an exporter to sell his/her products. These measures are often considered undesirable in the context of world trade, because they restrict the flow of goods and they are detrimental to the consumer because they drive prices up.

At the end of the Uruguay Round of multilateral negotiations, the World Trade Organisation Secretariat estimated that implementing the World Trade Organisation Agreements and the consequent reduction of trade barriers could increase world trade by up to US\$ 510 billion by 2005 (WTO, 2008). These barriers take many forms and are generally divided into two broad types, namely tariff barriers and non-tariff barriers. Standards and technical regulations are considered non-tariff barriers (ITC, 2004:5).

Historically, every country has developed national standards to deal with the needs of industry and society at national level. These standards may or may not have been aligned to international best practice. The result has been that national standards for the same product differed from country to country. However, due to the increase in world trade and the increased concentration of manufacturing in certain parts of the world, these differences soon became a real problem for manufacturing industries, especially those in countries that were major exporters. On the other hand, local industries were quick to realise that the differences could protect them from imports, and these local manufacturers therefore continued to support these differences. The local manufacturers, however, ignored the fact that local industries using different standards would, in turn, find it difficult to export to other countries because of the differences (ITC , 2004:17).

In addition, national regulators, driven by the need to solve a specific problem at national level, often developed technical regulations without considering international practices or even their own national standards. The result was that technical regulations all over the world were different and it was becoming increasingly difficult in general for imported products to meet all the different requirements (ITC, 2004:17).

Negotiators at multilateral trade negotiations, which commenced after World War 2, realised the abovementioned problem. One of the results of the Tokyo Round of negotiations, which ended in 1979, was the publication of a voluntary standards code, which was adopted mainly by developed countries. The code aimed to ensure that standards and technical regulations were based on international best practice, and thereby did not constitute unnecessary barriers to trade. The code was extended and clarified during the Uruguay Round of negotiations, and it was re-established as the World Trade Organisation Agreement on Technical Barriers to Trade. The agreement is compulsory for all World Trade Organisation members. The World Trade Organisation Agreement on Technical Barriers to Trade makes provision for special and differential treatment for developing countries. The problem, however, is that producing to standards lower than those of the rest of the world makes it harder for developing countries to export.

The World Trade Organisation Agreement on Technical Barriers to Trade was negotiated because governments recognised that the number of technical regulations and standards adopted by countries has grown significantly as a result of governments response to demands from the public for safe, high-quality and environmentally friendly products. Governments also accepted that technical regulations facilitate technical harmonisation and trade in economically integrated areas. They, however, also understood the implications of more technical regulations, namely that the need to comply with different foreign technical regulations and standards involves significant costs for manufacturers and

exporters thus impacting negatively on their efforts to grow their enterprises. The second implication is that there is the risk that technical regulations and standards are adopted and applied by governments with the sole purpose to protect domestic industries.

The World Trade Organisation Agreement on Technical Barriers to Trade includes the following key principles that government and regions agreed to during the negotiations:

- **Firstly**, the non-discriminatory principle of the most-favoured nation and national treatment provisions of the agreement (Article 2.1), which provides for the equal treatment of domestic and imported products in terms of technical regulations.
- **Secondly**, the necessity principle, which provides for the use of discriminatory domestic technical regulations if they are considered necessary for the efficient realisation of legitimate domestic policy goals with regard to safety, health, environmental control and consumer protection (Article 2.2).
- **Thirdly**, the trade restrictiveness principle which requires that legislators choose technical regulations that causes the least distortion to trade. This will prevent them from becoming unnecessary technical barriers to international trade (Article 2.3).
- **Fourthly**, the proportionality principle, which implies that the cost of technical regulations should be in proportion to the benefit in terms of health and safety that they are expected to bring. It also implies that domestic technical regulations should not be more onerous to foreign investors and exporters (Article 2.8).

- **Fifthly**, the use of the harmonised measures principle, which encourages the use of international harmonised technical regulations to improve production efficiency, facilitate free trade and minimise any negative effects of domestic technical regulations on trade (Articles 2.4 and 2.5).
- **Sixthly**, the mutual recognition of equivalence of regulatory measures principle, which recognises that regulatory objectives of trading partners are often equivalent although their technical regulations may differ and trade opportunities can be expanded through mutual recognition of the equivalence of each other's technical requirements for products or services and of each other's conformity assessment procedure (Article 2.7).
- **Seventhly**, the transparency principle, which requires that countries publish technical regulations prior to their entry into force and that a reasonable time should be allowed for comment and for consideration of the comments prior to the adoption of a final technical regulation. This will also make it possible for competitors to adapt their products and methods of production in terms of the technical regulation (Articles 2.9 and 2.12).
- **Lastly**, the special and differential treatment principle, which provides that developing countries may adopt technical regulations, standards or test methods aimed at preserving indigenous technologies and production methods and processes compatible with their development needs. It also recognises that developing countries are not obliged to use international standards in view of their particular technological and socio-economic conditions. In addition, developing countries can request international standards bodies to prepare international standards for products that developing countries want to trade in (Articles 12.4 and 12.6).

The policy implications of these principles are important. Different countries may have different technical regulations and may require different conformity assessment procedures because of differences in local tastes or levels of income, as well as geographical or other factors. Countries therefore still have a high degree of flexibility in the preparation, adoption and application of their national technical regulations at the levels they consider appropriate.

This regulatory flexibility is, however, limited by the requirement that technical regulations should not create unnecessary obstacles to trade. In this regard the World Trade Organisation Agreement on Technical Barriers to Trade recommends that product regulations should prescribe performance rather than design or descriptive characteristics (Article 2.8). A further implication is that countries need to regularly review technical regulations for relevance in terms of the policy objective. Obligations to avoid unnecessary obstacles to trade also apply to conformity assessment procedures (Articles 5.2.3 and 5.2.6). This means that imported and locally manufactured products must be treated in the same way with respect to any fees charged to assess their conformity with regulations and the confidentiality of information about the results of conformity assessment procedures (Articles 5.2.4 and 5.2.5).

In terms of harmonisation, the World Trade Organisation Agreement on Technical Barriers to Trade encourages countries to use existing international standards or parts of them for their national regulations. The argument is that relevant international standards are presumed not to create an unnecessary obstacle to international trade. Similar provisions apply to conformity assessment procedures. The implication, however, is that countries need to participate actively and constructively in international standardisation bodies to ensure that the international standards reflect country-specific production and trade interests.

In terms of transparency, countries must notify draft regulations to the World Trade Organisation Secretariat for other countries to make comments (Article 2.10). In addition, each country must set up a national enquiry point

which acts as a focal point where other World Trade Organisation members can request and obtain information and documentation on notified technical regulations, standards and test procedures, whether impending or adopted.

In terms of mutual recognition, Article 6.3 of the World Trade Organisation Agreement on Technical Barriers to Trade encourages countries to negotiate with other countries for the mutual acceptance of conformity assessment results. These arrangements require a high degree of mutual confidence in testing and certification bodies as a prerequisite. Additionally, Article 6.1 of the World Trade Organisation Agreement on Technical Barriers to Trade recognises the need for conformity assessment bodies to comply with relevant guides or recommendations issued by international standardisation and accreditation bodies in order to validate their technical competence.

In conclusion, the World Trade Organisation Agreement on Technical Barriers to Trade provides exporters with the following benefits (ITC, 2004:194-195):

- The World Trade Organisation Agreement on Technical Barriers has alleviated the problem that enterprises have to obtaining information on technical regulations and conformity assessment procedures in export markets by requiring the World Trade Organisation members to establish enquiry points from which exporters can obtain information on these issues. Exporters can get information relevant to their export products direct from the national enquiry points of the countries to which their products are being exported or through their national enquiry point.
- When a proposed technical regulation or conformity assessment procedure is introduced in a country which is not in accordance with the relevant international standard and that may have a significant impact on the trade of other exporters, it must be notified to World Trade Organisation. Exporters that may be affected can submit

comments on such proposals. The comments must be submitted through their governments.

- Standards bodies in World Trade Organisation member countries are required to publish their standards work programmes at least once every six months in terms of the provisions of the Code of Good Practice for the Preparation, Adoption and Application of Standards (Annex 3 of the World Trade Organisation Agreement on Technical Barriers). This may enable exporters to keep track of proposed standards in the markets to which they wish to export. They can obtain the required information through their own national standards body or through the relevant standards body.
- Members of the World Trade Organisation are generally required to harmonise their technical regulations by basing them on international standards. This may ultimately lead to a situation where businesses will be able to export the same product to various markets without having to redesign it.
- Conformity assessment procedures to proof compliance with technical regulations have to be the same for both domestic and imported products. For example, a certification mark for a group of product group should be available to domestic producers and foreign manufacturers under the same conditions. This enables foreign producers to compete on an equal footing with domestic producers.
- Member countries are encouraged to negotiate agreements for the mutual recognition of the results of each other's conformity assessment procedures. Mutual recognition agreements eliminate the need for re-testing or re-certification of the product in an importing country.
- Members are required to consider accepting as equivalent the technical regulations of other members, even if these regulations differ from their own. An important condition for equivalence is that members should be satisfied that these regulations adequately fulfil the

objectives of their own regulations. The process of harmonising existing technical regulations is lengthy but if successful it does facilitate trade.

- If exporters are convinced that their product is being denied entry into a foreign market because of unjustified technical regulations or conformity assessment procedures they can take the matter up with their government. Their government can then deal with the matter on a bilateral basis with the government of the importing country. If the problem is not solved bilaterally the matter may be raised with the Dispute Settlement Body of the World Trade Organisation.

4.2.2 Committee on Technical Barriers to Trade

The World Trade Organisation Agreement on Technical Barriers to Trade Agreement is administered by a committee known as the Committee on Technical Barriers to Trade. The Committee on Technical Barriers to Trade is tasked with the promotion of common practices amongst countries when they formulate and administer technical regulations. The Committee on Technical Barriers to Trade is critical in that it provides advice to countries to improve the quality and cost-effectiveness of national technical regulations. The absence of a public policy on technical regulatory reform may exclude countries from global trade opportunities and thus impact negatively on economic growth. The onus is thus on countries to pace the reform of their technical regulations and harmonise them with world trade standards. Article 15.4 of the World Trade Organisation Agreement on Technical Barriers to Trade provides for a three-yearly review of the operation and implementation of the agreement with a view to ensure mutual economic advantage and a balance of rights and obligations

4.2.3 Tri Annual Reviews of the World Trade Organisation Agreement on Technical Barriers to Trade

The implementation of the World Trade Organisation Agreement on Technical Barriers to Trade Agreement is reviewed every three years. The Committee on Technical Barriers to Trade Committee concluded four reviews in November 1997, November 2000, November 2003 and November 2006 respectively (WTO:2008). It is important to take note of the elements considered during each review. Each of the reviews covered implementation and administration of the agreement, good regulatory practice, conformity assessment procedures, transparency, technical assistance and special and differential treatment at national level. The reviews also reflect the work areas of the Committee on Technical Barriers to Trade.

With regard to the implementation and administration of the World Trade Organisation Agreement on Technical Barriers to Trade Agreement, countries are required to submit statements of implementation and administration of the World Trade Organisation Agreement on Technical Barriers to Trade. In total, 108 members have submitted their statements.

With regard to work areas, good regulatory practice is promoted by the Committee on Technical Barriers to Trade because the view is that it can be used to avoid unnecessary obstacles to trade in the preparation, adoption and application of technical regulations, standards and conformity assessment procedures. Initially, good regulatory practices focused on benefits for openness, transparency and accountability. Lately, the focus moved towards the identification of elements of good regulatory practice such as necessity, that technical regulations should not be more trade-restrictive than necessary to fulfil a legitimate health and safety objective, that the same conformity assessment procedures should apply to local producers and importers and that an assessment of the costs and benefits of proposed regulations, including likely impact on consumers, trade and industry, should be considered.

In terms of the use of conformity assessment procedures, the focus is on non-discrimination, preventing unnecessary obstacles to trade, the use of international standards, transparency, technical assistance and special and differential treatment. Experiences on the use of different types of conformity assessment procedures, such as the use of supplier's declaration of conformity, which is of particular importance to developed countries, were also covered in the last two reviews. Supplier's declaration of conformity is, however, difficult for developing countries to implement. The use of accreditation to verify the competence of conformity assessment bodies was also covered because accreditation is widely recognised as a tool to demonstrate the technical competence of conformity assessment bodies in exporting countries. Problems in relation to accreditation experienced in developing countries include insufficient number of accredited bodies for the assessment of conformity at domestic or regional level, high costs in obtaining foreign accreditation, difficulties in establishing internationally recognised accreditation bodies and insufficient conformity assessment capacity ready for accreditation.

In terms of international standards, the World Trade Organisation Agreement on Technical Barriers to Trade reviews continue throughout to promote the use of relevant international standards as a basis for the technical requirements and for conformity assessment procedures. In this regard, the review identifies the importance for developing countries to play a full part in the preparation by appropriate international standardising bodies of international standards and for conformity assessment procedures. The fact that limited resources available to developing countries may impact on effective participation was recognised.

With regard to the transparency obligations under the World Trade Organisation Agreement on Technical Barriers to Trade, the focus relates to the obligation of countries to notify the World Trade Organisation if new or amended national technical regulations and conformity assessment procedures are introduced and to the establishment and maintenance of a national enquiry point, which is able

to answer all reasonable enquiries from other interested parties regarding the notifications.

The reviews also advise that developed countries provide differential and more favourable treatment to developing countries. It appears from the reviews that this element does not receive as much attention as the other elements and only a voluntary exchange of information is encouraged. This might be an indication of the lack of attention given to the interests of developing countries. The fourth triannual review, however, identified the need for a more focused exchange of information, specifically on how special and differential treatment provisions are taken into account in the preparation of technical regulations and conformity assessment procedures. The review also highlighted the need to link discussions on special and differential treatment with the need for technical assistance.

To conclude, the reviews also showed that standards and technical regulations remain barriers to trade. The reasons are that especially developing countries lack the knowledge, institutions and finances to meet the requirements of developed countries.

4.2.4 The relationship between standards and technical regulations

Technical regulations and standards are two distinct concepts. There is nevertheless a link between standards, which determine product characteristics that and may be used on a voluntary basis, and technical regulations, which use standards as the basis for imposing compulsory product characteristics.

The World Trade Organisation Agreement on Technical Barriers to Trade Agreement provides the following definitions (WTO: 2006):

- *Technical regulation*: A document which lays down product characteristics or their related processes and production methods, including administrative provisions, with which compliance is mandatory. It may also cover

terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

- *Standard*: A document approved by a recognised body that provides, for common and repeated use, rules, guidelines or characteristics for products and their related processes or production methods, with which compliance is not mandatory. It may also cover terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Technical regulations are thus mandatory and in the context of the World Trade Organisation Agreement on Technical Barriers to Trade Agreement this means that they form part of legislation. If a company exports a product to a market that imposes technical regulations on that product, the product needs to comply with them, or it will be denied market entry. Technical regulations are the responsibility of governments and cover the following two aspects. **Firstly**, product characteristics (which might be given in a standard) that products or processes have to comply with; and **secondly**, administrative procedures (e.g. testing, certification, inspection, approvals, sanctions) that suppliers have to follow (ITC, 2004:3-4).

Standards, on the other hand, are voluntary in nature. They do not form part of legislation. Standards may be developed by a variety of bodies in the public or private sector. The governments of World Trade Organisation member countries however need to ensure that these bodies develop national standards in accordance with the requirements of the World Trade Organisation Agreement on Technical Barriers to Trade Agreement as set out in annex 3 of the World Trade Organisation Agreement on Technical Barriers to Trade Agreement in terms of the *Code of Good Practice for the Preparation, Adoption and Application of Standards*. Standards specify only the product characteristics, or technical

requirements, with which products or processes have to comply in order to meet the standards (ITC, 2004:3-4)

While technical regulations and standards are not the same, the World Trade Organisation Agreement on Technical Barriers to Trade Agreement stipulates in article 2 that the product characteristics imposed by technical regulations should be based on international standards.

The term *based on* may be defined in a number of ways. **Firstly**, it may refer to the direct referencing of a standard in the technical regulation. **Secondly**, it may refer to the use of a standard that will be regarded to satisfy the requirements of a technical regulation. **Lastly**, it may refer to the use of the contents of a standard as a basis for the text in the technical regulation. In this regard the text from the standard on the technical requirements for a product would be inserted in the body of the regulation (ITC, 2004:4)

A country's legislative framework and its historical developments determine the choice of route to follow. Sometimes the preferences of regulators may have an influence on how standards are used. No clear common trend can be identified (ITC, 2004:4).

4.2.5 Influencing standards development and technical regulations

An important principle underpinning the development of standards is that it must be an open, transparent, impartial, stakeholder-driven and consensual process. It is stakeholder-driven in that interested parties are given the chance to provide input during the process (ITC, 2004:10).

Many developed countries and many developing countries have national standards bodies responsible for publishing national standards. The size and capacity of these institutions differs substantially between developed countries

and developing countries. Many developed countries have standards bodies that participate actively in international and regionally standards development processes, regularly publish national standards that were developed through technical committees, sell national regional and international standards and provide standards information to manufacturers and exporters in their countries. Many developing countries and specifically least developing countries have limited standards activities that include not having a dedicated standards body, limited participation in international and regionally standards development processes and rudimentary standards information available to manufacturers and exporters in their countries. Most of these bodies are members of the International Standards Organisation and the International Electrical Commission. The International Standards Organisation and the International Electrical Commission statutes require that their members should follow the stakeholder consensus principle in developing national standards (ITC, 2004:10).

Standards bodies in World Trade Organisation member countries are also required to follow the Code of Good Practice for the Preparation, Adoption and Application of Standards, which forms annex 3 of the World Trade Organisation Agreement on Technical Barriers to Trade Agreement. This code of practice also requires the standards-making process to be open and transparent. Member countries are therefore obliged to ensure that national standards-making processes are stakeholder-driven and consensus-based (ITC, 2004:11).

Work on national standards is often used to influence work in international standards bodies. If the national standards body is a member of an international standards body it may take part in the work of related international technical committees (ITC, 2004:11). It is, however, important to realise that international standards are at the moment very much a product of the private sector. Around the time that the European Single Market came into force in 1992, approximately 70% of standards were set nationally, with the rest coming from regional and international sources. Ten years later the proportions were exactly reversed

(O'Brien, 2003:14). In addition, the European standards bodies, such as the European Committee for Standardisation, the European Committee for Electrotechnical Standardisation and the European Telecommunications Standards Institute, as well as the International Standards Organisation, develop and amend standards with the participation of large numbers of technical experts and interested parties that are often from the private sector.

Standards development processes are time consuming and expensive. The European Committee for Standardisation, for example, needs about 8 years to draft and obtain consensus on a standard. According to O'Brien (2003:15.) the returns may be substantial, **firstly**, because producers, users and others who might be affected, have partial ownership of the standard and are aware of what has gone into its formulation and **secondly**, there may be widespread awareness of the alternatives that were examined and the reasons why they were eventually rejected.

Influencing technical regulations is far more difficult. The reason is that technical regulations deal with the sovereign rights of countries. If national technical regulations are based on international or national standards, a private company or a private person may influence the part of the technical regulation that deals with product characteristics through the standards-development process. However, in terms of the administrative procedures, an individual private company or private person has little chance of influencing the process as this is a government responsibility. In some countries, the government or regulators do seek the views of industry, consumers and other stakeholders before implementing technical regulations (ITC, 2004:10).

O'Brien (2003:14) is of the opinion that the growing privatisation and internationalisation of standards development may help to eliminate the fragmentation that has characterised technical regulations around the world. Because companies and markets are increasingly internationalised they are also

keen to see common technical regulations across national boundaries. Common technical regulations are beneficial because it increases predictability for exporters and increase the potential of economies of scale from production runs (O' Brien, 2003:17).

4.2.6 Technical regulations from country to country

Notwithstanding the objectives set out in the World Trade Organisation Agreement on Technical Barriers to Trade to harmonise technical regulations countries are not anywhere near to meeting this aim. The following examples from the study, *An Assessment of the Costs for International Trade in Meeting Regulatory Requirements*, issued by the Organisation for Economic Co-operation and Development (OECD: 2000) serve to illustrate the problem. The study compares the technical regulations of Japan, Germany, the United Kingdom and the United States on a number of products. The following findings were made for terminal telecommunications equipment and speciality dairy products:

For terminal telecommunications equipment a fairly high level of harmonisation was found. Although differences in standards still exist, the effect of these differences has been reduced by mutual acceptance of foreign standards. The conformity assessment procedures have been streamlined and the deregulation process has led to competition between the conformity assessment service providers in each country authorised to conduct conformity assessment. These service providers are for the most part accredited for several countries or have partnerships across national borders, allowing for a one-stop-shop approach. A remaining problem for exporters is to identify local industry voluntary standards and customer requirements (ITC, 2004:12).

For speciality dairy products, the picture is very different. The standards and conformity assessment procedures are a major issue for speciality products, but less so for bulk goods. The strict compulsory sanitary requirements lead to

significant costs of compliance and are particularly onerous for importers because of differences in the mandatory standards of the importing and the exporting country. The systems of conformity assessment are based on rigorous border inspections which impose further costs. The problem of long storage times at the border also results in reduced shelf life in the shops. Lastly, standards and conformity assessment requirements may change at short notice and access to such information is not always possible. The exported product is then denied entry to the market because it does not comply with the new rules and has to be destroyed (ITC, 2004:12).

4.2.7 Equivalence of national standards

The World Trade Organisation Agreement on Technical Barriers to Trade requires members to consider the acceptance of the technical regulations of other members as being equivalent to their own. This applies even when these technical regulations are different provided the objectives of their own regulations are adequately fulfilled. This means the following.

Product characteristics make up the technical elements of a technical regulation. The technical regulations are often based on standards or make reference to parts of standards. The World Trade Organisation Agreement on Technical Barriers requires the use of international standards in technical regulations. However, where the relevant international standards do not exist countries develop national standards and used the national standard as the basis for technical regulations. Because national standards may be different from country to country it is argued that in the absence of an international standard, the notion of equivalency of technical regulations ought to be extended to differing national standards (ITC, 2004:20). Following are examples that illustrate the acceptance of equivalence in practice.

One example of the acceptance of equivalence is the Australia and New Zealand Trans Tasman Mutual Recognition Arrangement, concluded in 1996. The key principle in this agreement is that a product covered in the agreement that can be legally sold in one country may also be legally sold in the other. The agreement benefits the two countries and countries that trade with both Australia and New Zealand because the end consequence is that two separate sets of national requirements are replaced by one set of requirements (ERMA, 2006).

Another example is in the pressure vessel industry. No international standards exist for the design and manufacture of pressurised equipment. Various national standards (for example, the British Standards Institution's BS 5500, *Specifications for unfired fusion welded pressure vessels*, and the American Society of Mechanical Engineers' *ASME Pressure Vessel Codes*) are, however, used throughout the world (EC, 1999). Although these standards differ completely in their approach, it is recognised that using either will ensure that the pressure vessels are safe. In view of this, a number of countries have accepted these standards as being equivalent. Therefore either set can be used in meeting national technical regulations.

4.2.8 More international standards for technical regulations

There are indications that more international standards will be developed in the future for use as a basis for technical regulations because of the political will of some of the major trading countries to do so (Iida and Schonfeld, 2000). There is, however, still a problem in that many regulators are not yet using international standards as the basis for technical regulations. In an Organisation for Economic Co-operation and Development study that was conducted over a period of two years in 1998 and 1999, the Organisation for Economic Co-operation and Development looked at how the link between standards and technical regulations works (OECD, 2000).

This study found that using international standards is not always unproblematic and the following reasons were identified. **Firstly**, many international standards universally accepted under that name are developed by bodies dominated by industry as voluntary text. While this may provide benefits to the market, national regulators may lack confidence in them, either because their countries were not involved in their preparation or because they have public policy objectives that go beyond those of industry. **Secondly**, the World Trade Organisation Agreement on Technical Barriers to Trade allows member countries to apply higher levels of protection for legitimate policy objectives such as the protection of the public and the environment than those required in the relevant international standards. This opens the door to differences. **Thirdly**, there are not enough international standards available to provide a complete set of standards to meet the needs of regulators that may want to use standards as a basis for technical regulations. Reasons why the international standards may not be available are that consensus has not yet been reached internationally or no request for the development of such standards has been submitted by a national standards body or there is a lack of interest in standardising the product internationally.

4.2.9 Conformity assessment requirements for technical regulations and standards

In order to deal with the problem that technical regulations may differ from country to country exporters' needs to contact regulators in the countries that they want to export to. These regulators would generally have a clear idea of the conformity assessment requirements that they want for proof of compliance with the technical regulations. The following methods of conformity assessment are generally used (ITC, 1998):

- Testing by independent or government recognised laboratories.

- Product certification from certification organisations acceptable to the regulator.
- Quality system certification from certification organisations acceptable to the regulator.
- Homologation (a specific conformity assurance system used for example in the automotive industry) through governmental mechanisms or regulators.
- Consignment inspection by either governmental or acceptable third-party organisations.
- Supplier's declaration of conformity.

The acceptability of test reports, product certification, quality system certification and homologation may be a major hurdle for exporters. Exporters have to make sure that the requirements are met in order to prevent costly mistakes and wasting of time (ITC, 1998).

Exporters need to know the following when they contemplate exporting to another country:

- What information does the regulator require?
- Which laboratories are acceptable to the regulator?
- Which certification organisation is acceptable to the regulator?
- In which language should the results be presented?
- Is inspection required by the regulator or its agent and, if so, who is the agent?
- Are the goods kept in bond for inspection and certification before they can be released in the market?

- Can the goods be inspected and approved in the factory before shipment, and if so, by whom?
- Are there fees, charges, levies or other expenses payable for approvals, and if so, what are they?

4.2.9 (a) *Quality management systems*

It is often argued that quality management systems should be required for compliance with any technical regulation. The argument is that technical regulations deal with product characteristics and these product characteristics can be assured with confidence if the manufacturing process is controlled. International quality management systems are one way of achieving such control. In general regulators, however, have made quality management systems a requirement for complying with technical regulations (ITC, 2004:14-15).

In some fields, such as medical devices, compliance with quality management systems, often ISO 9001, is required in some countries. In the United States a lack of attention to quality management systems may result in fines and other indirect costs. The requirements of the United States Food and Drug Administration for medical device quality management systems are found in a revised regulation of the United States Food and Drug Administration called the Current Good Manufacturing Practices Regulation on Medical Devices dated December 1978. The Quality System Regulation of the United States Food and Drug Administration for Medical Devices incorporates many of the quality management system concepts of ISO 9001:1994 (Tsiakals, 2001).

Japan's approach to regulating medical devices is similar to that of United States Food and Drug Administration and ISO 9000 requirements are entrenched in Japan's regulations (ITC, 2004:14).

The European Union approach is different. ISO 9000 is not mandatory for trading with the European Union (EC, 2000). When exporting products covered by the European regulations in term of the New Approach and the Global Approach manufacturers may choose between various alternatives to satisfy the European Union regulators. If a manufacturer chooses a quality management system, compliance with ISO 9001 gives an assumption of conformity, provided that the quality management system takes into account, as necessary, the specific requirements of the products for which it is implemented (EC, 1990).

4.2.9 (b) Product certification

Product certification is a third-party conformity assessment procedure in terms of which a third party gives written assurance that a product, process or service conforms to specified technical requirements. Product certification may involve the issuing of a certificate or a mark or both to demonstrate that a specific product meets a set of technical requirements as specified in a standard. A product certification process confirms that the product has been produced according to an applicable standard, the production process has been supervised and the product has been tested and inspected (ITC, 2004: 29).

Product certification bodies use evaluation techniques when deciding whether or not to award a certificate. The evaluation techniques used may include the following: type testing of the product, assessing, auditing the quality management systems of manufacturers and exporters and sampling products from the factory of the manufacturers and exporters and the open market to test for compliance (ITC, 1998).

The acceptance of product certification is, however, still limited to the national or the regional level. No product certification scheme enjoys universal acceptance. In addition the acceptance of certificates also differs depending on whether the

product falls within the scope of a technical regulation or whether an exporter only needs to satisfy the demands of the marketplace and not those of a technical regulation (ITC, 2004:38).

The types of certification required by regulators of technical regulations are often problematic for exporters because approaches in this regard vary substantially from country to country, within countries from product to product and even from regulator to regulator. The approaches can even depend on the regulatory officials that exporters are dealing with. For example, one company may be required to meet requirements that differ from those imposed on other companies. These problems are often the reasons for many disputes being dealt with through World Trade Organisation mechanisms (ITC, 2004:36-37).

The main problem is that although technical regulations should clearly set out the conformity assessment requirements that have to be met in order to satisfy the regulator administering the regulation, this is seldom the case. This thus leaves the definition of proof to the regulator or, even, to the supplier, who has to guess what is required. These problems have been highlighted in the World Trade Organisation Committee on Technical Barriers to Trade. The view is that this will continue to be the subject of much debate and work within the context of the implementation of the World Trade Organisation Agreement on Technical Barriers (ITC, 2004:36-37).

Various possibilities for the recognition of product certification schemes exist. Examples of these possibilities are the following:

- *Mutual recognition agreements*

During trade negotiations between countries and trading blocks governments may sign mutual recognition agreements to facilitate the acceptance of

certification between the parties. Such mutual recognition agreements make provision for regulators in one country to accept products that are certified in accordance with the recognised system in the other signatory countries (ITC, 2004:38).

An example is the 1958 agreement called the *Agreement Concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescription*. The agreement concern the adoption of standardised technical requirements for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and reciprocal recognition of approvals granted on the basis of these requirements. Countries that signed the agreement have to comply with the agreement by accepting the certification of motor vehicles and motor vehicle components from any of the other signatory countries (ITC, 2004:38).

- *Cooperative (voluntary) arrangements*

Domestic and foreign conformity assessment service providers may enter into voluntary recognition arrangements. These voluntary arrangements include arrangements between individual laboratories, certification bodies and inspection bodies. The abovementioned voluntary arrangements have been common for years and have been developed for the commercial benefits of the participants. Governments or regulators have recognised some of these arrangements as a basis for the acceptance of test results and certification in the technical regulatory area (ITC, 2004:39).

An example of a voluntary arrangement at the international level is the International Electrotechnical Commission System for Conformity Testing and Certification of Electrical Equipment (IEC, 2007). This scheme is a multilateral

agreement between participating countries and certification organisations. An exporter using a test report issued by one of the above organisations can obtain national product certification in all other countries that are members of the scheme. Regulators in many countries accept such certification.

Another example is the International Electrotechnical Commission Quality Assessment System for Electronic Components scheme (IEC, 2007). This scheme is a third-party approval and certification programme that assesses electronic components to quality requirements. It has been operating since 1982. Supplier's declaration of conformity, under third-party supervision, is an essential element of this scheme. In terms of this scheme a company is approved to the scheme and to ISO 9000. Approved companies also obtain recognition from all members, since every member is obliged to recognise all approvals

A third example is the International Organisation of Legal Metrology (OIML) Certificate System (ITC, 2004:42) which promotes mutual acceptance by International Organisation of Legal Metrology members of instruments and measurement results that comply with the International Organisation of Legal Metrology requirements. This certification system was established in 1991. An exporter of a measuring instrument covered by the system may apply for an International Organisation of Legal Metrology certificate in a country participating in the system and may use the certificate as proof of conformity with International Organisation of Legal Metrology requirements (ITC, 2004:42).

Other certification schemes, that operate at national or regional level, but that are widely used the world over includes the European Union's CE marking scheme for certain products that may present safety or health hazards. CE marking is compulsory for such products to be marketed in European Union, regardless of whether they are produced in the European Union or outside it. There are customers and importers outside of the Europe Union who also prefer products bearing the CE

mark. The use of the mark is regulated by various European Union directives (ITC, 2004:43).

Another example is the seal of Underwriters Laboratories, which was founded in 1894 in the United States of America. The seal has become a recognised symbol of safety against fire, electrical and other hazards (ITC, 2004:43).

- Government designation

Governments or regulators may designate conformity assessment bodies that are located outside their territories, to undertake testing, certification or inspection in connection with technical regulations. An example concerns the certification of processed fish for export to the European Union. The European Union has designated the laboratories of the South African Bureau of Standards to undertake testing and certification activities in South Africa for fish exports from South Africa to Europe (ITC, 2004:39). The recognition granted to the South African Bureau of Standards as a competent authority in South Africa for verifying and certifying compliance of fishery products was transferred to the National Regulator for Compulsory Specifications in 2008 (NRCS, 2009). If processed fish has not been certified by a designated organisation that is acceptable in the European Union, very stringent and costly re-testing and re-certification takes place within the European Union.

- Accreditation

Accreditation bodies have been working at the international level towards harmonising international practices for accrediting conformity assessment bodies. The result of this work has been the establishment of global networks to facilitate the recognition and acceptance of certification (ITC, 2004:39). The networks have been formalised in terms of multilateral recognition agreements..

In terms of these agreements each participant undertake to recognise the certification issued by another party in the system as being equivalent to that issued by itself. Some governments or regulators have recognised the abovementioned agreements from time to time as a basis for technical regulations.

Two well known accreditation networks are the International Accreditation Forum and the International Laboratory Accreditation Co-operation. The International Accreditation Forum ensures that certification organisations in the management system certification business enjoy international recognition through its system of recognition of accredited organisations (IAF, 2006). The International Laboratory Accreditation Co-operation memorandum of understanding provides the basis for the establishment of multilateral recognition arrangements and facilitates the international acceptance of test and calibration data. These arrangements may assists with the elimination of technical barriers to trade (ILAC, 2006).

4.2.9 (c) Testing reports

The World Trade Organisation regards the lack of acceptance of test reports as a major barrier to trade. The reasons are that test reports are often market specific and regulator specific and the exporter has to comply with in order to enter a particular market (ITC, 2004:52).

Regulators may resort to any one of the following options for accepting test reports (ITC, 2004:55):

- Accept any test report.
- Accept a test report from a laboratory that has established a good reputation with a particular regulatory authority.

- Accept a test report from a laboratory accredited by the national accreditation body in the importing market.
- If mutual recognition arrangements exist between national accreditation bodies, it will accept a test report from a laboratory accredited by one of the mutual recognition partners.
- Accept a report from any of the few laboratories which the regulator has itself recognised.
- Accept test reports only from the laboratory operated by the relevant regulatory authority.

In addition to the above the regulator may sometimes require that the testing laboratory may not be owned by the manufacturer. However, it is increasingly acknowledged that the key issue is competence and independence and not ownership and as mutual recognition arrangements between accreditation bodies develop and mature, some of the barriers to trade are breaking down (ITC, 2004:55).

4.2.9 (d) *Inspections*

Inspection is often viewed as the oldest form of conformity assessment (ITC, 2004:45). The international standard ISO/IEC 17020:1998 that prescribes the general criteria for the operation of various types of bodies performing inspection, defines *inspection* as: ‘Examination of a product design, product, service, process or plant, and determination of their conformity with specific requirements or, on the basis of professional judgement, general requirements’. In ISO/IEC Guide 2 that prescribes general standards vocabulary, *inspection* is defined as: “conformity evaluation by observation and judgement accompanied as appropriate by measurement, testing or gauging.”

The use of inspection usually involves the visual examination of products, services and installations combined with the use of instruments, tools and gauges while taking into account other evidence of conformity such as test results (ITC, 2004:45). The view is of the reliance on visual examination, the outcome of an inspection may be viewed to be more subjective than the result of a more scientific examination. In addition, inspection standards are often less precisely defined than standards for testing in a laboratory and thus give the inspector substantial discretion for judging whether or not a product or installation is suitable for use.

However, inspection is also covered by accreditation processes. The main reason is the links with government regulation and enforcement where the inspector is deemed by law to be competent. There are, however, evidence that as many governments seek to reduce their direct involvement with operational matters, some functions, such as inspections, that were formerly undertaken by government officials are now being contracted to the private sector (ITC, 2004:46). In addition, governments that are involved in operational matters are starting to use accreditation to verify the competency of their inspectors in order to standardise the approach to inspections and to manage risk (ITC, 2004:46). In both cases accreditation is recognised as one way of ensuring that these inspection functions are being carried out by competent organisations and individuals.

Inspections are used in the private and the public sectors. In the public sector, most countries have official inspectorates to support their domestic regulatory systems in the areas of health and safety of the public and the environment. Although these inspectorates may have little direct involvement with trade, they are concerned with the product at the point of installation or use and sometimes at the point of market entry. In terms of market entry, many countries also use regulatory inspectorates to oversee exports from and imports into their countries. The aim is **firstly**, to ensure that no non-conforming product in specific product

categories is actually shipped to its territory. **Secondly**, the aim is to ensure that products are inspected at the points of entry into their territories (ITC, 2004:46).

In the private sector, inspection is used as part of conformity assessment and quality assurance process of companies. This includes both in-process inspections and in-use inspections that are key elements of quality management and plant safety management. Pre-shipment inspection is another part of the quality assurance in companies. It is common to find good working relationships between government inspectorates of exporting and importing countries. This relationship is important because it leads to the acceptance of the results of official export inspections at the point of import. These relationships, however, require mutual confidence, which often take years to establish.

4.3 REGIONAL TECHNICAL REGULATORY REFORM

In recent years, a growing number of regions have embarked on ambitious programmes to improve the quality and cost-effectiveness of national regulations. This is in recognition of the fact that regulations can create unnecessary barriers to trade, economic efficiency and investment. In terms of international trade, the quality of technical regulatory decisions in one government impacts on trade with other cross-border countries (OECD, 1995:12). Regions also initiated co-operation initiatives because of the increasing recognition of the benefits that can be realised from technical regulatory co-operation between governments. Of concern here are the Asian and European countries.

Both the Asian Pacific Economic Community (APEC) and the Organisation for Economic Co-operation and Development (OECD) embarked on a regulatory reform process because they are of the view that “regulatory requirements may actually impede gains from trade liberalisation” and that technical regulatory reform “can generate gains in terms of trade facilitation” (APEC, 2000:1).

4.3.1 Organisation for Economic Co-operation and Development

In 1995, officials of the Organisation for Economic Co-operation and Development countries identified the following problems with their use of technical regulation. **Firstly**, the maturing and expansion of the Organisation for Economic Co-operation and Development regulatory systems has given rise to concerns about the growing quantity and costs of regulation, rising compliance costs and burdensome administrative formalities. **Secondly**, there were concerns about the economic costs due to rigidities and anti-competitive effects. Although many of these costs were justified by the benefits of the regulations the view was that the costs in terms of slowed economic growth, lower levels of job creation and barriers to trade appeared to be larger than necessary. **Thirdly**, internationalisation of technical regulations also forced Organisation for Economic Co-operation and Development governments to question long-standing regulatory practices and they were seeking innovative forms of regulatory co-operation. Internationalisation is also putting pressure on governments to improve the quality of regulatory decisions, because decisions in one government become a matter of concern to other countries that are linked by cross-border trade (OECD, 1995).

The Organisation for Economic Co-operation and Development officials also recognised the opportunity for countries to learn from each other how to improve regulations. In 1995, a network of regulatory policy officials from the Organisation for Economic Co-operation and Development countries met to develop and agree on an Economic Co-operation and Development approach to regulations. The officials developed a guiding checklist called the Economic Co-operation and Development Reference Checklist for Regulatory Decision-making. The Organisation for Economic Co-operation and Development countries agreed on the following principles of good regulatory reform as contained in the 1995 Economic Co-operation and Development Recommendation on Improving the Quality of Government Regulation. The principles that the Organisation for

Economic Co-operation and Development countries agreed to were that countries' technical regulations should be informed by policy goals and effectively support those goals, have a sound legal basis, ensure that the benefits justify costs, consider the distribution of effects across society, minimise costs and market distortions, promote innovation, and be clear, simple and practical for users. The good regulatory features that the Organisation for Economic Co-operation and Development agreed to are transparency, non-discrimination, efficiency, consultation with affected parties, whether domestic or foreign, and creating and updating public registries of regulations (OECD, 1995).

The Organisation for Economic Co-operation and Development regulatory policy officials note that technical regulatory requirements may impede innovation, impact negatively on technology development and create unnecessary barriers to trade, investment and economic efficiency. They also point out that vested interest may seek to use technical regulations to protect them from competition. They highlight the fact that technical regulations that are outdated or poorly designed contribute to inefficient technical regulatory practices. They argue that the direct results of inappropriate technical regulation in a particular sector are likely to be higher costs, higher prices, misallocation of resources, a lack of product innovation and technology development as well as poor service quality. They are also of the opinion that regulatory reform has potential in term of significant gains in job creation, capital productivity and potentially significant economy-wide increases in gross domestic product and real wages (OECD, 1995).

Table 4.1 provides a summary of the checklist and the 10 questions about regulatory decisions that may be applied at all levels of decision and policy-making.

Table 4.1 Organisation for Economic Co-operation and Development Checklist

OECD Checklist

Question No. 1

Is the problem correctly defined?

The problem to be solved should be precisely stated, giving clear evidence of its nature and magnitude, and explaining why it has arisen (identifying the incentives of affected entities).

Question No. 2

Is government action justified?

Government intervention should be based on clear evidence that government action is justified, given the nature of the problem, the likely benefits and costs of action (based on a realistic assessment of government effectiveness), and alternative mechanisms for solving the problem.

Question No. 3

Is regulation the best form of government action?

Regulators should carry out, early in the regulatory process, an informed comparison of a variety of regulatory and non-regulatory policy instruments, considering relevant issues such as costs, benefits, distributional effects and administrative requirements.

Question No. 4

Is there a legal basis for regulation?

Regulatory processes should be structured so that all regulatory decisions rigorously respect the 'rule of law'; that is, responsibility should be explicit for ensuring that all regulations are authorised by higher-level regulations and consistent with treaty obligations, and comply with relevant legal principles such as certainty, proportionality and applicable procedural requirements.

Question No. 5

What is the appropriate level (or levels) of government for this action?

Regulators should choose the most appropriate level of government to take action, or, if multiple levels are involved, should design effective systems of co-ordination between

levels of government.

Question No. 6

Do the benefits of regulation justify the costs?

Regulators should estimate the total expected costs and benefits of each regulatory proposal and of feasible alternatives, and should make the estimates available in accessible format to decision-makers. The costs of government action should be justified by its benefits before action is taken.

Question No. 7

Is the distribution of effects across society transparent?

To the extent that distributive and equity values are affected by government intervention, regulators should make transparent the distribution of regulatory costs and benefits across social groups.

Question No. 8

Is the regulation clear, consistent, comprehensible and accessible to users?

Regulators should assess whether rules will be understood by likely users, and to that end should take steps to ensure that the text and structure of rules are as clear as possible.

Question No. 9

Have all interested parties had the opportunity to present their views?

Regulations should be developed in an open and transparent fashion, with appropriate procedures for effective and timely input from interested parties such as affected businesses and trade unions, other interest groups, or other levels of government.

Question No. 10

How will compliance be achieved?

Regulators should assess the incentives and institutions through which the regulation will take effect, and should design responsive implementation strategies that make the best use of them.

Source: OECD (1995:9-10)

The questions in Table 4.1 reflect the good regulatory decision-making principles that the Organisation for Economic Co-operation and Development countries agreed to use in their reform efforts. The aim of the reforms is to improve the quality of government regulation in terms of their effectiveness and efficiency while maintaining and improving the quality of life of the public (OECD, 2005:5). The Organisation for Economic Co-operation and Development officials, highlight the important fact that the checklist should be applied to a broader technical regulatory management system because technical regulatory systems are often complex and multifaceted. In addition the technical regulatory systems of countries also reflect governing responses to the diverse interests and values of society. It is therefore significant to realise that regulatory principles of a technical regulatory system differ from country to country, since issues of concern will arise from specific economic, social, and political environments and values. Some countries may emphasise economic analysis and cost reduction through the use of impact and risk assessment tools, other may concentrate on due process to facilitate effective public and stakeholder participation while others may focus on quality issues such as transparency, simplicity, clearness, the minimisation of formalities and the use of administrative processes that are user friendly and cost-effective (OECD, 1995:13).

In order to assist Organisation for Economic Co-operation and Development countries with the implementation of the principles the Organisation for Economic Co-operation and Development officials developed the following additional guidance (OECD, 1995) to improve the quality of Organisation for Economic Co-operation and Development regulations:

4.3 1(a) Defining the problem correctly (OECD, 1995:14)

The Organisation for Economic Co-operation and Development officials pointed out the importance of defining a technical regulatory problem correctly. They advised that the technical regulatory problem should be stated clearly and

evidence should be provided of the problems nature and magnitude. An explanation of why the problem has arisen should include the identification of the incentives of the affected parties and their consequent results. Correct problem definition may itself suggest potential solutions and eliminate others that may not be suitable. Most problems are multi-faceted and they may affect a variety of stakeholders in different ways. Regulators, therefore, should document the full scope of the issue. When regulators reviewing existing regulations they should also assess whether the nature or scope of the problem has changed since the regulation was adopted.

The Organisation for Economic Co-operation and Development officials, however, also highlighted the fact that not all problems are resolvable by government action. The major benefit of correct problem definition is that it isolates the relevant factors that government may be able influence through intervention, or, alternatively, to illustrate that the government may have little capacity to address the issue.

4.3.1 (b) Justifying government action (OECD, 1995:14)

The Organisation for Economic Co-operation and Development officials emphasised that government intervention should be based on clear evidence that a problem exists and that government action is justified. The evidence should be based on the values at stake, current government policies, the likely benefits and costs of action and alternative mechanisms for addressing the problem. The justification for actions should be empirical and transparent.

When assessing the need for action consideration should be given to the use of international standards to deal with the problem. In addition governments should establish processes for systematic and periodic review of the need for existing regulations.

4.3.1 (c) Ways of intervening (OECD, 1995:15)

According to the Organisation for Economic Co-operation and Development officials the decision about how to intervene may be as important as the decision on whether to intervene. Work in Organisation for Economic Co-operation and Development countries on alternatives to regulations suggests that the use of alternatives may reduce costs and increase the effectiveness of government action. Alternative forms of action include using economic instruments, voluntary agreements, self-regulation, information disclosure and persuasion. They, therefore, recommend that regulators should be encouraged to consider both regulatory and non-regulatory instruments. Their view is this should practice will support a process of systematic and open decision-making by policy-makers in order for them to identify a range of policy instruments available to achieve specific policy objectives.

4.3.1(d) Legal base for regulation (OECD, 1995:15)

The Organisation for Economic Co-operation and Development countries agreed that any restrictions on private action through regulations should be based on valid legal authority. In addition, a key consideration is whether the regulation is compatible with existing legislation, including international standards or agreements. The consideration of international standards or agreements may also indicate whether the problem has been dealt with elsewhere and may support regulatory coordination.

The Organisation for Economic Co-operation and Development officials also advised that regulatory proposals should comply with legal principles such as certainty, proportionality and equality before the law. Compliance with administrative procedure laws that set out specific steps such as review by legal experts, publication, or public consultation is also important.

4.3.1(e) Appropriate levels of government action (OECD, 1995:16)

The issue of appropriate levels of action by government is both legal and pragmatic in nature. For example, competencies to regulate may be designated by higher-level regulations and regulators have no discretion.

However, governments often delegate to regulators at sub-national, national and international levels of government. Choosing who to delegate to is informed by criteria such as the following: whether the problem extends across legal and political boundaries, whether the problem involves issues of a primarily regional or local character, whether there are economies of scale in regulating across a larger territory, what the institutional capacities of various levels of administration are and whether the need for international uniformity of regulatory standards must be balanced by sensitivities to local differences. The Organisation for Economic Co-operation and Development officials point out that harmonisation may achieve efficiency gains by removing regulatory barriers to trade, but over-harmonisation may be as inefficient as under-harmonisation.

Because multiple levels of government are often involved in regulatory development or implementation the regulator should always consider how consultation and coordination may be carried out between different governments or between different levels in government and whether regulatory action may require cooperative action between levels of government. If co-operation is required it may mean that new forms of administrative partnerships and relationships need to be built.

4.3.1(f) Assessing the costs and benefits of regulations (OECD, 1995:16)

The Organisation for Economic Co-operation and Development officials recommended that policy-makers should assess the total costs and benefits of regulations including those to businesses, the public and government. Costs and

benefits analysis are needed by policy-makers to make decisions about the reasonableness of a technical regulation and its practicality for those companies that will have to comply. The analysis should also inform the design of a technical regulation and assist with the assessment of its effectiveness in solving the policy problem. Cost benefit analysis should also include the administrative or fiscal costs of regulation and non regulatory alternatives.

The Organisation for Economic Co-operation and Development officials are of the opinion that governments should take a pragmatic and realistic approach to cost benefit analysis. Resources used for cost and benefit analysis should increase with the potential impact of the regulation.

4.3.1(g) The distribution of effects of technical regulations across society (OECD, 1995:17)

The Organisation for Economic Co-operation and Development officials advised that regulators should consider the distribution of regulatory costs and benefits across social groups. The reason is that there may be disproportionate effects on particular groups, such as small and medium-sized enterprises or on certain regions. Identification of distributional effects may not mean that policy action is undesirable for society as a whole, but, rather, that policy officials should consider the issues to determine, for example, if compensation is needed for disadvantaged groups.

4.3.1(h) Clarity, consistency and accessibility to users (OECD, 1995:17)

It is important that regulators should assess whether technical regulations will be understood by likely users. The text and structure of technical regulations therefore needs to be as clear as possible, the precise language precise and consistent with language and format of other regulations and the use of technical

jargon should be minimised. Standards incorporated by reference should be easily available. In addition a strategy for disseminating technical regulations to affected user groups should be considered.

4.3.1(i) Consulting all interested parties (OECD, 1995:18)

Regulations should be developed in an open and transparent process that facilitate input from all interested parties such as other levels of government, affected businesses, trade unions, wider interest groups such as consumer and non-governmental organisation. In order for consultation processes to be effective government should make available to the public as much information as is feasible, including proposed texts, reasons for the need for government action, and assessments of the benefits and costs. Transparency is also important when regulations may have effects on international trade or on international treaties or other co-operative agreements.

Benefits of consultation and public participation in technical regulatory development are the following:

- Improving regulatory quality.
- Bringing into the discussion the expertise, perspectives, and ideas for alternative actions of those directly affected.
- Helping regulators to balance opposing interests.
- Identifying unintended effects and practical problems.
- Providing a quality check on the administration's assessment of costs and benefits.
- Identifying interactions between regulations.
- Enhancing voluntary compliance.
- Reducing reliance on enforcement and sanctions.

4.3.1(j) *Achieving compliance (OECD, 1995:18)*

Achieving compliance with technical regulations is the most important test for the quality of technical regulations. The Organisation for Economic Co-operation and Development officials recommended strategies such as education, assistance, persuasion, promotion, economic incentives, monitoring, enforcement and sanctions. They are of the opinion that information disclosed through consumer alerts may be more effective than fines or warnings. Cooperative relations with enterprises that have to comply may produce good results. Third parties, such as communities, trade unions, or even business competitors may be empowered to monitor compliance.

Common sources of non-compliance are failure of affected groups to understand the regulations, poorly-drafted or too-complex regulations or inconsistent interpretations by regulatory officials. Efforts to improve implementation strategies will assist in detecting problems and in adjusting implementation strategies. If necessary the technical regulations themselves needs to be improved.

4.3.2 Asian Pacific Economic Community

Asian Pacific Economic Community officials are of the opinion that while technical regulations continue to be an important tool for protecting the health and safety of the public and the environment, it should be recognised that technical regulations can become a barrier to achieving the economic and social security for which they are intended (APEC, 2002:8). Since 1997, the Asian Pacific Economic Community has taken significant steps in dealing with standards, technical regulations and conformity assessment-related barriers to trade. These steps include a Guide for Alignment of Asian Pacific Economic Community Member Economies' Standards with International Standards, Asian Pacific Economic Community Guidelines for the Preparation, Adoption and

Review of Technical Regulations and information notes that aims to provide member countries with reference material that can be used when preparing, adopting or reviewing technical regulations according to the principles and features of good practice for technical regulations which were developed by an Asian Pacific Economic Community Sub-Committee on Standards and Conformance (SCSC) (APEC, 1997).

The three principles that the Asian Pacific Economic Community agreed to were **firstly**, that countries will consider alternatives to technical regulations. These alternative mechanisms relate to the use other laws such as consumer protection laws and product liability laws. Other alternatives include the use of economic instruments such as taxes, fees and charges, education programmes, self-regulation, and codes of practice. **Secondly**, the Asian Pacific Economic Community agreed to use technical regulations that are the least interventionist and the least trade-restrictive necessary to achieve the regulatory objective. **Thirdly**, the Asian Pacific Economic Community agreed to take into account the risks of non-compliance by manufacturers and importers when they determine the conformity assessment requirements.

The good regulatory principles that they agreed to are the following: transparency, non-discrimination, the use of performance-based standards rather the prescriptive standards, referencing of international standards or internationally aligned standards where applicable, the use of international conformity assessment requirements and continuous review of regulations to ensure flexibility and adaptability to modern needs.

According to the terms of reference of the Asian Pacific Economic Community Sub-Committee on Standards and Conformance, their objectives are to reduce the negative effects on trade and investment flows in the region as a result of different standards and conformance assessment requirements in the region, to facilitate the further economic development of the region, to encourage alignment

of member economies' standards with international standards, to liaise and cooperate on the development of consistent approaches to standards and conformity assessment matters in relevant regional and international bodies, to make progress on the issue of mutual recognition of conformity assessment arrangements, to co-operate on technical infrastructure development, to increase the transparency of standards, technical regulations and conformance assessment in the region and lastly, to encourage the involvement of business and other stakeholders in standards and conformance activities.

Table 4.2 Asian Pacific Economic Community technical regulatory checklist

1. Start with a clear definition of the problem. Problems described in broad terms may lead to unnecessarily restrictive regulatory responses.
2. Assess the relative merits of a range of possible regulatory responses. The regulatory response chosen should be the one with the greatest net benefit, which is not more restrictive than necessary, to fulfil the regulatory objective.
3. Prepare, adopt or apply technical regulations that will not create unnecessary barriers to trade. Member economies should therefore consider:
 - the use of performance-based regulations;
 - the appropriateness of referencing voluntary standards;
 - the use of international standards; and
 - the use of standards of other member economies where international standards do not exist or are inappropriate.
4. Member economies should give consideration to recognising the results of conformity assessment activities undertaken by technically competent conformity assessment bodies.

5. Where member economies have chosen low interventionist conformity assessment regimes (e.g. type approvals and suppliers declaration) post-market surveillance regimes may be necessary to ensure that products comply, or continue to comply, with the relevant technical regulations.

6. The world is a dynamic environment and member economies should have in place formalised mechanisms for review of the chosen regulatory response and conformity assessment regimes to ensure that they take into account technological and other changes.

Source: APEC (1997:31)

The Asian Pacific Economic Community Sub-Committee on Standards and Conformance is of the opinion that the abovementioned guides and notes may assist member countries in the adoption of efficient technical regulatory arrangements, which should lead to reductions in regulatory barriers to trade (APEC, 1997:1). It should also assist member countries in meeting their international obligations under the World Trade Organisation Technical Barriers to Trade Agreement. The Asian Pacific Economic Community Sub-Committee on Standards and Conformance summarises its efforts in the following words “more harmonised standards and conformance will improve the efficiency of production and facilitate the conduct of international trade, resulting in more rapid trade flows, reduced costs and greater integration of production networks in the region” (APEC, 2006:2).

The above mentioned “Asian Pacific Economic Community Guidelines for the Preparation, Adoption and Review of Technical Regulations” and information notes (APEC, 2000) identifies a number of steps which can be taken to minimise the trade-restrictive effects of technical regulations. These steps include:

- Adopting performance-based technical regulations, rather than prescriptive, technical regulations.,

- Ensuring that, when voluntary standards are referenced, only those standards, or parts of standards that are necessary to achieve the legitimate objectives in terms of health, safety and the environment are referenced.
- Reducing the differences in regulatory requirements by adopting international standards or aligning with international standards.
- Accepting the standards and/or technical regulations used by other Asian Pacific Economic Community economies, provided these standards and/or technical regulations adequately meet the objectives of the accepting economy's regulations.

The following paragraphs describe each of the abovementioned steps:

4.3.2 (a) Performance-based technical regulations

The Asian Pacific Economic Community officials distinguish between two main types of technical regulations, namely prescriptive-based regulations which specify the means for achieving the specified outcome of the regulations and performance-based regulations which specify the desired objective of the regulations in precise terms but allow businesses that are regulated to determine their own techniques for achieving the outcome of the regulations (APEC, 2000:11).

Prescriptive regulations, therefore, determine only one means of achieving the objective of a regulation. The main problem with this approach to technical regulations is that it may create an obstacle to trade and economic development as well as barriers to innovation and the development or uptake of new technology because businesses are locked into a single solution with no opportunity to utilise alternative or more cost efficient, compliance solutions (APEC, 2000:11). One benefit of prescriptive regulations, however, is that it

provides certainty for those businesses that are being regulated and for the conformity assessment service providers whose role it is to determine whether the desired objective has been met.

Performance regulations, determine only the desired outcome of the regulations and not the means of achieving the objective of a regulation. This approach to technical regulations, therefore, leaves it open for business to choose how they will meet the technical regulation and may not create obstacle to trade and economic development as well as barriers to innovation and the development or uptake of new technology.

The Asian Pacific Economic Community officials (APEC, 2000:12) recommend that countries only use the inflexible approach of prescriptive regulations when there are extremely limited ways of achieving the objective of a regulation. The reasons are that performance-based regulations represent a more flexible approach, allow the businesses that are regulated to devise the most efficient and effective method of compliance and they may accommodate a range of technical solutions provided the regulatory outcomes are the same.

4.3.2 (b) Referencing voluntary standards

With regard to the referencing of voluntary standards as a basis for the technical requirements of a regulation, the Asian Pacific Economic Community officials (APEC, 2000:12) highlight the fact that voluntary standards, that are developed by both domestic and international standardisation bodies, are not necessarily written with a view to be used as mandatory requirements. They recommend that only those parts of a voluntary standard that represent the minimum necessary to fulfil the regulatory objective of the technical regulation should be referenced by the regulation.

4.3.2 (c) Alignment with international standards

The Asian Pacific Economic Community officials (APEC, 2000:12-13) endorse the adoption of common international standards because it may reduce the trade-restrictive effects of regulation. The benefit to exporters is the removal of the artificial segmentation between markets that differences in national standards may create. The adoption of common international standards allow exporters to produce a single version of the product that is acceptable in all markets instead of having to produce numerous smaller batches for each of the markets they may wish to export to. This may lead to significant cost savings through economies of scale. The Asian Pacific Economic Community officials, however, agree that international standards should be drafted in a transparent, open and non-discriminatory manner if they want to be relevant to market and regulatory needs.

4.3.2 (d) Equivalency

The Asian Pacific Economic Community officials (APEC, 2000:13-14) are of the opinion that Asian Pacific countries may achieve similar benefits through the use or recognition of standards from other Asian Pacific countries even if international standards are not available. They argue that the acceptance of the technical regulations or standards of another country, even where the standards are not exactly identical, may result in significant efficiency gains for industry and government regulators.

For industry, the acceptance of equivalence may result in the removal of segmentation effects caused by different standards. For regulators it may be possible to reference compliance with the standards of another country as an acceptable solution provided they are satisfied that these standards adequately fulfil the health, safety and environmental objectives of their own regulations.

4.3.2 (e) *Conformity assessment requirements*

Conformity assessment requirements mainly fall into two broad types (APEC, 2000:15). The **first** type includes requirements that products need to be assessed against prior to entry into the market. These conformity assessment requirements are often called pre-market conformity assessment requirements and may take the form of product approvals, product registrations, licences or inspections.

One problem with pre-market conformity assessment requirements is that they delay the entry of goods onto the market. The Asian Pacific Economic Community officials are of the opinion that these delays may constitute a significant barrier to entry and may prevent the uptake of new, innovative and more efficient technologies. They, however, acknowledge that in high risk regulatory areas, for example medical devices and pharmaceuticals, pre-market assessment of a product's conformity to technical regulations may be essential to give adequate assurance that the products do not pose a risk to the health or safety of the public.

The **second** type of conformity assessment requirements relies on the manufacturer or supplier to take on the responsibility to ensure that products entering the market comply with the relevant mandatory requirements of the technical regulations and not the regulator. Conformity assessment requirement in this case is typically referred to as supplier declaration. Supplier declaration still includes the undertaking of some form of conformity assessment to show that the product complies with the technical regulations before the product is exported. Third party conformity assessment or internal conformity assessment also makes it possible for exporters to proof compliance should the conformity of their products with the required technical regulations ever be questioned by a regulator, during the course of a post-market surveillance exercise or by the courts in the case of a product liability or negligence action. Some of the benefits

of supplier declarations to industry are that it eliminates the need for approvals from a regulator prior to exporting and that exporters may choose from any number of conformity assessment bodies or in some cases, use their own internal conformity assessment mechanisms to ensure compliance (APEC, 2000:15).

4.3.2 (f) *Types of conformity assessment*

The Asian Pacific Economic Community officials (APEC, 2000:16-18) identified the following forms of conformity assessment requirements available to governments:

- Inspection involves the assessment of each individual product. In cases where a product may deteriorate over time (for example: gas cylinders, motor vehicles and marine vessels), inspection may occur a number of times over the product lifecycle.
- Licensing involves the assessment of the competence of an individual or a company to undertake a specific task. Licensing is used in situations where the performance characteristics of the product are not readily discernible and confidence that the product complies with the regulation can only be achieved if the product was manufactured by appropriately qualified individuals or companies.
- Batch testing involves a sample test of each batch or shipment of mass produced product.
- Approvals involve the assessment of a sample of a product by competent test facilities or laboratories.
- Certification involves initial testing of products and ongoing product surveillance and may include the assessment of a manufacturer's quality management system for certification.
- Listing/registration involves the submission of the prescribed documentation, together with supporting evidence, such as test reports, to

the regulator who assess the documentation before the product is listed on a register or gazette as approved/recognised products.

- Supplier declaration involves, as indicated previously, an assessment of the product, at the choice of the supplier, by any one of a number of conformity assessment bodies, or by the supplier's own internal test facility in some cases.

Comparatively (APEC, 2000:19) inspection is a highly stringent conformity assessment requirement and places a significant burden on industry and consumers. Typically, licensing applies to trade professionals and quality management systems of companies. Batch testing is declining in popularity as a conformity assessment requirement because of the uptake of quality management systems by manufacturers that ensure that each product manufactured is of the same quality, and has the same characteristics, as the original batch or sample. Batch testing is, therefore, only recommended where the regulator has little confidence that each individual product will be of the same quality as the original or sample product. Approvals are currently the most common form of pre-market conformity assessment. Approval requirements are often complemented with post-market surveillance to ensure that the products that are placed on the market are the same as those for which the original approval was given. Governments regulators in a number of countries are choosing to rely on certification programs delivered by competent third party product certification bodies that provide services to industry in a competitive environment. Listing/registration of products provides the regulatory body with a quick reference for identifying the manufacturer/supplier of any product on the market should an instance of non-conformity arise. Supplier declarations provide significant advantages to industry that may lead to significant time and cost savings to industry and may represent a significant reduction in regulatory cost and effort.

4.3.2 (g) Choosing the appropriate conformity assessment requirements

The Asian Pacific Economic Community officials (APEC, 2000:18) promote that regulators should choose appropriate regulatory measures which may ensure the greatest degree of compliance at the lowest level of government intervention. The argument is that such approach may encourage the establishment of effective and open markets that will, in turn, provide economic benefits. It is, however, recognised that the risk that non-compliance may pose problems to the health and safety of the public and the environment and therefore the least interventionist conformity assessment approach may not be the most appropriate in specific circumstances. In addition to the type of conformity assessment requirement chosen, the number of licenses, certifications and approvals should be kept to the minimum necessary to achieve regulatory objectives and the level of interaction between individuals or companies and the government, should be kept to a minimum.

4.3.2 (h) Recognising the results of conformity assessment activities

The Asian Pacific Economic Community officials (APEC, 2000:18-19) accept that countries may require assurance that products exported to their market comply with the technical regulations they have determined as essential to ensure the health and safety of the public. They, however, are concerned that the need for assurance of conformity with technical regulations may place an inherent burden on exporters.

This may require that exporters have to re-tested or re-certified products even though they have already been tested or certified in another country and as a result manufacturers may choose not to enter a particular market. This may mean the number of products available in a country can be limited, the degree of domestic competition is reduced and hence the level of innovation and technological advances made may be restricted. This may impact negatively on the prosperity and economic stability of a country.

The Asian Pacific Economic Community officials (APEC, 2000), however, argue that the costs of compliance can be reduced if countries unilaterally accept the results of conformity assessment activities undertaken by competent bodies in another country. Acceptance of results should reduce the amount of re-testing that occurs, and therefore the cost, in addition to reducing the workload for the regulators.

A key factor, however, for governing a recognition arrangement that accepts results from another country, is confidence between the two or more governments that regulators have access to technically competent conformity assessment bodies to assess the product to the importing country's requirements. There exist a number of commonly used mechanisms for determining the technical competence of conformity assessment bodies, including accreditation, peer assessment and government designation.

4.3.2 (i) Regulatory safety nets

The nature and strength of a country's regulatory safety nets, such as the general consumer protection or product liability requirements and whether these requirements are based in legislation or civil law, plays a significant role in the choices of regulatory responses and conformity assessment requirements that a country makes (APEC, 2000:20).

If strong regulatory safety nets are not available in a country, governments may consider it necessary to adopt a more interventionist approach such as mandatory pre-market conformity assessment requirements with stringent post market surveillance techniques to ensure that there is no possibility of non-compliant product entering their market. However, if strong regulatory safety nets are available, governments may adopt lighter approaches to product regulation such as listings and supplier's declarations.

4.3.3 Comparison of principles and guides of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development

The Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development developed guides and principles in order to steer implementation of a common approach to technical regulations and standards. The Organisation for Economic Co-operation and Development's guide highlight the importance of a clear definition of the problem that has to be solved. The Asian Pacific Economic Community's guides point out that policy problems that are described too generally may lead to unnecessarily restrictive technical regulatory responses. The Organisation for Economic Co-operation and Development's guides point out that the problem that needs to be solved should be precisely stated. Clear evidence of the nature and magnitude of the problem must be provided as well an explanation of why it has arisen.

The Economic Co-operation and Development's guide recommends that government intervention should be justified given the nature of the problem, the likely benefits and costs of action and that alternative mechanisms for solving the problem should always be considered. Government should make sure that the distribution of technical regulatory costs and benefits across social groups is transparent. Disproportional effects on particular groups, such as small and medium enterprises, should be investigated.

The Asian Pacific Economic Community's guide recommends that other mechanisms be considered first. These mechanisms include considering the status quo, reliance on common law, the use of liability laws, the application of economic instruments, e.g. through a tax or user charge, education and persuasion, government support for a voluntary standard, industry self-regulation and establishment of codes of practices. They argue that the technical regulatory

response chosen should be the one with the greatest net benefit, which is not more restrictive than necessary to fulfil the regulatory objective.

The Asian Pacific Economic Community's guide stresses the fact that technical regulations should not be prepared, adopted or applied with the effect of creating unnecessary barriers to trade. The following should be considered: the use of performance-based regulations, the appropriateness of referencing voluntary standards and the use of international standards.

The guides of both the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development's point out that legislators should assess the incentives through which the technical regulation will take effect and should clearly define the conformity assessment requirements, reflecting the risk levels identified, which may be necessary to ensure that products comply, or continue to comply, with the relevant technical regulations. Conformity assessment requirements could be inspection, licensing, batch-testing, approvals, certification, listing, and registration and/or supplier declarations.

The guides of both the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development support the fact that a country's regulatory system influences the types of technical regulatory responses taken and conformity assessment requirements implemented by that country. When consumer protection laws are used, governments may consider it necessary to adopt a more interventionist approach such as mandatory pre-market conformity assessment with stringent post-market surveillance techniques to ensure that there is no possibility of non-compliant products entering their market. However, where a regulatory system use product liability laws governments can adopt less stringent approaches to product regulation such as supplier's declarations.

The Economic Co-operation and Development's guide highlights the fact that technical regulations should be clear, consistent, comprehensible and accessible

to users. In addition, the guide also emphasises that technical regulations should be developed in an open and transparent manner, with procedures that ensure the effective and timely input from interested parties such as affected businesses and trade unions, other interest groups, or other levels of government. Impacts on small and medium-sized enterprises should be given special attention.

The guides of both the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development agree that consultation carried out at all stages of the process has the following benefits:

- Increases the transparency of the process;
- Ensures that all perspectives on the issues have been considered;
- Highlights alternative approaches to achieve objectives;
- May be a useful means of evaluating the accuracy of regulators' assessment of the costs and benefits; and
- Enhances awareness and therefore encourages compliance.

The Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development also agree as a principle of good technical regulatory practice that it is necessary to ensure that technical regulations are no more trade-restrictive than necessary, and therefore it is important that provisions exist for the review of technical regulations. Monitoring is essential to assess whether the circumstances or objectives giving rise to the adoption of the technical regulation have changed. Monitoring is also essential to assess whether the technical regulation achieves the desired objectives. The Asian Pacific Economic Community's guide proposes the inclusion of a sunset clause that establishes a specific date on which the regulation will expire. If at the time at which the technical regulation expires, the regulation is still required, then the regulation can be re-promulgated.

O'Brien (2003:11) notes, **firstly** that the technical regulatory activities in the Organisation for Economic Co-operation and Development have raised many

conflicts among the Organisation for Economic Co-operation and Development countries. He points out that although the Organisation for Economic Co-operation and Development countries may share broad principles they are still firmly attached to their national approaches of doing technical regulations. While they promote that international standard should cover as much of global trade as possible, they have a strong preference such standards should reflect their own practice. **Secondly**, he advises that the structures and processes for technical regulatory reform within the Organisation for Economic Co-operation and Development are far from settled. He is of the view that the change has been cautious and a kind of trial and error to find satisfactory ways to agree to technical regulations that will apply in the Organisation for Economic Co-operation and Development. He, therefore, advises that other regions that are developing technical regulatory reform policies should not simply draw down from the Organisation for Economic Co-operation and Development approaches but should critically look at approaches that will suit their circumstances. **Thirdly**, he promotes a continuous approach to technical regulatory reform that is based on flexibility.

In terms of Asian Pacific Economic Community, O'Brien (2003:13) notes that there exist among several countries of Asian Pacific Economic Community trust in the quality of products which they trade. For this reason there has been some development of mutual recognition agreements through which testing, certification, calibration and inspections services in one country can be recognised as fit to carry out conformity assessment according to the procedures of the trading partner in selected sectors.

4.3.4 Implementation of technical regulatory guidelines

The 1995 Economic Co-operation and Development report commented that technical regulatory officials have not welcomed the disciplined framework that the guides brought to decision-making. Government departments did not

generally follow up with necessary investments in information and human resources. A systematically organised approach and high-level support for the implementation of such principles are essential. Management strategies for giving effect to the use of the guidelines should include designating ministers or senior officials as responsible for the application of guidelines, clarifying management responsibilities for compliance with the technical regulatory principles, establishing central oversight bodies or independent technical regulatory review processes, developing training and disclosing responses to guidelines.

It is a necessary condition for success that regulatory officials at all levels of administration be familiar with the quality principles established for regulatory decisions, which places special emphasis on training and incentive programmes in the public service. Finally, governments should develop processes for the systematic evaluation of existing regulations to ensure that they continue to be relevant and consistent with current conditions.

4.3.5 Southern African Development Community

Southern Africa negotiated a Southern African Development Community Technical Barriers to Trade Annex from 2005 to 2008 because these countries recognised the need to move towards more transparency, participation and attention to economic costs as well as more sharing of institutional capacity in the area of technical regulations and standards. The Southern African Development Community also identified the need for Southern African Development Community policy-makers to give serious political attention to regulatory reform because of its importance for the future of the sub-region (O'Brien, 2003:3-7).

Southern African Development Community officials also recognised the importance of establishing a common approach to technical regulations in southern Africa. During the 20th SADC Committee of Ministers of Trade and

Industry meeting on 12 July 2008, the ministers adopted the Technical Barriers to Trade Annex to the Southern African Development Community's Protocol on Trade (SADC, 2008). The aim of the annex is to create a framework in terms of which Southern African Development Community countries can identify, prevent and eliminate unnecessary technical barriers to trade among themselves (SADC, 2008:8). The focus of the annex is on harmonising standards, technical regulations and conformity assessment procedures with a view to facilitate and increase trade.

In terms of the provisions of the Technical Barriers to Trade Annex, the Southern African Development Community countries agreed to use consultation and information exchange processes when they develop, amend and implement technical regulations (SADC:2008:8). Southern African Development Community countries also agreed to use international standards and in particular to use of standards that determine the performance of the product rather than prescriptive technical requirements that the product has to comply with (SADC, 2008:9). The Southern African Development Community Technical Barriers to Trade Annex requires that national standards have to be withdrawn if they differ from the regional Southern African Development Community standards (SADC, 2008:11). The Southern African Development Community's Technical Barriers to Trade Annex also requires that officials use impact and risk assessment tools to inform their technical regulatory decisions (SADC, 2008:10). Provision is made for the acceptance of conformity assessment results among members which means that the products are tested, inspected or certified once for compliance to technical regulations (SADC, 2008:12). The review of technical regulations to ensure that they are still valid to meet changing needs is included. The Southern African Development Community's Technical Barriers to Trade Annex also recognises the need for co-ordination between various institutions that are responsible for and may support effective and efficient technical regulatory approaches.

In terms of rights and obligations, the southern African countries confirmed their commitment to the World Trade Organisation Technical Barriers to Trade Agreement principles of non-discrimination, necessity, and the prevention of trade-restrictiveness, proportionality, the use of equivalent and internationally harmonised measures, transparency and special and differential treatment (SADC, 2008:8). The Southern African Development Community Technical Barriers to Trade Annex requires that officials consider the nature of the problem that a technical regulation aims to solve, alternatives for solving the problem and the socio-economic costs and benefits to society.

The Southern African Development Community Technical Barriers to Trade Annex provides for the establishment of a Southern African Development Community Technical Regulation Liaison Committee (SADCTRLC) (SADC, 2008:16). This committee will be responsible for promoting and facilitating implementation of the Southern African Development Community Technical Barriers to Trade Annex. The responsibility includes that the committee will make recommendations on Southern African Development Community technical regulation policy issues, develop guidelines and tools to assist countries with implementation at national level. Provision is also made for implementation of common technical regulations in order to facilitate trade.

The Southern African Development Community Technical Barriers to Trade Annex links the work on technical regulations with the work on standards, accreditation and metrology (SADC, 2008:17-23). The aim is to ensure that the institutions responsible for standardisation develop appropriate standards and conformity assessment procedures to respond to the needs of the regulatory domain.

The Southern African Development Community's Technical Barriers to Trade Annex highlights the importance of a clear definition of the problem that has to be solved (SADC, 2008:10). The Southern African Development Community's

Technical Barriers to Trade Annex requires a clear understanding of the nature of the policy problem that a technical regulation aims to solve.

The Southern African Development Community's Technical Barriers to Trade Annex requires that governments need to justify technical regulations taking into account the nature of the problem. Government is also required to consider other suitable alternatives for technical regulations for solving the problem. The Southern African Development Community's Technical Barriers to Trade Annex also requires that governments evaluate the socio-economic benefits to society as a whole as well as the costs of proposed actions. Governments have to provide evidence that they fulfilled the above requirements in order to make the technical regulatory process more transparent and to increase compliance with the objectives of the Southern African Development Community Protocol on Trade to increase trade in the sub-region.

The Southern African Development Community's Technical Barriers to Trade Annex also promotes the use of performance-based standards based on international standards rather than prescriptive standards as a basis for technical regulations and includes a requirement that countries have to withdraw conflicting national standards once the text of a regional standard has been developed and approved in accordance with the agreed Southern African Development Community standardisation procedures (SADC, 2008:11).

The Southern African Development Community's Technical Barriers to Trade Annex requires that technical regulations should include clear conformity assessment provisions and recommends the use of relevant combinations of inspection, testing and certification (SADC, 2008:12). These combinations should be appropriate to the risk that the technical regulation is dealing with and the consequential damages if a product fails to meet the requirements of the technical regulation.

The Southern African Development Community's Technical Barriers to Trade Annex recommends that governments require regulatory approval of products before they are brought into circulation if the risk of non-conformance is high (SADC, 2008:11). The Southern African Development Community's Technical Barriers to Trade Annex emphasises the responsibility of governments and regulatory agencies to ensure transparency in terms of administrative and conformity assessment provisions of the technical regulations under their jurisdiction.

The Southern African Development Community's Technical Barriers to Trade Annex highlights the importance of market surveillance aimed at establishing whether products meet the technical regulatory requirements once they are in the marketplace (SADC, 2008:12). It also emphasises the need for sanctions to ensure that suppliers that do not meet the provisions of the technical regulations are discouraged. The sanctions recommended in the Southern African Development Community's Technical Barriers to Trade Annex include administrative sanctions whereby suppliers are required to rectify the problem identified before the product is put into the market, recall of the non-complying products from the market for repairs and replacements before it is put back into the market, recall of the non-complying commodities from the market to be destroyed, advertising campaigns to warn and inform the public about the problem and lastly, legal sanctions if the supplier fails to respond positively to administrative sanctions.

The Southern African Development Community's Technical Barriers to Trade Annex requires that countries have to implement programmes to update their existing technical regulations developed before the annex came into force (SADC, 2008:13). It recommends that such a programme may include the identification of all existing technical regulations, a review to establish whether these technical regulations are still required and, if not, have them removed as well as a review to ensure that all technical regulations meet the requirements of

the Southern African Development Community's Technical Barriers to Trade Annex.

4.4 INTERNATIONALLY RECOGNISED INSTITUTIONS

The need for national institutions, namely institutions for standardisation, metrology and accreditation, also collectively known as technical institutions, which are internationally recognised, is becoming increasingly important in the light of the rate of globalisation that has accelerated over the past decade. The international institutions include the International Standards Organisation (ISO), the International Electro-technical Committee (IEC), the International Bureau of Weights and Measures (BIPM), the International Laboratory Accreditation Co-operation (ILAC) and the International Accreditation Forum (IAF) (SADC, 2004:34).

In addition to the need for international recognition, governments in developed and developing countries often mandate public entities to provide these strategic technical services. Governments are therefore under increased pressure to reform and develop these institutions in order for the institutions to meet the needs of their economies. In addition the national economies are becoming increasingly integrated as a result of the expansion of international trade, greater global investment flows, and the emergence of global telecommunications and transportation systems. The integration puts greater demands on trading partners to demonstrate equivalence of their technical infrastructure in support of trade and to guarantee that products exported from them are safe and 'fit for purpose'. There is also an increased need for regions to verify the technical competence of their conformity assessment service providers, e.g. test laboratories, certification bodies and inspection services, which provide proof of compliance with technical regulations and standards (UNIDO, 2003:87-97).

Furthermore, the technical infrastructure institutions support the production of quality goods and service, which producers can supply competitively into global manufacturing supply chains. The institutions are also required to enable government to meet its obligations in terms of health and safety of the public and protection of the environment. It, therefore, becomes conditional for governments to modernise their technical infrastructure and to secure international recognition for their systems, if they want to participate competitively in international trade.

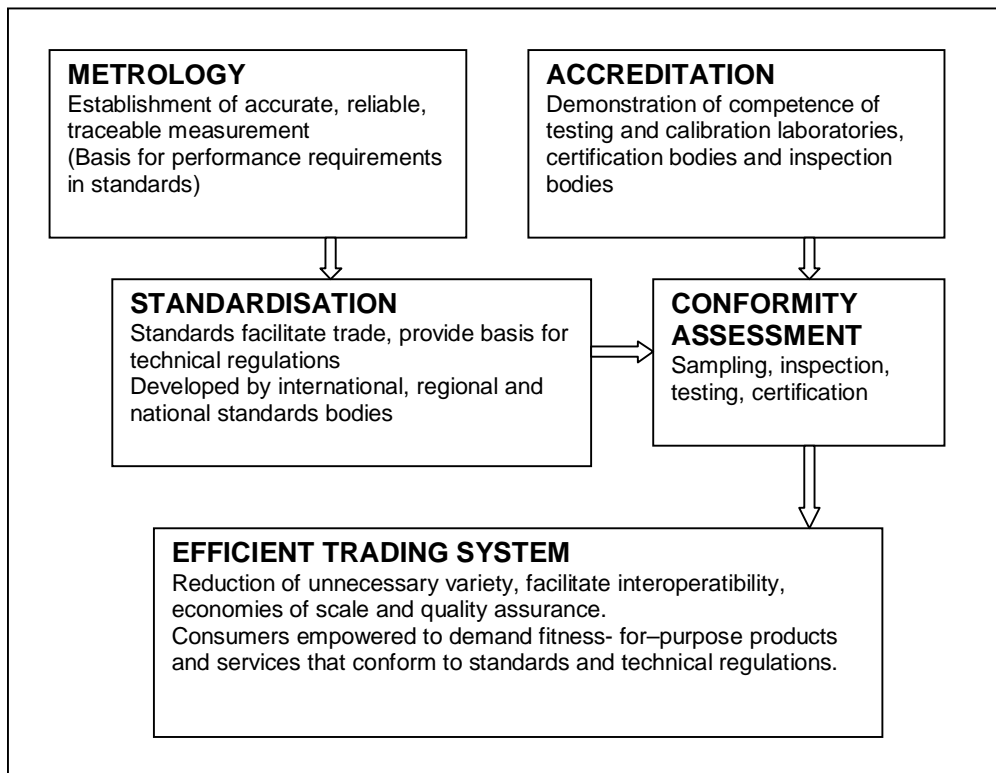
The abovementioned demands offer both opportunities and competitive challenges to the sustainable development of the African region. When considered in the light of Africa's economic strategies, e.g. the Market Access Initiative and the Productive Capacity Initiative, which aim to facilitate market access for African products through improved production capacity, the important role of infrastructure for standardisation, accreditation and metrology should not be underestimated. As a result, the reform of the African technical infrastructure becomes urgent and a priority.

4.4.1 Three key technical institutions

Kammer (NIST:2000) notes that “although most people do not realise it, standards and the methods used to assess conformity to standards are absolutely critical”. The technical institutions of a country are vital for industry and trade, for health and safety of the consumer and the protection of the environment and for the basic performance of economies. The infrastructure also ensures effectiveness, efficiency, quality, reliability, compatibility and interoperability. Furthermore, it facilitates trade, knowledge and technology transfer as well as good management practices (ISO, 2005). It is, however, necessary to recognise that competitiveness gains from trade, knowledge and technology transfer can only materialise if high quality institutions are in place (Busse, Borrman and Neuhaus, 2006). Figure 4.1 illustrates the building blocks

of a technical infrastructure system and the linkages between metrology, standardisation and accreditation.

Figure 4.1: The building blocks of a technical infrastructure system and the linkages between metrology, standardisation and accreditation.



Source: Adapted from ISO (2008:11)

The capacity of a country's technical institutions, namely the national standards body, accreditation body and measurement metrology institute impacts directly on the competitiveness of the private sector of the specific country. It can raise or lower economic efficiency, facilitate or constrain exports, enable or exclude the participation of small and medium enterprises and block or promote competitiveness (UNIDO, 2006:94). It is particularly during the early phase of sector development that effective technical institution support is necessary to

support private sector entrepreneurial efforts. Technical standards help to focus the direction of collective technology search efforts. Standards foster diffusion of new innovation and technology. It also fosters efficiency gains from specialisation, which enlarges the scope of mass production, reduces costs and prices and enlarges the potential market (UNIDO, 2006:85).

There are various international institutions in the area of standardisation, metrology and accreditation of conformity assessment services, which are investigated in the following section.

4.4.2 Metrology

Metrology is crucial in international trade because it provides the necessary technical means to ensure correct measurements through the implementation of a harmonised system of measurement which consist of the international system of units of measurement and is called the Systeme International (SI). One example to illustrate the importance is that modern production processes are characterised by the assembly of parts and components bought from different parts of the world. This requires the application of uniform and reliable measurement systems that guarantee interchangeability of the mechanical dimensions and compatibility of different components and parts. It is the task of national metrology institutes to maintain the national measurement standards so that measuring equipment can be related to these standards.

At international level, the increase in international trade in manufactured goods in the nineteenth century led to the signing of the treaty of the metre (*Convention du mètre*) in Paris in 1875. The treaty established the metric system as the international system of units for international trade, and founded the Bureau International des Poids et Mesures (BIPM). It has 51 members. African member countries are Egypt and South Africa. The Bureau International des Poids et Mesures is responsible for the establishment and maintenance of

reference standards in order to have good long-term stability, the organisation and participation in international comparisons and the carrying out of calibrations as well as investigations that may result in improved reference standards or measurement techniques. Participation in these international comparisons is of growing importance for national metrology institutes (NMIs) which have signed mutual recognition agreements in terms of which they accept each other's calibration certificates and demonstrate equivalence between their national measurement standards and those of other countries (SADC, 2004:38).

Governments of developing and developed countries generally accept the responsibility for the establishment of national metrology institutes and these public entities are mandated to develop and maintain the national metrology systems. The establishment of metrology infrastructure is often the first priority when a technical infrastructure system is developed because it provides the foundation for standardisation, accreditation and conformity assessment. It is essential because it facilitates the acceptance of measurements related to exported products, law enforcement related to measurements and it supports scientific results (BIPM, 2006). Governments often fund the activities to maintain the national primary standards. It is important that the level of metrology available to the country meets the needs of the industry and the government. This is, however, an area that requires substantial investment and, thus, careful planning and a sound knowledge of what is actually needed are important. Table 4.3 provides a summary of the metrology infrastructure costs, financing, needs and planning considerations.

Table 4.3: Summary of the metrology infrastructure costs, financing, needs and planning considerations

Costs	Financing	National needs	Planning considerations
<p>Measurement and traceability infrastructure and operating expenditure can vary from moderate to costly depending on the needs.</p> <p>The availability of suitable reference material is often a problem and can be moderately expensive. Regional solutions to this problem should be sought.</p>	<p>Metrology infrastructure is in the public interest; therefore it is normally financed by national government.</p>	<p>Appropriate legislation to establish a national measuring standards institute is necessary.</p> <p>Some degree of national measurement infrastructure is essential and what is appropriate will depend on the prevalent industries in the country.</p>	<p>First priority is to establish a national measurement system.</p> <p>Some elements can be obtained regionally.</p> <p>International recognition should follow establishment.</p>

Source: Adapted from ISO (2008: 22)

4.4.3 Standardisation

Standardisation is a process whereby acceptable levels of quality and performance characteristics are agreed to by technical committees and adopted as national standards. These national standards are consensus documents issued by an approved national standards body, which provides uniform rules and guidelines for the production of goods. The process of standardisation is closely associated with industrial development and it is generally accepted that a competitive economy cannot function without standards (DTI, 2004a).

The scope of standards is captured in the definition of *standards* in the World Trade Organisation Technical Barriers to Trade Agreement, namely: “A document approved by a recognised body that provides, for common and repeated use, rules, guidelines or characteristics for products and their related processes or production methods, with which compliance is not mandatory. It may also cover terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method” (WTO, 2006). These standards are used either as voluntary standards or as a basis for technical regulations.

A number of international organisations are involved in developing and publishing standards. There are two key non-governmental international standardisation bodies, the International Standards Organisation (ISO) and the International Electro-technical Committee (IEC), which are responsible for the development of international consensus documents published as international standards. The International Electro-technical Committee was founded in 1906. The membership (in the year 2000) stands at about 50 participating countries, of which only a small number are developing countries. The International Electro-technical Committee has published some 11 000 International Electro-technical Committee standards in the electro-technical field, covering electronics, magnetics and electro-magnetics, electro-acoustics, telecommunications and energy production and distribution. The International Standards Organisation was established in 1947 and is a worldwide federation of national standards bodies from some 140 countries, over 100 of which are developing countries. Almost all African countries are members. International Standards Organisation has published around 12 500 International Standards Organisation standards dealing with most fields, products and systems not falling in the International Electro-technical Committee is domain or the telecommunications domain served by the International Telecommunication Union.

Some of the major intergovernmental organisations that publish documents used as international standards or as a basis for technical regulations are the International Telecommunication Union and the International Organisation of Legal Metrology. The International Telecommunication Union was established in 1865 as the International Telegraph Union, changing its name to its current one in 1934 and becoming a specialised United Nations agency in 1947. It has 189 member states and over 650 sectoral members (from industry). The International Telecommunication Union has published a vast number of recommendations that are generally complied with because they guarantee the interconnectivity of networks and technically enable services to be provided on a worldwide scale (ITU, 2009). The International Organisation of Legal Metrology was established in 1955 to promote the global harmonisation of legal metrology procedures. It is an intergovernmental treaty organisation whose membership consists of states and corresponding members. The International Organisation of Legal Metrology publishes international recommendations for metrological performance and the testing of measuring equipment used in trade or in the application of legal requirements (OIML: 2009).

In most developing and some developed economies, national standards organisations are public institutions mandated through legislation. The reason for this is that governments recognise that standards form an important element of economic policy and therefore accept the responsibility that the national standards organisation needs to be appropriately guided, based on national needs.

In addition, it is important to have a nominated standards body to represent a country at international level. Representation in technical committees at international level is important because technical committees of national standards bodies often adopt or adapt international standards for national conditions. It is also important to note that national standards or parts of national standards can be called up in technical regulations to protect the health and

safety of the public and the environment. Governments often provide the bulk of the funding for these public institutions. These institutions are responsible for managing the technical committees charged with the development of national standards, attendance of international and regional standardisation-related meetings, printing and publishing costs and the provision of a standard information centre (ISO, 2005). Table 4.4 provides a summary of the standards infrastructure costs, financing, needs and planning considerations.

Table 4.4: Summary of the standards infrastructure costs, financing, needs and planning considerations

Costs	Financing – four size	National needs	Planning considerations
Cheap, especially in the case of harmonising with existing regional or international standards and provision of information on them.	Standards information provision and sale are normally by national governments, as they often focus on standards for national good.	Adoption, development, maintenance and harmonisation mechanisms. Fairly limited infrastructure (computers, website, ability to set up and co-ordinate mirror committees). Establish TBT enquiry point, which requires capacity-building and an appropriate level of communication and	Providing national standards provision is recommended by whichever means is appropriate and affordable. Appropriate legislation is necessary to establish a national standards body, its governance and financing. The benefits of working regionally to develop standards where needed can be
Slightly more costly where purely national standards need to be developed.	Often falls under trade or industry ministry or equivalent.		
Additional costs arise when international and regional	Costs can be partially off-set by income from sales of standards or conformity		

<p>participation in standards-setting is envisaged.</p> <p>Additional costs arise for the establishment of WTO TBT enquiry points.</p>	<p>assessment activities.</p> <p>As the economy develops, other income can be generated through the development of other standards for industry or through subscription from industry to standards committees, but this is a long-term possibility.</p>	<p>IT function.</p>	<p>considered in areas of common interest.</p> <p>The cost of participation in international or regional standardisation committees and of setting up a national enquiry point can be significant but can start from a low base.</p>
--	---	---------------------	--

Source: Adapted from ISO (2008: 23)

4.4.4 Accreditation

Accreditation is the process by which an independent national accreditation body formally recognises the technical competency of conformity assessment service providers (ILAC, 2006). These conformity assessment service providers, which could be public or private, include laboratories, inspection bodies and certification bodies, which perform specific types of testing, measurement, certification and inspection. International mutual recognition arrangements between national accreditation bodies facilitate mutual recognition of conformity assessment certificates, inspections and test reports. It therefore means that test data, certificates or inspection reports that go with exported goods are more readily accepted in overseas markets. The result of these arrangements is that it reduces cost of testing because manufacturers can test in their own countries and it eliminates the need for products to be retested in another country (DTI, 2004b).

At international level, the International Laboratory Accreditation Co-operation (ILAC) is an international co-operation between laboratory accreditation schemes operated throughout the world. It was formalised in 1996, when 44 national bodies signed a memorandum of understanding. South Africa and Egypt are signatories of the memorandum. The International Laboratory Accreditation Co-operation is responsible for the harmonisation of laboratory accreditation procedures. In addition, the memorandum of understanding provides the basis for further development of the co-operation and the establishment of multilateral recognition arrangements between the International Laboratory Accreditation Co-operation member bodies. In this regard, the International Laboratory Accreditation Co-operation Arrangement enhances and facilitates the international acceptance of test and calibration data and the elimination of technical barriers to trade. It was signed by 36 laboratory accreditation bodies from 28 economies on 2 November 2000 and went into effect on 31 January 2001 (ILAC, 2006).

International co-operation in the area of certification is carried out through the International Accreditation Forum (IAF). The IAF was established in 1992 as an informal co-operation and was incorporated in the United States in 1998. It is a world association of accreditation bodies working on the certification or registration of management systems, product certification and inspection. The IAF operates the IAF Multilateral Recognition Arrangement, whose member accreditation bodies recognise the results of each others accreditations as equivalent (IAF, 2008).

National accreditation bodies, which provide accreditation services for laboratories, certification bodies and inspection bodies, need to be recognised as competent in terms of the international mutual recognition mechanisms as managed by the International Laboratory Accreditation Co-operation (ILAC) and the International Accreditation Forum (IAF) (SADC, 2004:34). The national

accreditation body also has to be recognised by the government. Governments in developing countries often fund the international recognition activities because it recognises the importance of providing assurance to trading partners that suppliers of tests and certificates are competent and to overcome technical barriers to trade (ISO, 2006). Table 4.5 provides a summary of the standards infrastructure costs, financing, needs and planning considerations.

Table 4.5: Summary of the accreditation infrastructure costs, financing, needs and planning considerations

Costs	Financing	National needs	Planning considerations
Costly, in view of the need for ILAC and IAF mutual recognition and the expertise required.	Creation and operation of a single national accreditation body for laboratory, inspection and certification should be financed by government at least during the first phase and to maintain the international recognition. Where the scale of national requirements is insufficient to justify the cost, a regional solution should be	See the column to the left.	The viability of a regional or sub-regional accreditation infrastructure as an alternative to national infrastructure should be carefully considered.

	<p>sought.</p> <p>Industry should pay for the accreditation services, possibly on a reduced subsidy basis as the economy grows.</p>		
--	---	--	--

Source: Adapted from ISO (2008:24)

4.5 INSTITUTIONAL CAPACITY IN SOUTHERN AFRICA

African countries face critical challenges in terms of improving domestic capacity to meet the quality standards, safety and environmental technical regulations, which are required in global markets. Institutional reform and investment in human capital as well as infrastructure improvements in testing laboratories and certification facilities are necessary. Wilson and Abiola (2003:57,136-137, 204, 290, 401-404) highlight the following common challenges facing African countries:

- African enterprises looking for export opportunities find the international requirements of developed countries difficult to meet.
- The absence of effective technical regulatory authorities is putting pressure on local producers to substitute quality for price.
- African participation in the formulation of international standards and technical regulations is ineffective because of low political support and inadequate participation.
- African enterprises are therefore standards-takers and are always reacting to changing standards and technical regulations formulated by developed countries that do not accommodate unique African constraints.
- Government institutions, such as the standards bodies, often lack human, financial and infrastructure to assist enterprises.
- There is a lack of understanding of technical regulations in policy-making.

- There is a proliferation of technical regulatory responsibilities and roles across national regulatory institutions.
- Local technical regulations are out of date and enforcement mechanisms are ineffective.
- Local testing bodies, certification facilities and inspection bodies are not internationally recognised.
- Developed countries require compliance with more sophisticated best practice requirements. For example, many farmers in Africa are required to invest in the Euro Retailers Produce Working Group Good Agricultural Practices principles and Hazard Analysis of Critical Control Point protocols, which require, among other things, better supply chain management for traceability, record-keeping, detailed labelling and calibrated equipment. African countries find it difficult to comply with these requirements.

It is evident from the above that non-compliance with international standards and technical regulatory requirements is depressing Africa's access to global markets and is preventing African countries from taking advantage of market access initiatives such as the United States Growth and Opportunity Act and the European Union's Everything but Arms initiative. The case on the Southern African Development Community helps to illustrate this point.

Intra-regional trade in Southern African Development Community has been growing slowly but steadily over the past few years. Export, however, remains stagnant at about 20% of trade. A 2004 southern African Development Community report on regional non-tariff barriers in southern Africa found that most of the barriers to trade such as price control, state marketing, currency controls and export licensing have been eliminated as a result of the Southern African Development Community Trade Protocol. What prevail are barriers to trade as a result of arbitrary actions and non-transparency by member countries which continues to impact negatively on intra-regional trade (SADC, 2004:5-8).

In terms of technical barriers to trade, the abovementioned report highlights the following problems:

- Non-acceptance of national standards;
- Inability to do verification of compliance at national level;
- Lack of regional accreditation process;
- Temporary bans on selected products to protect local vested interest;
- protection of a small number of producers at the expense of the consumer;
- Inadequate technical barriers to trade inspections;
- Poor technical regulatory administration capacity;
- Unharmonised regional rules and procedures;
- Misuse of food safety and technical regulations; and
- Lack of capacity to meet international standards and regulations.

In an attempt to support efforts to facilitate trade and eliminate unnecessary barriers to trade, the Southern African Development Community's regional technical infrastructure consisting of the Southern African Development Community Co-operation for Metrology (SADCMET), the Southern African Development Community Co-operation for Standardisation (SADCSTAN) and the Southern African Development Community Co-operation for Accreditation (SADCA) have agreed that it is important to co-operate. Therefore policy-makers formalised the co-operation through a Southern African Development Community Standards, Quality Assurance, Accreditation and Metrology Memorandum of Understanding (SADC SQAM MOU), which was signed by the Southern African Development Community Ministers responsible for Trade and Industry in 2000.

In general, however, progress on technical infrastructure development in southern Africa is slow. The current status of technical infrastructure institutional capacity in the Southern African Development Community illustrates this point.

4.5.1 Metrology

The Southern African Development Community region identified five developmental stages for metrology. These stages were used to classify current national metrology activities in each of the countries. The classification is also useful because it helps with the identification of national metrology development needs. Table 4.6 identifies the five stages and the Southern African Development Community member states.

Table 4.6: Developmental stages for metrology and current status of SADC countries

Stage	Description	Country
A	<u>Non-existing</u> No metrology facilities.	Lesotho
B	<u>Rudimentary</u> Some metrology facilities. Some elements of SQAM legislation.	Angola DRC Mozambique Namibia Swaziland
C	<u>Existing</u> Established trade metrology system. Some national measurement standards. Traceable standards.	Botswana Malawi Tanzania Zambia Zimbabwe

Stage	Description	Country
D	<u>Almost recognised</u> Engaged in accreditation process. Participation in regional or international comparisons.	Mauritius
	<u>Recognised</u> Measurement services accredited by internationally recognised accreditation body. Comprehensive SQAM legislation.	
E	<u>Reference</u> Signatory to MRA between NMIs. CMCs in BIPM MRA database. Realisation of primary standards. NMI experts serve on CIPM consultative committees.	South Africa

Source: SADCMET (2003)

Table 4.6 indicates that almost all of the metrology bodies in the Southern African Development Community region still have a long way to go to be recognised internationally.

In the context of southern Africa, only South Africa is a member of the International Bureau of Weights and Measures (BIPM) and participates in the mutual recognition arrangement of the International Committee for Weights and Measures (CIPM). Therefore, only one Southern African Development Community country out of a total of 14 countries benefits from the membership, which provides a technical basis for wider trade, commerce and regulatory negotiations (BIPM, 2006).

4.5.2 Standardisation

In order to support the development of national standards bodies in a meaningful way, the Southern African Development Community region also identified five developmental stages for national standardisation activities. Table 4.7 describes the five stages and lists the status of the Southern African Development Community member states.

Table 4.7: Developmental stages for national standardisation activities and current status of SADC countries

Stage	Description	Countries
A	A national focal point; no national standards body; no standards development activity; no standards information.	DRC Lesotho Namibia Swaziland
B	A national focal point; no national standards body; national/regional standards publication; rudimentary standards information.	-
C	A national standards body; national/regional standards publication; rudimentary standards information; associate (or similar) membership of ISO/IEC but no meaningful participation in regional/international standards development process.	Angola Mozambique Zambia
D	A national standards body; national/regional standards publication; advanced standards information; meaningful participation in regional standards development process; limited participation in international standards development process.	Botswana Malawi Mauritius Tanzania Zimbabwe
E	A national standards body; national/regional standards	South Africa

	publication; standards information; meaningful participation in regional standards development process; meaningful participation in international standards development process.	
--	--	--

Source: SADCSTAN (2003).

Table 4.7 shows that the national standardisation infrastructure is more developed. The only country with a mature standardisation body is South Africa with a fully functional standards body, which can participate meaningfully in the international standards development processes. Botswana, Malawi, Mauritius, Tanzania and Zimbabwe have functional standards bodies but with very limited participation in the international standards development processes.

Developed countries invest a substantial amount of money in the international and national standards development process (UNIDO, 2005:101-103). Specifications of international standards are therefore strongly influenced by the large international companies of the developed world. There is a growing concern about the use of international standards and technical regulations as discriminatory technical barriers to trade. Although standards and technical regulations should be designed taking into account risk and scientific evidence, dominant groups can manipulate the standards development process to protect their interests.

In addition to the manipulation of international standards development processes by developed countries, developing countries lack the capacity to participate actively in international standards development activities. Developing countries also have limited capacity to provide credible information to defend their interests, which puts developing country enterprises at a disadvantage. This, therefore, makes developing countries standards-takers and thus reactive players in the international trade system. Developing countries enterprises are therefore at a plural constant disadvantage, which creates an asymmetric playing

field. Additionally, developing countries often have to comply with numerous technical requirements of different trading partners (Wilson & Abiola, 2003:xxxv).

4.5.3 Accreditation

In terms of accreditation infrastructure, only South Africa is a signatory to the International Laboratory Accreditation Co-operation and the International Accreditation Forum international mutual recognition mechanisms and therefore only South Africa's benefits because trading partners accept national tests and certificates.

The current efforts to establish a Southern African Development Community regional accreditation body, which will be internationally recognised, may solve the international recognition problem for those countries that cannot set up a national accreditation body.

4.5.4 Investment in technical institutions in the Southern Africa Development Community (SADC)

The European Union and the Southern African Development Community agreed in December 2005 to roll out a four-year project funded by the European Union to contribute to the development and implementation of a Southern African Development Community framework for technical regulations, and the establishment of a more effective, efficient and functioning technical infrastructure. The European Union will fund the project to an amount of 14 200 000 euros (SADC, 2006). The main objectives of the project are the following:

- The development and finalisation of a Southern African Development Community regional policy framework on technical regulations;

- The agreement by all member countries on Southern African Development Community Technical Barriers to Trade Annex to the Southern African Development Community Trade Protocol;
- The establishment of national focal points for standardisation and the strengthening of national standards bodies' capacity to comply with the obligations of the World Trade Organisation Technical Barriers to Trade Agreement;
- Securing Southern African Development Community National Metrology Institutes accreditation in core metrology fields by internationally recognised accreditation bodies;
- The establishment of an internationally recognised regional accreditation body for Southern African Development Community countries that choose not to have national accreditation bodies; and
- The strengthening of the capacities of public and private conformity assessment service providers.

The abovementioned investment in technical institutional capacity in the Southern African Development Community (excluding South Africa) will put the basic minimum technical infrastructure in place to facilitate trade. The development of a Southern African Development Community technical regulatory framework and the implementation of the Southern African Development Community Technical Barriers to Trade Annex will aim to improve technical regulatory practices in the sub-region with a view to deepen integration. The establishment of national focal points for standardisation will assist with the dissemination of international standards information to the Southern African Development Community enterprises.

The establishment of the Southern African Development Community Accreditation Body will facilitate mutual recognition of conformity assessment results at sub-regional level. The establishment of a sub-regional accreditation

body is unique to the Southern African Development Community and other sub-regions are currently investigating the approach as a cost-effective solution if countries choose not to have national accreditation bodies. The accreditation of key metrology fields will ensure traceability of all measures. Member countries will, however, be required to ensure consistent budgets to maintain the technical infrastructure to meet changing domestic needs in future.

At the signing ceremony of the European Union-Southern African Development Community Financing Agreement, Anders Henriksson, Director Horn of Africa, eastern and southern Africa, Indian Ocean and Pacific, Directorate General for Development, European Commission, commented that the project is a concrete outcome of the joint European Union-Southern African Development Community efforts to closely link trade and development. He also said that the project will facilitate exploitation of trading opportunities, which exist under the Economic Partnership Agreements.

Although South Africa cannot benefit from the above agreement, it went through an extensive technical regulatory and technical institutional reform process over the past two years. The following section provides an overview.

4.5.5 South Africa

The South African technical infrastructure is the most sophisticated in southern African. All three pillars, namely standardisation, metrology and accreditation, are in place and are internationally recognised (Jooste, Kruger and Kotze, 2003:235-290). The country, however, experiences the following problems (Jooste, Kruger and Kotze, 2003:290):

- Fragmentation in the technical regulatory system, which results in duplication and gaps;
- Keeping up with increased international demands in terms of more and more technical regulations as tariffs are reduced;

- Lack of effective participation by government in international standards development activities due to a lack of capacity stemming from the fact that too few people are responsible for too much work;
- Increased demands from developed country importers in the retail sector resulting in requirements that are becoming moving targets;
- Outdated standardisation, metrology and compulsory specification legislation;
- Peculiarity in the budgeting system in terms of which the National Metrology Laboratory and the South African Accreditation System submit budget and business plans to the Department of Trade and Industry and the South African Bureau of Standards submit budget and business plans to the Department of Science and Technology;
- Limited strategic interaction between the standards body of South Africa and government departments to identify issues of common interest in standards, accreditation, metrology and technical regulations;
- Small and medium enterprises find compliance costs high and their inability to invest in upgraded equipment hampers their ability to produce for international markets; and
- No effective mechanism to notify the South African industry of foreign technical regulations.

Examples of specific industry sectors in South Africa that have to adhere to international technical requirements are the following (Jooste, Kruger and Kotze, 2003:264-270):

- The high cost of compliance is illustrated by the cost of Hazard Analysis of Critical Control Point-related investment that the fisheries industry had to incur. A R15 million investment was required in the late 1990s to upgrade canning plants to comply with the European Union Hazard Analysis of Critical Control Point requirements. An additional R8–12 million investment was required to upgrade fishing trawlers and

factory vessels to comply with the European Union requirement for whole fish exports. The fishery industry also pays a levy to the South African Bureau of Standards. This levy funds the administration and enforcement of technical regulation in the industry. In 2001/2002, the industry paid R39 million to the South African Bureau of Standards. The South African Bureau of Standards, which is the formally notified body for export certification to the European Union, charges R275 to R300 per hour and the cost of each consignment certification is R94.

- The fruit industry in South Africa has to comply with various technical regulations such as quality standards, packaging marking and label requirements, traceability requirements, as well as food safety and phytosanitary requirement. Other requirements are the Euro Retailers Produce Working Group Good Agricultural Practices and the Hazard Analysis of Critical Control requirements of overseas supermarkets, which farmers and pack houses have to comply with. These requirements include environmental management, responsible agricultural practices, responsible use of agrochemicals as well as occupational health and safety and welfare of the worker. Table 4.8 sets out the estimated costs of compliance on selected farms in South Africa for selected standards (Jooste, Kruger and Kotze, 2003, 270).

Table 4.8: Estimated costs of compliance on selected farms in South Africa for selected standards

Costs and other details	Whyte Citrus	Riverside Enterprises	Patensie Citrus	Average
Tons of citrus growth (2001)	2,700	11,000	15,000	9,567
Hectares used	40	150	200	130
Revenue received per ton (2001) – rand	2,520	1,675	1,525	1,907
Per year costs of compliance per ton (2001-2002) with CBS – rand	19	68	27	38
Per year costs of compliance per ton				

(2001-2002) with EUREP GAP regulations – rand	37	9	47	31
Percentage of revenue lost due to costs incurred in compliance with CBS and EUREP GAP regulations	2.2 %	4.6 %	4.9 %	3.9 %
A foregone earnings per year estimate of the cost of US CBS regulations (percentage of total revenue)	-	-	R10 million (10 %)	-

Source : Jooste, Kruger and Kotze (2003:270)

In 2004, the South African Government finalised a South African policy position to modernise the South African technical infrastructure (DTI, 2004a). The main elements of the policy position include the updating of the legislative environment by the development of new legislation for standardisation, metrology, accreditation and compulsory specifications. The policy position for metrology resulted in the repositioning of the South African national metrology body as a separate public entity. The National Metrology Institute of South Africa was established on 1 May 2007 in terms of the Measurement Units and Measurement Standards Act, No 18 of 2006. The National Metrology Institute of South Africa is now in a position where it can align its activities with that of the South African National Accreditation Body and the South African Bureau of Standards. The South African National Accreditation Body was established as a public entity in order to strengthen government's recognition of the institution in terms of the Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, No 19 of 2006.

The South African Bureau of Standards was re-established on 1 September 2008 in terms of the Standards Act, No 5 of 2007 as the peak body responsible for standardisation and conformity assessment, which also receives its budget from the Department of Trade and Industry. Allowing other standard development organisations to develop sector standards and have them published by the South Africa Bureau of Standards will extend the standardisation activity. The policy

also proposes a review of South Africa's involvement in international standards to ensure that resources are targeted at the areas that are most relevant to South African industry and development (DTI, 2004a). Government also moved the regulatory responsibilities from the old SABS to the new National Regulator for Compulsory Specifications in terms of new the National Regulator for Compulsory Specifications Act, No 8 of 2007.

South Africa has recently finalised a strategy to ensure that its national technical regulatory framework complies with international requirements (DTI, 2006a). This strategy was developed because the South African government was of the opinion that the absence of a common approach to technical regulations is creating technical regulatory inefficiencies. The South African technical regulatory model makes provision for regular review, update and modification of technical regulations, the use of a consultation and stakeholder participation approach to ensure transparency of the process and to facilitate input by all stakeholders, the use of impact and risk assessment and other analytical tools to inform decisions by policy-makers and regulators (DTI, 2006a:8).

The Department of Trade and Industry in South Africa is responsible for ensuring that the national technical infrastructure system in South Africa operates optimally to support national interest and that it has strategic direction. The Department of Trade and Industry also provides the appropriate administrative and financial support to the technical infrastructure institutions, namely the National Metrology Institute of South Africa, the South African National Accreditation Body and the South African Bureau of Standards. Tables 4.9 and 4.10 set out the government financial support for South Africa's technical infrastructure institutions as well as the turnover of each institution.

Table 4.9: Financial support by South African government as percentage of turnover

	2005		2006	
NMI	R 34 860 000	74,8%	R 30 554 386	64,5%
SANAS	R 9 000 000	48%	R 9 530 000	45,5%
SABS	R 97 075 000	26,9%	R 96 075 000	29,3%
Total	R140 935 000		R136 159 386	

Sources: Annual reports SANAS, SABS and NMI (2005/2006)

Table 4.10: Turnover of the South African technical infrastructure institutions

	2005	2006
NMI	R 46 604 874	R 47 387 277
SANAS	R 18 722 693	R 21 075 426
SABS	R 360 594 000	R 330 227 000
Total	R 425 921 567	R398 689 703

Sources: Annual reports of SANAS, SABS and NMI (2005/2006)

The government of South Africa provides financial support and other relevant support to its technical infrastructure institutions because it is of the opinion that the technical infrastructure of South Africa has an extremely valuable role to play in underpinning the ability of the country to conduct trade (domestic and international) as well as the ability of a nation to build world-class competitive business enterprises that can compete effectively on the international stage (DTI, 2004a:24).

4.6 CONCLUSION

To conclude, the World Trade Organisation Technical Barriers to Trade Agreement provides the following key principles which countries needs to apply when developing technical regulations. The necessity principle, which determines that countries can use technical regulations, to attain the legitimate protection for their consumers and the environment. The non-discriminatory principle, which

requires that countries treat domestic and foreign products similarly when technical regulations are prepared, adopted and applied. The trade restrictiveness principle, which requires that countries choose technical regulations that do not create unnecessary barriers to trade. The proportionality principle, which implies that countries consider the costs and benefits of technical regulations. The transparency principle, which requires publication of technical regulations before they come into force and makes provision for comment periods. This principle provides for predictability and allows competitors to adopt their products timely. The last principle, which provides for the use of internationally harmonised measures, standards and conformity assessment requirements.

The World Trade Organisation Agreement on Technical Barriers to Trade has assisted enterprises to have access to information on technical regulations and conformity assessment procedures in export markets, to provide exporters with notifications on new technical regulatory proposals that may be affected them and to keep track of proposed standards in the markets to which they wish to export.

The programmes of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development are regional co-operation activities, which build onto the World Trade Organisation Technical Barriers to Trade Agreement in an effort to find innovative solutions for technical regulatory harmonisation, mutual recognition and co-ordination. The three initiatives have common approaches to clear problem definition, the use of alternative mechanisms to technical regulations, , the use of performance-based regulations and international standards and the need to clearly defined conformity assessment requirements. that A transparent and predictability technical regulatory system is important..Intergovernmental and inter-regulatory co-ordination and participation have to be promoted to avoid inconsistency, incompatibility or duplicative technical regulations. .Impact and risk assessment

analysis is important tools that policy-makers and regulators can use to choose appropriate technical regulatory responses. Technical regulations have to be monitored and reviewed.

In terms of institutional capacity, it can be concluded that the Southern African Development Community is still at the early stage of technical institutional development. The low development stage may be a reflection of the highly technocratic nature of standards, technical regulations and conformity assessment, which policy-makers often find difficult to understand thus resulting in limited political support as well as the relatively high investment requirements. There is, however, an opportunity for the Southern African Development Community to approach the upgrading and reform of the Southern African Development Community's technical infrastructure more holistically with a view to finding a cost-effective solution for southern African. This will require some political trade-offs.

The case study information on South Africa helps to demonstrate where the investment in technical infrastructure is necessary, should African countries want to facilitate trade and eliminate technical barriers to trade (TBTs).

CHAPTER 5

AN ANALYSIS OF TECHNICAL REGULATORY REFORM AND STATE INSTITUTIONAL CAPACITY: IMPLICATIONS FOR AN AFRICAN TECHNICAL REGULATORY FRAMEWORK

5.1 INTRODUCTION

The purpose of this chapter is to analyse the case studies described in Chapter 4. The analysis will focus on the multiple case studies of the World Trade Organisation and the Asian Pacific Economic Community, the Organisation for Economic Co-operation and Development with a view to draw conclusions about possibilities to generalise the findings or best practices for an African programme taking into account the historical, economic or social factors that impact on such a programme. The analysis will aim to identify emerging best technical regulatory practices and emerging areas for improvement in the area of technical regulatory practices.

5.2 TECHNICAL REGULATORY REFORM

In a particular market, several companies may provide similar products. Consumers will buy specific products to the exclusion of others because the products meet their needs based on their preferences in terms of design, quality, service and price. As a general rule, consumers take the safety of the product for granted. In an ideal world, no product will jeopardise the health and safety of consumers or impact negatively on the environment (ITC, 2004:3).

However, internationally it may occur that markets sometimes let the consumer down and products fail or harm consumers or damage the environment. One of the reasons is that manufacturers of products may be enticed to cut costs and keep their prices low in order to gain or maintain market share. Because

individual consumers seldom have the resources to deal with product failures they rely on their governments for protection. Thus, governments have the right and the obligation to intervene in the marketplace. This intervention in terms of which government determines and controls the technical requirements of products that have health, safety and environmental implications takes the form of technical regulations (WTO, 2006).

Governments and their regulators adopt various approaches when imposing technical regulations. These technical regulations may involve product standards, conformity assessment such as product certification, testing and inspection, pre- or post-market requirements as well as sanctions if the products fail to meet the technical regulations. As a result of the multiplicity of approaches used by different governments and their regulators, it is difficult for companies, specifically companies from developing countries, to meet requirements in both the domestic and the export market (ITC, 2004:6, 14).

In view of the abovementioned complexities, many governments and regions started with policy reviews that focused on technical regulatory reform. The point of departure for technical regulatory reform is a technical regulatory reform policy for a region. Such a policy usually sets out the principles that govern the reform and provides the domestic and foreign public with information on what can be expected from government (APEC-OECD, 2005:5). The policy also forms the basis for government action and identifies substantive areas for analysis. In addition, the policy provides an opportunity for political leaders and senior government officials to express support and interest in the technical regulatory reform activities.

This support and interest is crucial because technical regulatory reform may threaten powerful interest groups inside and outside government. Therefore, a strong message that confirms commitment is needed to build and maintain public consensus for the reforms. Often the short term of cost of the reform process

may be considered expensive; however, maintaining the status quo may increase cost of reform over the long term (APEC-OECD, 2005:3). In addition if change of the culture of economic actors, regulators and institutions is required, high-level commitment needs to be sustained over time. Political leadership in public policy-setting will thus help to balance social and environmental factors with economic, competitive and market openness objectives of regulatory reform activities.

In order to assure effective implementation of the technical regulatory reform policy, it is necessary to assign specific responsibilities for different aspects of the reform and to create a framework for accountability. In addition, effective implementation requires co-ordination between various stakeholders such as departments, ministries, regulators, public and political leaders across a number of areas with a clear understanding of the role of each stakeholder.

O'Brien (2003) confirms the need for effective implementation that is co-ordinated and points out that technical regulatory reforms are complex because it involves intersecting physical and natural information with cost and benefit analysis of economists within the context of intricate laws and jurisprudence, the methods of public administration, and, to the force of public opinion. The challenge for a region is to develop a technical regulatory region's system that accommodates the region's specific challenges. The system should take account of the legislative and political system of the countries in the region and the system should respect the policy-maker's discretion to balance the complexities and trade-off between achieving legitimate technical regulatory objectives and market competitiveness and openness (OECD, 2003).

It is recognised that generalising findings and identifying best practice are difficult because of different views, different approaches and even gaps in terms of knowledge. Best practice is generally understood as adaptable and not a one-size-fits-all concept that may be used by specific regions to suit their specific

technical regulatory needs and challenges and objectives. In the context of this study, *best practice* means identifying common patterns in technical regulatory policy approaches by various regions as well as emerging areas for improvement.

There are particular core trends that can be identified based on international and regional information and guidance and can be used to develop flexible regional policy approaches. The case studies of the World Trade Organisation, the Asian Pacific Economic Community, the Organisation for Economic Co-operation and Development and the Southern African Development Community identify emerging best technical regulatory practices and emerging areas for improvement in the area of technical regulatory practices with the focus on non-discrimination, transparent and open decision-making processes, the avoidance of unnecessary trade-restrictiveness, the use of extensive impact assessment and risk assessment tools, the use of internationally harmonised measures and the streamlining of conformity assessment processes.

The following sections analyse each of the abovementioned technical regulatory areas in detail.

5.3 NON-DISCRIMINATION

Non-discrimination means that technical regulations should not be applied differently to different companies or different countries. It also means that technical regulations should not be developed to favour a particular company or category of companies (APEC-OECD, 2005:6).

In order to eliminate discrimination in technical regulations, it is important that new and proposed technical regulations are examined to ensure that such requirements that may be discriminatory are avoided. Such unintended effects can be avoided through effective consultation with all relevant stakeholders as

well as impact analysis of the effect of a new technical regulation on trade and investment.

It is important for regions to assure compliance with this principle because it can impede negatively on regional and foreign investment, competition, access to higher quality products, lower prices and technology transfer (APEC-OECD, 2005:30).

5.4 TRANSPARENCY

Transparency is one of the most important building blocks of a good technical regulatory system. A transparent system should make provision for effective access to existing technical regulations for all market participants and stakeholders, domestic and foreign. The system should also provide systematic information of technical regulations in the making. Predictability and clarity of the technical regulatory-making process also provide for participation by stakeholders at appropriate times in the process (APEC-OECD, 2005:8).

Participation through public consultation should be open to all interested parties, including other governments, non-governmental organisations, trade unions, the private sector, consumers, accreditation bodies and standardisation organisations. These consultation processes are important because they improve the quality of technical regulations and may reduce enforcement costs for government (APEC-OECD, 2005:6).

Transparency may be achieved through publication of information, national enquiry points, notification to the World Trade Organisation (WTO, 2006), providing online information, compendiums of technical regulations and prior consultation and comment procedures. The codification of the technical regulatory process, supplemented with policies relating to the technical regulatory activities and detailed guidance on processes can be used successfully.

Regions also commit to periodic reviews of the existing technical regulation with a view to confirm whether the technical regulations are still relevant. Systematic and rigorous processes to facilitate public consultation are implemented by regions. These processes include prior notification and sufficient comment periods and are open for all interested stakeholders.

Transparency has the benefit that it ensures compliance and thus the achievement of public policy objectives. Other benefits are that it promotes public confidence, predictability and fairness. In addition, it contributes positively to the attractiveness of the investment climate for both domestic and foreign investors as well as new market entrances including small and medium enterprises (APEC-OECD, 2005:29).

A transparent approach to technical regulations, however, recognises that government policy action often involves trade-offs in order to maximise social welfare and therefore these trade-offs need to be assessed and discussed in an accountable manner.

5.5 AVOIDING UNNECESSARY TRADE-RESTRICTIVENESS

It is important for policy-makers to promote approaches to technical regulations and their implementation which avoid unnecessary barriers on economic actors. This requires an assessment of whether a proposed technical regulation is the least trade-restrictive option available for the achievement of the regulatory objective (APEC-OECD, 2005:26). It also requires the use of performance requirements as well as taking into account the equivalence of countries' technical regulatory requirements in meeting the specific regulatory objective (APEC: 2000). It also entails allowing for flexibility in the way the technical regulations are met and thus avoiding prescribing how it should be done. This approach to technical regulations is positive for the development of new, innovative and cost-effective solutions and technologies (ITC, 2005:21).

Many countries rely on technical regulatory impact analysis to avoid unnecessary trade-restrictiveness. Systematic assessment of the impacts of proposed technical regulations includes cost and benefit analysis, investigation of possible feasible alternatives to the proposed technical regulation and an analysis of the impact of such a regulation on trade and investment and small enterprises.

Guidance and checklists for policy-makers on impact assessments, quality control standards for the preparation of thorough impact assessment as well as the publication of impact assessment analyses in the public domain are tools used to ensure consistently high quality and effective technical regulations. This should be complemented with the training of technical regulatory officials who are responsible for the preparation of technical regulatory impact assessment. The training should also include improved awareness amongst technical regulatory officials for trade-friendly regulations that do not compromise the technical regulatory objectives (APEC-OECD, 2005:10). The efficient co-ordination at interdepartmental level through appropriate consultation and the creation of new forums where appropriate mechanisms do not exist are also vitally important.

5.6 USE OF INTERNATIONALLY HARMONISED MEASURES

International standards play an important role in global trade. Compliance with different national standards and technical regulations increases the cost of companies to operate in different markets. The development of international standards may offer a solution to fragmented technical regulatory systems and the World Trade Organisation agreements encourage the use of international standards as a basis for domestic regulations wherever it is feasible and appropriate for the achievement of a specific regulatory objective (ISO, 2008:15). Such reliance should be a pertinent principle of technical regulatory reform policies. Active participation in the development of international standards and ongoing national commitment of resources or participation in international

standards setting is a good indicator of the preference to use international harmonised standards as a basis for domestic regulations.

In terms of choosing between prescriptive technical regulations or performance-based technical regulations, performance-based technical regulations are generally preferred because they represent a more flexible approach and allow those that are regulated to determine their own technique for achieving compliance with the technical regulations. Performance-based technical regulations provide flexibility while ensuring that the objective is achieved (APEC, 2000). The Asian Pacific Economic Community, the Organisation for Economic Co-operation and Development endorse performance-based technical regulations because they are considered to be a less trade-restrictive form of technical regulation.

The use of international standards as a basis for technical regulations also facilitates the acceptance of foreign measures as equivalent to domestic measures (APEC, 2000). Experiences in the area of equivalence are limited even in developed countries and best-practice approaches are not forthcoming. The European approach is to test equivalence based on an essential requirement test. There are, however, many operational and interpretation challenges that appear to hinder acceptance of equivalence.

In addition to the above, the concept of internationally harmonised standards also covers the streamlining of the conformity assessment process internationally to facilitate mutual recognition, mutual acceptance and reliance on supplier's declarations of conformity assessment results.

5.7 CONFORMITY ASSESSMENT

Best practice patterns are difficult to identify as a variety of approaches to streamline conformity assessment processes is in use. The European approach

to streamline conformity assessment requirements is prescriptive and highly rules-based. The Asian Pacific Economic Community accepts that governments may require assurance that products placed on their markets comply with the technical regulations to ensure the health and safety of the public and the environment. The Asian Pacific Economic Community, however, also recognises that the need for assurance of conformity with technical regulations places an inherent burden on manufacturers specifically if manufacturers are required to have products re-tested or re-certified even though they have already been tested or certified in the country of origin. The Asian Pacific Economic Community recommends acceptance of the results of conformity assessment activities undertaken by competent bodies in other countries. The key factor for acceptance of conformity results is the confidence that regulatory authorities in the importing countries have in the technical competence of the conformity assessment bodies in the exporting country to assess products to the importing economy's requirements.

National and regional accreditation mechanisms that inspect and acknowledge the competency and reliability of conformity assessment bodies have sought to enhance confidence in the efficiency of conformity assessment activities. These accreditation institutions are actively establishing an international network that allows the acceptance of results and eliminate duplicative efforts. The aim of these streamlining efforts is to have a test-once, certify-once or inspect-once approach that is accepted by others. It also aims to introduce competition to the conformity assessment market and potentially reduces the cost borne by manufacturers in certifying and testing their products (ISO, 2008:17-18).

5.8 IMPACT AND RISK ASSESSMENT

Governments are increasingly presented with the need to identify and respond to a multitude of risks that prevail in the marketplace in terms of health and safety of the consumer and the environment. Once the nature of the problem is established, the magnitude of the problem must be assessed. A commonly used tool to do this is risk assessment (APEC-OECD, 2005:18). This is the process of considering the various risks associated with a particular situation, procedure or operation. It should include assessing the risk of not doing anything and of following a particular course of action. The World Trade Organisation Technical Barriers to Trade Agreement confirms the importance of risk assessments and advises that consideration must be given to the risks that the non-fulfilment of the legitimate objectives may create. Further, the agreement suggests that: "In assessing such risks, relevant elements of consideration are, inter alia: available scientific, technical information, related processing technology or intended end-uses of products" (WTO: 2006).

In support of the risk assessment, impact assessment analysis is a useful tool for policy-makers and regulators to decide which particular technical regulatory response is the most appropriate given the specific social, economic and political environment. The analysis enables decision-makers to make judgements about the reasonableness of a technical regulation and the practicalities for those who will be required to comply. Impact assessment analysis also allows technical regulations to be designed so that they impose the lowest costs and yield the greatest benefits (APEC, 2002).

Impact assessment analysis should therefore not be thought of as an after-the - fact exercise when the technical regulatory decision has been made. Impact assessment analysis should rather be used to inform the policy investigation and analysis throughout the development process; also be proportional in terms of complexity and level of analysis to the problem that it wants to solve; and should

consider the sources of risks. The Asian Pacific Economic Community Information Notes of September 2002 (APEC, 2002) identify the following sources of risk: the ability of regulators and of injured parties to take action, the possibility that small opportunistic enterprises might produce defective products, or that large businesses might systematically undermine the regulatory system based on their own risk strategies, the degree to which the public rely on the government to ensure product safety, the extent to which the rate of technological growth can introduce new products into the market, the possibility of internal industry controls to self-regulate and lastly, the extent to which businesses need to protect their tradenames and trademarks.

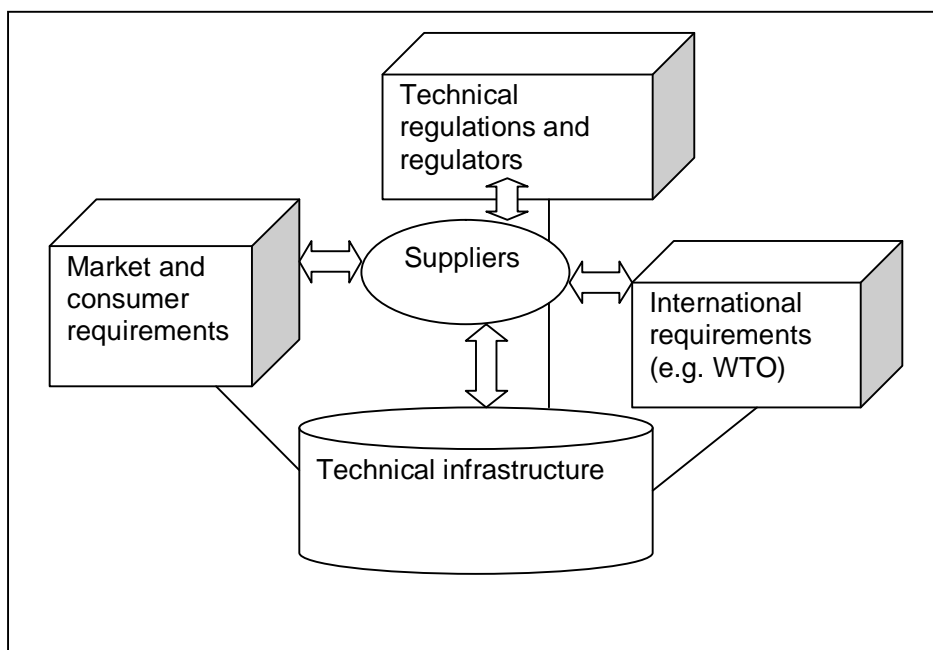
Impact and risk assessment, however, remains subjective and is often informed by judgements and assumptions where information may be incomplete. The challenge for the policy-maker is to minimise subjective biases by analysing relevant information gathered from published literature, regulatory experiences, industry practice, market research, economic and other models as well as expert knowledge.

5.9 TECHNICAL INFRASTRUCTURE CAPACITY IN AFRICA

The technical infrastructure capacity of a country and a region facilitates trade, regional integration and industrial development. These are tools that may be used by government to enable it to meet policy obligations to protect the health and safety of the public and the environment. It, therefore, becomes necessary for governments to establish and maintain their technical infrastructure and to secure international recognition for their systems if they want to participate competitively in international trade and if they want to facilitate regional trade in Africa (ISO, 2008:19-21). African countries that envisage export-led economic development and improved industrial development should establish adequate technical infrastructure (ITC, 2005:30) The technical infrastructure institutions also need to be signatories of the various international mutual recognition

arrangements of the International Accreditation Forum, the International Laboratory Accreditation Co-operation and the Bureau International des Poids et Mesures (ITC, 2005:36). Figure 5.1 illustrates how the technical infrastructure supports activities of manufacturers and exporters and therefore facilitates trade and export.

Figure 5.1: Supporting technical infrastructure



Source: Adapted from ITC (2005:6)

The technical infrastructure capacity demands offer both opportunities and competitive challenges to the sustainable development of the African region. When considered in the light of Africa's economic strategies, e.g. the Market Access Initiative and the Productive Capacity Initiative, which aim to facilitate market access for African products through improved production capacity, the important role of infrastructure for standardisation, accreditation and metrology

should not be underestimated. As a result, the reform of the African technical infrastructure becomes urgent and a priority (UNIDO, 2007:14).

The abovementioned case studies highlight the fact that African enterprises wishing to export to developed countries have to comply with international standards and technical regulations. Non-compliance resulted in bans that impacted negatively on their economies. Tables 5.1 and 5.2 identify the reasons for banning of exports from Africa by the European Union and the United States of America over a period of two years (UNIDO, 2007:15,16).

Table 5.1: Notifications of the European Union rapid alert system for food and feeds concerning African exports - January 2005 to December 2006

Sub-regions	Percentage of notifications related to food safety requirements	Examples of food product categories	Reasons for notifications
EAC	69	Fish, crustaceans and molluscs	Salmonella in fish
ECCAS	100	Fish, crustaceans and molluscs	High content of sulphites in frozen crabs and prawn
ECOWAS	93	Nuts and nut products, spices	High aflatoxin content in peanut butter, groundnuts and chilli spices
SADC	93	Nuts and nut products	High aflatoxin content in peanut butter, groundnuts and chilli spices
UEMOA	78	Coffee	High ochratoxin content in coffee

			beans
COMESA	95	Nuts and nut products, spices	High aflatoxin content in peanut butter, groundnuts and chilli spices

Source: Adapted from UNIDO (2007:15)

Table 5.2: United States Food and Drug Administration import refusals from Africa - January 2005 to December 2006

Sub-regions	Percentage of notifications related to food safety requirements	Examples of food product categories	Reasons for notifications
EAC	11	Candy without chocolate	Unsafe food additives
ECCAS	13	Vegetables/vegetable products	Containing filthy substances unfit for human consumption
ECOWAS	15	Fishery/ seafood products	Containing putrid and decomposed substances
SADC	17	Baby food	Containing putrid substances and pesticide chemicals
UEMOA	46	Fishery/ seafood products	Containing putrid and decomposed substances
UMA	19	Fishery/ seafood products	Containing high levels of histamine
COMESA	25	Fruit/fruit products	Containing putrid and decomposed substances

Source: Adapted from UNIDO (2007:16)

The abovementioned information confirms that African exports to developed country markets are often refused for reasons related to product characteristics, safety and health requirements. The implication is that the lack of technical infrastructure capacity means products are refused market access and where African products do enter export markets, it is often at higher cost of compliance, which impacts negatively on the competitiveness of enterprises (UNIDO, 2007:15). It forces exporters from African countries to seek the conformity assessment services at the port of entry for their products, thus placing them at a competitive disadvantage even before they reach their intended market. Where government, however, provided appropriate technical infrastructure, benefits to the domestic enterprises mean lower cost of compliance, which impacts positively on the competitiveness of enterprises.

There are five sub-regional groupings in Africa, which have various arrangements for standards and metrology. The sub-regions are the Common Market for East and Southern Africa, the East African Community, the West African region, the Economic Community of West African States and the Arab Magreb region. These regions are at various stages of co-operation and co-ordination as discussed in the following paragraphs.

The Southern African Development Community's regional technical infrastructure consisting of the Southern African Development Community Co-operation for Metrology (SADCMET), the Southern African Development Community Co-operation for Standardisation (SADCSTAN) and the Southern African Development Community Co-operation for Accreditation (SADCA) is dealing with standards, metrology and accreditation issues respectively. Ratification of the Southern African Development Community Technical Barriers to Trade Annex to the Protocol extended the memorandum of understanding to include technical regulations. Progress on infrastructure development is, however, still too slow and only South Africa has a fully developed and functional technical

infrastructure to support its competitiveness and development strategies. The region established the first regional accreditation body which serves the needs of the Southern African Development Community countries that do not have their own national accreditation body (SADC SQAM, 2006).

The Common Market for East and Southern Africa has standardisation included as a separate chapter in the Common Market for East and Southern Africa Treaty, rather than in an annex in one of the protocols. A Common Market for East and Southern Africa committee dealing with standardisation has to be set up in terms of the overall treaty provisions, which then reports directly to the council of ministers. This committee has not been established yet, but is envisaged in the near future. There is a general lack of progress on technical infrastructure among the Common Market for East and Southern Africa member states, with Egypt and Kenya probably the most advanced. They do not, however, match the development stage of South Africa. Eight countries have dual membership between the Common Market for East and Southern Africa and the Southern African Development Community. Namibia has indicated that it is considering leaving the Common Market for East and Southern Africa (SADC, 2004:20).

The East African Community (EAC) region has established a similar regional programme to the Southern African Development Community Standards, Quality Assurance, Accreditation and Metrology Programme. It is called the East African Community Standards, Quality Assurance, Metrology and Testing Programme and is officially established through an East African Community Protocol. The three members of the East African Community, namely Kenya, Uganda and Tanzania, who are all members of the Common Market for East and Southern Africa, with Tanzania also being a member of the Southern African Development Community, signed a protocol on standardisation, quality assurance, metrology and testing in 2000. They pursue a common policy for standardisation, quality assurance, metrology and the testing of goods and services that are traded

among the three members to foster the process of integration for the mutual benefit of all (SADC, 2004:20).

In 2004 the text for over 200 standards has been agreed upon by East African Community members. They have, however, not been published yet by the East African Community Secretariat and therefore the implementation status of these standards is unclear. The three countries have recently embarked on a project to enhance their metrology and testing capabilities, which are still underdeveloped (SADC, 2004:21).

The West African region (JEMOA) and the Economic Community of West African States (ECOWAS) only recently started with the process of setting up and implementing technical infrastructure programmes on standardisation, accreditation and metrology (SADC, 2004). Informal regional technical infrastructure co-operation has existed in the Arab Magreb region between the neighbouring countries of Algeria, Morocco and Tunisia since 2003. A formalisation of the structures for standard and metrology has been discussed during the last meeting of the region in 2005 (SADCMET, 2006).

A United Nations Industrial Development Organisation report of 2007 (UNIDO, 2007:26), which assessed the specific technical infrastructure needs of African countries, however, confirms that the status of technical infrastructure in the region is cause for concern. This status as detailed in the abovementioned report is depicted in Table 5.3 (for the 32 countries that responded to the assessment).

Table 5.3: Overview of the technical infrastructure situation in Africa and the number of countries that have technical infrastructure

Sub-regions	Countries that have a metrology body	Countries that have an accreditation body	Countries that have a standards body	Countries that have a national certification body	Countries that have a WTO TBT Enquiry Point
EAC	2	1	3	1	3
ECCAS	2	0	2	1	4
ECOWAS	3	0	4	3	4
SADC	7	2	8	3	11
UEMOA	5	1	8	4	6
UMA	3	4	4	2	2
OTHERS	4	1	3	1	2
Total	25	9	32	15	32

Source: Adapted from UNIDO (2007: 26)

It is important to note that the abovementioned survey does not imply that the national bodies for standards, metrology or accreditation that exist are fully operational. These state institutions often are not members of the international technical infrastructure institutions, lack funding, their equipment is old and technical skills are limited (UNIDO, 2007:27). The report (UNIDO, 2007:26) recommends that each sub-region should at least have one country which is a member of one of the most important international technical infrastructure organisations and that that country represents the sub-region. Sub-regional positions at the international meeting, however, need to be informed by sub-regional positions which may require a sub regional consultation mechanism.

To conclude, the Southern African Development Community is the first sub-region in Africa that took the initiative to align the Southern African Development Community activities on standards, metrology and accreditation in order to support the need for common technical regulation in the sub-region. This

approach is in line with that of other regions considering the work of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development on regulatory reform and its importance for economic development. However, the Southern African Development Community has only just started the process of regulatory reform. The Southern African Development Community officials will have to focus their attention on the development of policy and guidelines to assist their governments with the implementation of the Southern African Development Community Technical Barriers to Trade Annex.

5.10 TECHNICAL INFRASTRUCTURE CO-OPERATION

The need for the establishment of reliable technical infrastructure in Africa through co-operation has many benefits. These benefits may include enhanced export potential for enterprises and increased protection for international and local consumers because products are safe. Other benefits may be in terms of the sharing of cost, specialised knowledge and skills.

5.10.1 Metrology

In the area of metrology, the case study of the Southern African Development Community indicates that it will be necessary for all African countries to at least develop to a stage where they will have an established trade metrology system, some national measurement standards and traceable standards. However because of the high cost of metrology, African countries can secure their international recognition through the more mature metrology institutes in Africa, which are internationally recognised and respected in terms of technical capacity such as the National Metrology Institute of South Africa and which are members of the Bureau International des Poids et Mesures. These institutes will provide a technical basis for wider trade, commerce and regulatory negotiations.

A recent report of United Nations Industrial Development Organisation to the Africa Ministers of Trade confirms the need for a minimum spectrum of calibration capacity at national level for mass, volume and temperature in order for a country to establish a trade metrology system. The report, however, argues in favour of a sub-regional approach to investment in measurement metrology (UNIDO, 2007).

An important development in the area of metrology is the initiative of New Partnership for Africa's Development, which established an Inter-Africa Metrology System aiming to promote inter-African co-operation in metrology and the establishment of a regional measuring system (UNIDO, 2007).

5.10.2 Standardisation

In the area of standardisation, the case study of the Southern African Development Community indicates that there is an opportunity for standards bodies to work together to reach the stage where they target international standards development activities that are of importance for the sub-region thus becoming proactive players in the international trade system and creating a symmetric playing field for African enterprises (ITC, 2005:45). This approach also includes pooling limited capacity to provide credible information to defend Africa's interest. The competitive nature of the standards bodies in the provision of conformity assessment services may, however, make co-operation very difficult. Pressure from government and domestic and regional enterprise associations will be necessary if this is to happen.

At African level, the African Organisation for Standardisation has existed since 1977. The initial aim of the African Organisation for Standardisation was to develop African standards. This, however, did not happen because of the focus of national standards bodies to develop national standards. Recently, it was agreed that the African Organisation for Standardisation should be responsible

for co-ordination and harmonisation of standards and conformity assessment in Africa (UNIDO, 2007).

The 2007 report of the United Nations Industrial Development Organisation found that language remains an issue in the exchange of information and co-operation. The report also highlights that access to international standards is a major problem in many African countries. An example is the many laboratories in Africa, which do not have access to important International Standards Organisation standards such as International Standards Organisation 17025, which determines how laboratories should operate. The view is that there is a breakdown in the standards development process internationally and nationally and the use of the process nationally. The fact, however, is that International Standards Organisation standards are available for immediate use to enterprises, laboratories and other conformity assessment bodies in all countries at a cost even if they have not been adopted as national standards. National standards bodies will usually only adopt those international standards that are most commonly used in their countries as national standards if they are members of an international standards organisation.

5.10.3 Accreditation

In the area of accreditation, the establishment of the Southern African Development Community accreditation body clearly illustrates how countries can pool resources to benefit the sub-region. This is a first in the world but the International Accreditation Forum and the International Laboratory Accreditation Co-operation gave their approval in principle. Other sub-regions are also interested in the approach. It is, however, important to note that the International Accreditation Forum and the International Laboratory Accreditation Co-operation approval needs to translate into mutual recognition once the Southern African Development Community accreditation body is ready for peer review.

However, for the accreditation body of a sub-region to add value, there has to be competent laboratories, certification bodies and inspection authorities. The 2007 United Nations Industrial Development Organisation report found that testing laboratories in Africa, which are mostly part of government, have inadequacies in terms of measurement traceability, use of certified reference material to confirm test results, access to proficiency schemes, trained staff and maintenance of facilities. Other problems include lack of testing equipment, inappropriate environmental conditions and inadequate budget. In South Africa and Nigeria, the majority of laboratories are private, which confirms a commercial demand for testing and therefore a potential market for accreditation services.

There are plans to also start with a co-ordinated approach in accreditation in Africa. The aim of the co-ordination will be to facilitate representation of the African region in international accreditation forums, namely the International Accreditation Forum and the International Laboratory Accreditation Co-operation, to disseminate information on accreditation in the region, to share resources, expertise and experience by member bodies and to provide access to international recognition (SADCA, 2008).

5.11 SOUTH AFRICA

The modernisation and technical regulatory reform attempt in South Africa illustrates the need for continuous improvement in order to ensure that the technical infrastructure continues to support the needs of domestic enterprises competing in a fast-paced global economy. In this regard, the South African government completed a legislative review that established the South African National Accreditation System and the National Metrology Institute of South Africa as two new public entities although both have been operating for 15 and 50 years, respectively. The South African National Accreditation System and the National Metrology Institute of South Africa were established in terms of the Accreditation for Conformity Assessment, Calibration and Good Laboratory

Practice Act, No. 19 of 2006 and the National Measurement Standards and Measurement Units Act, No. 18 of 2006 on 1 May 2007. The South African Bureau of Standards which has been operating for more than 60 years was also re-established in terms of the new Standards Act, No. 8 of 2008 on 1 September 2008. The main change for the South African Bureau of Standards as a public entity is that government removed the institution's regulatory responsibility in order to prevent a conflict of interests between the conformity assessment services, which the institute provided, and the regulatory responsibility, which it had to administer.

At enterprise level, many of South Africa's enterprises have risen to the challenge of competing on a global scale and are successfully exporting goods and services around the world. The technical infrastructure for standards-setting, quality assurance, accreditation and metrology is a crucial element of competitiveness and is also critical in expanding market access and promoting regional integration in southern Africa. As such, South Africa's Draft Industrial Policy identifies the need to leverage the technical infrastructure activities to support the priority sector development initiatives of government throughout the value chain of manufacturing (DTI, 2006b).

5.12 CONCLUSION

In summary, best-practice patterns in terms of technical regulatory approaches are evident in terms of transparency, the use of a less trade-restrictive form of technical regulation and the use of internationally harmonised standards and technical regulations.

Transparency is considered to be one of the most important building blocks of a good technical regulatory system. Transparency is about the provision for effective access to existing technical regulations and systematic information of technical regulations in the making as well as facilitating the effective and

appropriate participation by and consultation with stakeholders. The benefit of a transparent system is that it makes the technical regulatory system predictable and clear. The codification of the technical regulatory process, supplemented with policies relating to the technical regulatory activities and detailed guidance on processes can guide policy-makers when they develop, implement and monitor technical regulation.

In order to avoid unnecessary trade-restrictiveness, policy-makers increasingly use technical regulatory impact and risk analysis to inform their decision-making processes. Guidance and checklists on impact are tools used to ensure a consistently high quality and effective technical regulations. This is often supported by training of technical regulatory officials who are responsible for the preparation of technical regulatory impact assessment. Co-ordination at interdepartmental level prevents duplication, inconsistency and incompatibility. The use of international performance-based standards and conformity assessment requirements as a basis for domestic technical regulations is recognised and accepted as best practice.

It is, however, difficult to identify clear patterns in terms of conformity assessment as a variety of approaches to streamline conformity assessment processes are in use and best-practice approaches in the area of equivalence are also difficult to identify. The establishment of internationally recognised national and regional accreditation mechanisms and networks, however, is increasingly useful to enhance confidence in the efficiency of conformity assessment activities.

Technical regulatory reform in Africa has to take into account that while the needs of the public for consumer protection and fit-for-purpose goods and services are essentially the same for people in developed and developing countries, there are constraints to the implementation of standards in a developing country. These constraints relate to the industrial capacity of the region that might be insufficient to produce local goods of the required quality,

technical regulations that might be insufficient to adequately protect the environment or to prevent the importation or dumping of lower quality or unsafe products and consumer awareness and passion for good quality might be absent or exist only at a low level. For African policy-makers, the means of rectifying the abovementioned situation involves the creation of efficient infrastructure to satisfy the demands and requirements of globalisation and a multilateral and regional trading system.

In terms of technical infrastructure, the case studies illustrated the link between technical regulatory reform and institutional capacity. The benefits of establishing reliable technical infrastructure have been established. These benefits include enhanced export potential for enterprises and increased protection for international and local consumers because products are safe. It is, however, acknowledged that there are problems with the development of the technical infrastructure in Africa. One of the main problems is cost. Another problem relates to the need for specialised knowledge and skills. A regional approach to some of the problems appears to offer a solution. This will require political will and the right decisions by policy-makers to take advantage of current existing institutions, pooling of human and financial resources and the avoidance of expensive duplications.

To conclude, it is important to understand that there is no ready-made model for technical regulatory reform and the development of technical infrastructure to support it, either in terms of the components that are required for the reform or the degree of sophistication that the technical infrastructure institutions should have. There is also no ready-made model for the way that technical infrastructure services can be delivered. Therefore, developing countries themselves must make these policy decisions and provide their ongoing political commitment to those decisions.

CHAPTER 6

RECOMMENDATIONS FOR AN AFRICAN POLICY APPROACH TO TECHNICAL REGULATORY REFORM

6.1 INTRODUCTION

In this chapter, a number of policy recommendations are made for the development of an African policy framework that will respond to the needs of the region. The recommendations are **firstly**, informed by the analysis of the international technical regulatory policies of the World Trade Organisation, the regional policies of the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development, and at African level, the technical regulatory policies of the Southern African Development Community. **Secondly**, the recommendations are informed by the international and Southern African Development Community policy trends in the areas of standardisation, metrology and accreditation.

The recommendations consider policy proposals for a common approach to technical regulatory reform based on the abovementioned best practice, which is applicable and valuable for Africa; for the establishment of an African co-operation and co-ordination on technical regulations, standards, metrology and accreditation; for the development of complementary sub-regional capacity to meet the needs of the sub-regions and to provide building blocks for African co-operation; and lastly, for technical support to enterprises to manufacture and sell quality goods and services, which they can export competitively to other African countries and to countries in other regions.

6.2 RECOMMENDATIONS

The key elements of Africa's regional development policy for technical regulations, standards, metrology and accreditation should focus on the following:

- The development of an African technical regulatory reform policy.
- The establishment of an African institutional arrangement for an African technical regulatory framework.
- The co-ordination of technical regulatory activities and the development of technical infrastructure institutional capacity in the sub-regions of Africa.
- The strengthening of national institutional capacity for standards, conformity assessment and metrology.
- The provision of technical assistance to specific African companies.

Five policy recommendations are made that foresee a situation where an importer can accept proof of compliance with technical requirements in terms of product or service quality either for technical regulations or in the voluntary domain, even if the products were tested, certified or inspected in an African exporting country. In order for conformity assessment procedure to be recognised as equivalent to that prevailing in the importing country, the African technical regulatory frameworks have to be harmonised and the technical competence of the conformity assessment institutions has to be demonstrated.

An African approach to co-ordination should emphasise regional integration of common functions so that these are supplied more cost-effectively to all member states from a regional or sub-regional resource. The approach should aim at

establishing cost-effective institutional capacity at regional and sub-regional level. It would also make sense to use the lessons learnt in the sub-regions in setting up an effective African technical infrastructure. The above mentioned learning could be used in the launching of an African initiative aimed at planning the implementation of these best practice models in the rest of the continent. The advantage of such a coordinated approach may be that the resulting technical infrastructure is mutually compatible and does not have to be harmonised in any major way when the African Union evolves economically into an African free-trade area.

The recommended policy interventions should be based on a thorough needs assessment for all parts of the African economy with the understanding that there is no ready-made model for technical regulatory reform. African policy-makers should provide ongoing political and financial commitment to the policy decisions. After consideration of the assessed needs, policy implementation should be based on planning and appropriate sequencing of interventions in order to ensure that the technical infrastructure in Africa is coordinated and developed in a sustainable manner. This includes a clear articulation of the resources and finance that will be required to sustain the necessary technical regulatory infrastructure taking into consideration regional and sub-regional service delivery options, which may achieve better economies of scale.

6.2.1 Recommendation 1: Develop an African technical regulatory reform policy

6.2.1 (a) Introductory paragraph

Two regions, namely the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development, have policies in place that focus on technical regulatory reform. These policies set out the principles that govern the reforms and provide information to stakeholders on

what may be expected from the reforms. The main aims of the technical regulatory reform policies are to eliminate unnecessary barriers to trade between countries in the regions and thus to create an environment that may facilitate trade liberalisation and be attractive to investors. Benefits of the reforms may be lower cost to the sectors that are regulated, lower prices to consumers, product innovation and technology development as well as effective use of government resources.

There is also the potential for gains in terms of job creation, capital productivity and economic-wide increases in the gross domestic product and real wages in countries. It is however important to keep in mind that technical regulatory reform is complex and multifaceted. In addition countries in Africa have different technical regulatory responses because of different interest and values that arise from specific economic, social and political environments.

Particular core trends in the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development regulatory reform efforts appear to be useful for an African approach to technical regulatory reform. The before mentioned common trends include the building onto the World Trade Organisation Technical Barriers to Trade Agreement in an effort to find innovative solutions for technical regulatory harmonisation, mutual recognition and co-ordination. Other trends include the use of performance-based regulations and international standards, the identification of conformity assessment requirements that have to be complied with, transparency, predictability and provision for participation, consultation, publications and comment periods. The use of impact and risk assessment analysis to inform policy-makers and regulators in order for them to choose appropriate technical regulatory responses is another common trend.

6.2.1 (b) *Recommendation*

The current African technical regulatory system is in need of an extensive reform process because the current African approach is fragmented, inefficient and ineffective. A well-structured technical regulatory framework is of crucial importance to the development and competitiveness of the regional economy. The following principles may be used to develop a flexible African regional technical regulatory reform policy approach:

Transparency is one of the most important building blocks of a good technical regulatory system in Africa. A transparent system should make provision for effective access to existing technical regulations for all market participants and stakeholders, domestic and foreign. The system should also provide systematic information of technical regulations in the making. Predictability and clarity of the technical regulatory-making process also provide for participation by stakeholders at appropriate times in the process.

African countries should rely on technical regulatory impact analysis to avoid unnecessary trade-restrictiveness. Systematic assessment of the impacts of proposed technical regulations includes cost/benefit analyses, investigation of possible feasible alternatives to the proposed technical regulation and an analysis of the impact of such a regulation on trade and investment and small businesses.

The approach to use internationally harmonised standards and technical regulations as a basis for domestic regulations wherever they are feasible and appropriate should be promoted. In this regard, supporting active participation in the development of international standards and ongoing national commitment of resources or participation in international standards setting will be a good indicator of the will to use international harmonised standards as a basis for domestic regulations.

In terms of choosing between prescriptive technical regulations or performance-based technical regulations, performance-based technical regulations should be preferred in the African approach to regulatory reform because they represent a more flexible approach and allow those that are regulated to devise the most efficient and effective method of compliance. Performance-based technical regulations provide flexibility while ensuring that the objective is achieved.

In addition to the above, the use of internationally harmonised requirements also covers the streamlining of the conformity assessment processes in the region with a view to facilitate mutual recognition, mutual acceptance and acceptance of supplier's declarations of conformity. Although, best-practice patterns are difficult to identify because a variety of approaches to streamline conformity assessment processes is in use, the development and use of sub-regional accreditation bodies in Africa as a vehicle to confirm competence and to recognise conformity assessment results appear to offer a sustainable solution.

Finally, the following recommendations are made to establish a technical regulatory framework for Africa with a view to provide for an effective and efficient technical regulatory system that would expedite investment in and economic recovery of the continent:

- A technical regulatory reform strategy should be developed for the reform of primary and secondary technical regulatory legislation by an African Technical Regulatory Framework Committee.
- The African technical regulatory framework should be built on the following principles: transparency, proportionality, necessity, targeted principle, non-discriminatory principle and the use of appropriate internationally harmonised measures principles.
- The African technical regulatory framework should consider inclusion of the abovementioned core trends in terms of transparency, avoiding

unnecessary trade-restrictiveness, use of international harmonised measures including accreditation to develop flexible regional approaches.

- The African technical regulatory framework should provide for the development of a technical regulatory checklist, guidelines for technical regulatory impact and risk assessment and code of practices for consultation, the technical regulatory process, enforcement and for the publication and notification of technical regulations.
- The strategy should explore the institutional capacity that will be required to roll out the strategy.

6.2.2. Recommendation 2: Establish institutional arrangements for an African technical regulatory framework

6.2.2 (a) Introductory paragraph

The Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development regions recognised the need to establish an institutional arrangement to assure effective implementation of the technical regulatory reform policies. An institutional arrangement is necessary for co-ordination of different aspects of the reform policies and it creates a framework for accountability.

The Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development officials also recognised the benefits from technical regulatory co-operation between governments. Through co-operation the abovementioned regions developed guides to steer implementation of a common approach to technical regulations and standards.

6.2.2 (b) Recommendation

The need for co-ordination of the technical regulatory reform and the development of technical infrastructure capacity at African level is recognised. Currently the Inter-Africa Metrology System and the African Organisation for Standardisation are operational with various levels of progress. Co-ordination is, however, becoming increasingly important for accreditation and technical regulations. Additionally, co-ordination is required between the four elements of the technical infrastructure in order for the technical infrastructure to be able to respond to the needs of Africa's industrialisation efforts.

The policy objectives of the co-ordination are the promotion of co-operation and collaboration between the sub-regions of Africa in the area of technical regulations and technical infrastructure, the provision of a suitable environment for the production of quality goods and services, thus contributing to the industrial development in Africa and the progressive elimination of technical barriers to trade amongst the African sub-regions.

The existing and new structures that need to be coordinated are:

- The Inter-Africa Metrology System (established)
The Inter-Africa Metrology System, which has been established to promote international, particularly inter-African and regional co-operation in metrology to facilitate the implementation of a global measurement system in the whole of Africa, in which all users can have confidence and work towards the establishment of a robust regional measuring system.

- The African Organisation for Standardisation (established)
The African Organisation for Standardisation has been established to facilitate intra-African and global trade by promoting quality through co-

ordination and harmonisation of standards and conformity assessment in Africa.

- Inter-African Co-operation for Accreditation (to be established)
The Inter-African Co-operation for Accreditation will facilitate coordination and co-operation between the sub-regional accreditation systems and establishment of the mutual recognition of the competence between accreditation bodies that operate in Africa.

- The African Technical Regulation Co-operation Committee (to be established)
The African Technical Regulation Co-operation Committee will promote and facilitate implementation of the common approach to technical regulation for health, safety and the environment.

The work at African level should build on and support work on technical infrastructure development at sub-regional level with a view to ensure alignment and co-operation in areas of common interest on standards, accreditation, metrology and technical regulations and to minimise duplication of efforts.

The approach to co-ordination should emphasise regional integration of common functions so that these are supplied cost-effectively to all member states from a sub-regional or regional resource. The approach should aim at establishing sustainable institutional capacity at sub-regional or regional level. The co-ordination approach should also advance the implementation of sub-regional best practice models in the rest of the continent. The advantage of such a co-ordinated approach would be that the resulting technical infrastructure would be mutually compatible and would not have to be harmonised in any major way when the African Union evolves economically into an African free-trade area.

6.2.3 Recommendation 3: Establish and strengthen co-ordination of technical regulatory activities in the sub-region

6.2.3 (a) Introductory paragraph

The need for coordination of national and sub-regional technical regulatory reform and the development of technical infrastructure institutional capacity in the area of technical regulations, metrology, accreditation and conformity assessment is increasingly important to support economic growth, industrial development and regional integration. There are evidence that African exports to developed country markets are often refused for reasons related to product characteristics, safety and health requirements.

One of the challenges facing African enterprises includes that they find it difficult to international requirements of developed countries. African participation in the formulation of international standards and technical regulations is ineffective because of low political support and inadequate participation. African enterprises are therefore standards-takers and are always reacting to changing standards and technical regulations formulated by developed countries that do not accommodate unique African constraints. Technical infrastructure institutions such as the standards and metrology bodies often lack human, financial and infrastructure to assist enterprises. Local testing bodies, certification facilities and inspection bodies are not internationally recognised.

In terms of technical regulations the challenge facing African entrepreneurs involves the absence of effective technical regulatory authorities that is putting pressure on local producers to substitute quality for price. There is a lack of understanding of technical regulations in policy-making. There is a proliferation of technical regulatory responsibilities and roles across national regulatory institutions. Often local technical regulations are out of date and enforcement mechanisms are ineffective.

Some sub-regions in Africa already have sub-regional technical regulatory reform co-ordination structures in place others, however, have informal structures. The sub-regional technical regulatory reform activities in Africa include the following: the Southern African Development Community, the Common Market for East and Southern Africa Community, the East African Community, the West African Community and the Economic Community of West African States and the Maghreb Community. The reform activities in Africa are still in the early stage and therefore low in terms of development.

6.2.3 (b) Recommendation

The aim of this policy recommendation is to improve co-ordination of Africa's sub-regional technical regulatory reform efforts. The sub-regional co-ordination will be the building blocks for African co-operation. Specific actions should therefore be required to develop co-operation frameworks for those sub-regions that has not formalised a sub-regional arrangement for co-operation in the area of standards, metrology, accreditation and technical regulations.

The sub-regional co-operation activities may focus on the exchange of professional and technical information and transfer of expertise in the sub-region. Co-operation may also include co-operation amongst the sub-regional countries to implement sub-regional programs related to technical regulation, metrology, standards and accreditation and to identify technical problems which might form the subject of joint projects. Other activities may include coordination, endorsement and harmonisation of sub-regional training, establishment of communication channels and dissemination of information on sub-regional technical infrastructure activities. The co-operation should aim to effectively utilise technical and financial resources and services of the countries in the sub-region and of the deployment of these towards identified regional development needs.

In terms of technical regulations the focus may be on the development and roll out of guidelines and other tools for the national implementation of a sub-regional technical regulatory framework. The co-operation efforts on technical regulations could aim to identify common technical regulations to be implemented in the sub-region and the development of mechanisms to facilitate the incorporation of international standards in technical regulations.

In terms of accreditation the co-operation efforts may focus on the creation of an internationally recognised sub-regional accreditation system that could be used to establish a pool of internationally acceptable accredited inspection bodies, laboratories and certification bodies in the sub-region and provide countries in the sub-region with accreditation as a tool for the removal of technical barriers to trade in both the voluntary and regulatory areas. The accreditation co-operation could facilitate the implementation of a sub-regional system that complies with international practice while taking into account the specific circumstances, opportunities and needs of the sub-region. Co-operation includes coordinating inputs to and liaising with regional organisations such as the Inter-African Co-operation for Accreditation and international organisations concerned with accreditation, such as the International Laboratory Accreditation Co-operation (ILAC) and the International Accreditation Forum (IAF). The aim is to create an environment for the conclusion of mutual recognition agreements between qualifying accreditation institutions within the framework of and consistent with global mutual recognition agreements.

The co-operation in metrology may focus on coordination of metrology activities and services in the sub-region, in order to provide sub-regional calibration and testing services with traceability to the Systeme International (SI) units of measurement. The coordination could promote closer collaboration countries to improve existing national measurement standards and facilities and co-operate with regard to major investments in national metrology facilities in the sub-region.

Co-operation includes the responsibility for liaison with the Inter-Africa Metrology System, the International Bureau of Weights and Measures and other regional and international organisations concerned with measurement traceability. Other activities may include the organisation of both intra- and inter-regional laboratory test inter-comparisons and the creation of an environment for the conclusion of mutual recognition agreements.

The co-operation in standardisation may promote the coordination of standardisation activities and services in the sub-region with the aim of achieving harmonisation of standardisation. The co-operation could promote regional co-operation in the development of harmonised standards and technical regulations, facilitate the exchange of information on existing standards, draft standards and technical regulations, facilitate the adoption of sub-regional standards. The co-operation includes the coordination of inputs to and liaison with the African Organisation for Standardisation and other regional and international standardisation organisations. Other activities may include providing technical assistance and training in standards development and providing standards information services.

The current lack of technical infrastructure in Africa undermines the region's efforts to upgrade its production and trade capacities, increases the cost of doing business and impacts negatively on regional integration. The inability of African countries to meet technical standards set by trading partners is a barrier to taking advantage of the benefits of market access for processed and manufactured goods. In this regard, the policy recommendation relates to the establishment of one accreditation body per sub-region to ensure the competency of testing, certification, calibration and inspection services provided to industry; the development and training of a pool of accreditation assessors which will provide assessor capacity to the sub-regional accreditation body; and obtaining international recognition for the sub-regional accreditation bodies from the

International Laboratory Accreditation Co-operation and the International Accreditation Forum.

6.2.4 Recommendation 4: Strengthening national institutional capacity for standards, conformity assessment and metrology

6.2.4 (a) Introductory paragraph

African countries face challenges in terms of improving domestic capacity to assist domestic manufacturers to meet the quality standards, safety and environmental technical regulations, which are required in global markets. Institutional reform and investment in human capital as well as infrastructure improvements in testing laboratories and certification facilities are becoming increasingly important.

Governments of African countries thus need to accept the responsibility for the establishment of national metrology institutes because it provides the foundation for standardisation, accreditation and conformity assessment. It is essential because it facilitates the acceptance of measurements related to products that manufactures may want to export, law enforcement related to measurements and it supports scientific results. The level of metrology available to the country needs to be informed by the needs of the industry and the government. This area requires substantial investment and, thus, careful planning and a sound knowledge of what is actually needed are important.

Standards form an important element of economic policy and African countries need to accept the responsibility that national standards organisation needs to be appropriately guided based on national needs. Governments are required to provide the bulk of the funding for these public institutions.

National or sub-regional accreditation bodies, which provide accreditation services for laboratories, certification bodies and inspection bodies need to be

recognised as competent internationally and nationally by the government. Governments in Africa need fund the international recognition activities because of the importance of providing assurance to trading partners that suppliers of tests and certificates are competent and to overcome technical barriers to trade.

6.2.4 (b) Recommendation

Given the complexity of organisations, linkages and national, regional and international relationships as well as limited resources policy-makers in African will have to make important strategic policy choices.

This policy recommendation thus focuses on national support for technical regulatory reform initiative and the establishment of national technical infrastructure capacity that may contribute to the maintenance and enhanced competitiveness of the local manufactures. Investments should be made in those institutions that are vital for economic development. The organisational structures should be suitable to provide the necessary outputs required at a national level. Funding mechanisms should be strengthen to enable sustainability and should include mobilising donor funding to supplement national funding.

6.2.5 Recommendation 5: Provide specific companies with technical assistance

6.2.5 (a) Introductory paragraph

One of the implications of global trade is that many of today's products are built with components sourced from around the world. These components must fit together, perform as expected and comply with international standards and technical regulations. High compliance costs to international standards and technical regulations impacts negatively on the international competitiveness of African entrepreneurs.

Africa entrepreneurs often need to incur high quality assurance compliance costs because they have to source these services from other regions. The conformity assessment services may include testing by competent laboratories, product and quality system certification from certification organisations acceptable to the regulator or homologation (a specific conformity assurance system used for example in the automotive industry) through governmental mechanisms or regulators. It is important that African exporters make sure that the requirements of the import country are met in order to prevent costly mistakes and wasting of time.

6.2.5 (b) Recommendation

Success in most of the priority sectors at the global export level lies in the access that these sectors have to world-class technical infrastructure. To achieve success in these sectors in Africa, a prerequisite before a company can even begin to contemplate export is quality assurance. In view thereof, a lot of effort is needed in the following areas: certification, inspection, control and testing of products.

This policy recommendation thus focuses on support for specific African companies that need financial and technical assistance to meet standards and technical regulations for export. Specific actions include identifying a number of companies per priority sector, which have the potential to export. The activities include analysing the quality needs of each company's through a diagnostic process and developing as well as financing of a restructuring plan. Assistance may include providing technical support, as well as coaching for the implementation of the upgrading activities in the beneficiary companies.

To conclude, the above-mentioned policy recommendations are made with a view to reform the African technical infrastructure and to secure international

recognition, which may support Africa's efforts to participate in the global economy. The aim is to provide companies with technical assistance in implementing projects to meet international standards and technical regulatory requirements to improve their competitiveness and to better respond to the new challenges of liberalised market. A further aim is to co-ordinate and aligns the technical regulatory reform activities in the region (standards, metrology institutions, accreditation and conformity assessment services) in order to provide a suitable environment for the production of quality goods and services, thus contributing to the industrial development in Africa and the progressive elimination of technical barriers to trade among the African subregions. The co-ordination in Africa will target strengthening of technical regulatory reform and the development of activities in the subregion (standards, metrology institutions, accreditation and conformity assessment services) in order to provide a suitable sub-regional environment for the production of quality goods and services, thus contributing to the industrial development in Africa and the progressive elimination of technical barriers to trade amongst the African subregions. Policy recommendations are made for technical assistance (in the form of institutional support and equipment) in establishing metrology, standardisation and accreditation capacity as well as conformity assessment services for testing, certification, calibration and inspection that will meet the needs of the region. Lastly, the recommendations also aim to enhance the competitiveness of the region's priority industrial sectors and support the diversification of the regional economy and local processing of raw material by identifying and developing appropriate sector-specific standards, traceability and accreditation.

Given the complexity of organisations, linkages and national, regional and international relationships, policy-makers in Africa will have to make important strategic policy choices. Because of limited resources, the following issues need to be taken into account with a view to implementing the technical regulatory reform initiative and establishing a technical infrastructure that contributes to the maintenance and enhanced competitiveness of the continent: How are these

various components and organisations arranged internationally? Is it vital to have all of these organisations in a developing country? Are some organisations more important than others? Which ones should be established first? Which ones should be established at regional level? Which type of organisational structure is best suitable to provide the various outputs? Should the organisations be in the public domain? Or could private organisations be used? Who should fund such organisations, the state or industry or both? How can the region mobilise donor funding to supplement regional funding?

6.3 SUMMARY

A holistic African policy strategy on technical regulatory reform coupled to significant target investment in the necessary technical infrastructure will be required if African countries aim to create an environment that is conducive to supporting exports from Africa and productive capacity development in Africa. In addition to the need for a holistic policy strategy, it is recognised that state institutional reforms have policy implications. Political support will therefore be necessary because most of the African countries have to start from a very low level of formal institutional development and they are facing a huge scope of different reform requirements. It can be concluded that the regional technical infrastructure reform initiative is unlikely to be successful without political support.

It is thus recognised that an African policy initiative places a responsibility on all African countries to reform their approach to technical regulations and technical infrastructure capacity-building. Hence, a well-structured regional technical framework for co-operation is of crucial importance to the implementation of the African policy initiatives because it can benefit national and regional economies in terms of effective participation in international trade through improved regional competitiveness.

The African region has no alternative but to reform and implement a functioning regional technical regulatory framework and to develop the institutional capacity in the technical standards, metrology and accreditation domain. Economies of countries may benefit as market forces will start recognising the competency of national and regional technical infrastructure and will increasingly accept African products.

African countries face critical challenges in terms of improving domestic capacity to meet the quality standards, safety, health and environmental technical regulations that are required in global markets. Technical infrastructure institutional reform and investment in human capital as well as improvements in testing laboratories and certification facilities are necessary.

Investment in technical infrastructure capacity is the responsibility of both the private and the public sector. The three basic building blocks that governments are responsible for are standardisation, accreditation and measurement metrology infrastructure. Investment in conformity assessment services e.g. laboratories, certification and verification bodies and inspection services may be shared between the private and public sector.

In the short term, enterprises in African countries will continue to be standards-takers that are forced to accept and continuously try to meet international standards. These enterprises will thus depend on their national technical infrastructure institutions to facilitate fast access to relevant standards information. In the long term, it would, however, be important for African countries to influence relevant international standardisation negotiations to ensure that the standards reflect unique African needs and constraints. This will require scientific and technical input from African countries supported by a clear and collective articulation of their position.

Current trends show that technical regulations are increasing. Although the initial focus of developed countries' technical regulations was on health and safety of

the public, developed countries' consumer influence is shifting the focus to environmental protection and labour standards. Compliance with international standards and technical regulations is therefore becoming increasingly complex. Sophisticated best-practice requirements necessitate investment in highly skilled human resources, new product design, new or upgraded equipment, management systems, labelling, traceability and record systems.

In the sub-regional context, the technical infrastructure for standards-setting, quality assurance, accreditation and metrology is a crucial element of sub-regional competitiveness and critical in expanding market access and promoting regional integration in sub-regions.

At national level, the appropriate technical infrastructure has an extremely valuable role to play in underpinning the ability of the country to improve its productive capacity. Many of Africa's enterprises had to rise to the challenge of complying with international standards and technical regulations and competing on a global scale and are now successfully exporting goods around the world.

In summary, for African enterprises to participate fully in global trade, they must develop capacity to make certain that they are able to comply with international standards and technical regulations. Careful investment by government into technical infrastructure based on needs analysis and economic appraisal is necessary. Both the efforts of the private and the public sector in this field can lead to deeper integration into Africa and of Africa into the rest of world.

6.4 CONCLUSION

The preceding chapters dealt with the objective of this study. This conclusion therefore recapitulates the objective and how it has been met.

The objective of the study was to contribute to scientific knowledge and to provide an input into public policies on technical regulatory reform in Africa

through a process of discussion of technical regulatory reform practices in the World Trade Organisation, the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development and technical infrastructure institutional capacity- building initiatives, which are taking place all over the world and to make policy recommendations for an African approach to technical regulatory reform and technical infrastructure institutional capacity- building.

Chapter 1 of the thesis outlined the relevant historical, economic or social factors that impact on African public policy initiatives including reform and state institutional capacity-building initiatives. The chapter highlighted the fact that many of the reforms and changes failed and this is impacting negatively, on among others, the state institutional capacity, which is crucial for development. The chapter also confirmed the responsibility of government to invest in specific state institutions and to manage them effectively.

Chapter 2 of the thesis outlined the need for the study, the nature of the study, the problem statement, the research methodology and the research limitations. This was done against a background of the importance of the research problem, the various types of research approaches available to researchers as well as the many research designs that can be utilised by researchers to choose the most appropriate research methodology to solve research problems.

The third chapter of the thesis focused on the theoretical aspects of Public Administration and reviewed relevant literature on Public Administration, the generic administrative functions of public administration and one specific function of public administration namely public policy-making. The chapter also assessed the origins and historical development of public policy studies. Different policy types, levels and models for policy-making were investigated, followed by an overview of the various approaches to policy analysis, reasons for public policy analysis and advantages and limitations of public policy analysis.

The chapter revealed the differences in policy processes between developed and developing countries and provided an overview of public policy in Africa. The chapter concluded that although African public policy initiatives were still very fundamental, the policy space needs to be created for new public policy initiatives, which may support development and allow for a pragmatic approach to policy reform creating a balance between macroeconomic reform policies and economic policies.

In terms of institutional development, the chapter included a literature review of characteristics of state institutions, models of institutional theory and approaches to institutional development. The chapter also considered institutional development in developing countries and concluded with an overview of institutional development in Africa. In terms of institutional development in Africa, the chapter revealed that Africa has the opportunity to respond in a creative manner to establish regional institutions, which meet regional needs and demands for public services.

Chapter 4 reviewed the international response to technical regulatory reform and compared the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development regional cases in order to identify policy trends in technical regulatory reforms. The chapter also identified the state institutional capacity requirements that are needed to implement technical regulatory reform policies. The review covered the World Trade Organisation Technical Barrier to Trade Agreement and identified the principles that need to be applied when technical regulatory reform is undertaken. The review also considered the relationship between standards and technical regulations and how these standards and technical regulations can be influenced.

The review also compared the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development approaches to

technical regulations and standards. The chapter also reviewed the Southern African Development Community's approach to technical regulations and standards.

The chapter concluded that regions such as the Asian Pacific Economic Community and the Organisation for Economic Co-operation and Development started in the middle 1990s with regulatory reforms because they were of the view that unnecessary regulatory requirements impact negatively on trade liberalisation and regional integration gains and that technical regulatory reform can generate trade facilitation gains in terms of trade. The Southern African Development Community laid the foundation for regulatory reform in 2008 when these countries negotiated the Southern African Development Community's Technical Barriers to Trade Annex, which recognised the need for moving towards a common approach to technical regulations and sharing intuitional capacity in the area of technical regulations and standards.

The chapter also investigated the institutional arrangements at international level and reflected more specifically on the arrangement and status of technical institutional capacity in southern Africa. The chapter revealed that regional capacity in standards, accreditation and metrology impacts directly on the competitiveness of its private sector because it can raise or lower economic efficiency and facilitate or constrain exports.

The fifth chapter has showed that many regions started with technical regulatory reform and that the point of departure for technical regulatory reform is a technical regulatory reform policy for a region. Such policies usually set out the principles such as non-discrimination, transparent and open-decision-making processes, the avoidance of unnecessary trade-restrictiveness, the use of internationally harmonised measures and the streamlining of conformity assessment processes, which govern the reform.

The chapter highlighted the challenge for regions to develop a technical regulatory system, which accommodates the region's specific challenges and taking account of the legislative and political system of the countries in the region.

In terms of technical infrastructure, the chapter illustrated the link between technical regulatory reform policy and institutional capacity-building policy and the benefits of establishing reliable technical infrastructure to enhance export potential for enterprises and increase protection for international and local consumers because products are safe. The chapter advocates a regional approach of pooling human and financial resources in order to overcome problems of costs, skills and knowledge.

Chapter 6 concluded with a number of policy recommendations such as the development of an African policy framework, which includes policies on a common approach to technical regulatory reform based on best practice that is applicable and valuable for Africa, the establishment of regional and sub-regional co-operation and coordination on technical regulations, standards, metrology and accreditation, the development of complementary regional and sub-regional capacity to meet the needs of the region, the development of national technical infrastructure capacity and lastly, technical support to enterprises to manufacture and sell quality goods and services, which they can export competitively to other African countries and to countries in other regions.

The chapter highlighted the importance of a needs assessment for all parts of the African economy because there is no ready-made model for technical regulatory reform, ongoing political and financial commitment for the reform as well as careful planning and appropriate sequencing of interventions in order to ensure that the technical infrastructure in Africa is coordinated and developed in a sustainable manner.

In view of the above, it is concluded that the thesis addressed the problem statement regarding, which technical regulatory policy reforms and what institutional capacity Africa needed to repositioned their economies for sustainable grow and to increase Africa's share of global trade. The thesis made a clear case for an African public policy framework for regulatory reform, which will provide African solutions for current unsupportive regulatory frameworks. The thesis also made a clear case for the establishment of appropriate technical infrastructure capacity in Africa that may impact positively on economic growth, regional integration and access to global markets.

REFERENCES

AC. (Commission for Africa) 2005. *Our Common Interest*. Report of the Commission for Africa. Available online: <http://nepad.org> 12/07/2006 [Accessed: 13/07/2006]

AC. (Commission for Africa) 2008. *Strategy for the implementation of the action plan for accelerated development of Africa*. Unpublished. Pretoria: Department of Trade and Industry.

Anderson, J.E. 1994. *Public policy-making: an introduction*. 2nd ed. Boston, MA: Houghton Mifflin.

Anderson, J. E. 1997 *Public Policy Making* 3rd ed. Boston, MA: Houghton Mifflin.

APEC. (Asia Pacific Economic Community) 1997. *The impact of trade liberalisation in APEC*. Available online: www.apec.org [Accessed: 11/11/2006].

APEC. (Asia Pacific Economic Community) 2000. *Information notes on good regulatory practice for technical regulations*. Available online: www.apec.org [Accessed: 9/9/2000].

APEC. (Asia Pacific Economic Community) 2006. *Latest developments*. Available online: http://www.apec.org/apec/apec_groups/committees/committee_on_trade/sub-committee_on_standards.html#Latest [Accessed: 9/9/2006].

APEC. (Asia Pacific Economic Community) 2009. *About APEC*. Available online: http://www.apec.org/apec/about_apec/mission_statement.html [Accessed: 17/8/2009]

APEC-OECD. (Asia Pacific Economic Community and Organisation for Economic Co-operation and Development) 2005. Integrated checklist on regulatory reform. A policy instrument for regulatory quality, competition policy and market openness. Paris: OECD.

Aron, J. 2000. Growth and institutions: a review of the evidence. *The World Bank Observer*. (15)(1).

Bailey, T. 1948. *The Man in the street: the impact of American public opinion on foreign policy*. New York: Macmillan.

Beyer, W.C. 1959. The civil service of the ancient world. *Public Administration Review*, 19 (Spring 1959).

BIMP. (International Bureau of Weights and Measures) 2006. *CIPM Mutual Recognition Arrangement*. Available online: <http://www.bipm.org/en/cipm-mra/> [Accessed: 14/07/2006]

Birkland, T.A. 2005. *An introduction to the policy process: theories, concepts, and models of public policy-making*. 2nd ed. New York: M.E. Sharpe Armonk.

Botes, P.S. Brynard, P.A. Fourie, D.J. and Roux, N.L. 1992. *Public administration and management. a guide to central, regional and municipal administration and management*. Pretoria: Kagiso Tertiary.

Botes, P.S. Brynard, P.A. Fourie, D.J. and Roux, N.L. 1996. *Public administration and management. a guide to central, regional and municipal administration and management*. 2nd ed. Pretoria: Kagiso Tertiary.

Box, R.C. 2005. *Critical Social Theory in Public Administration*. New York: ME Sharpe.

Bresnick, D. 1989. *Public Organisations and Policy: An experimental approach to public policy and its execution*. Illinois: Scott Foresman.

Brusson, N. and Olsen, J.P. 1993. *The reforming organisations*. Bergen: Fagbokforlaget.

Busse, M. Borrman, A. and Neuhaus, S. 2006. The institutional challenge of EPAs. *Trade Negotiations Insights*, 5 (3). Available online: www.ictsd.org/tni [Accessed: 20/05/2006].

Calderisi, R. 2006. *The Trouble with Africa. Why foreign aid isn't working*. London: Yale University.

Cateora, P.R. and Graham, J.L. 2002. *International Marketing*. 11th ed. New York: McGraw Hill.

Cavanagh, J AND Mander, J. 2004. (eds). *Alternatives to economic globalisation. A better world is possible. A report of the international forum on globalisation*. 2nd ed. San Francisco: Berrett-Koehler.

Cloete, F. 2006. Public policy in more and lesser developed states. In: Cloete, F. Wissink, H. and De Coning, C. 2006. (eds). *Improving public policy. From theory to practice*. 2nd ed. Pretoria: Van Schaik.

Cloete, F. Wissink, H. and De Coning, C. 2006 (eds). *Improving public policy. From theory to practice*. 2nd ed. Pretoria: Van Schaik.

Cloete, J.J.N. 1993. *Publieke administrasie en bestuur*. 8th ed. Pretoria: JL van Schaik.

Chandarasorn, V. 1997. Public sector reform: a hypothetical model of successful reform adoption and implementation. *Asian Review of Public Administration*, 10 (1-2): 483-493.

De Coning, C. 2006: The nature and role of public policy in improving public policy. In: Cloete, F. Wissink, H. and De Coning, C. 2006.(eds). *Improving public policy. From theory to practice*. 2nd ed. Pretoria: Van Schaik.

De Coning, C. and Cloete, F. 2006. Theories and models for analysing public policy. In: Cloete, F. Wissink, H. and De Coning, C. 2006.(eds). *Improving public policy. From theory to practice*. 2nd ed. Pretoria: Van Schaik.

Denzin, N.K. and Linclon, Y.S. 1994. (eds). *Handbook of qualitative research*. California: Sage Publications.

DFID. (Department of International Development) 2003. *Promoting institutional and organisational development. A source book of tools and techniques*. Available online: www.dfid.gov.uk [Accessed: 2/10/2006].

DFID. (Department of International Development) 2003. *Promoting institutional and organisational development. A source book of tools and techniques*. Available online: www.dfid.gov.uk [Accessed: 2/10/2006].

Dror, Y. 1967. *Policy analysis: a new professional role in government service*. *Public Administration Review*, 27 (3): 197-203..

DTI. (Department of Trade and Industry) 2004a. *Modernising the South African technical infrastructure*. Unpublished Pretoria: Department of Trade and Industry.

DTI. (Department of Trade and Industry) 2004b. *Technical regulatory framework study*. Unpublished Pretoria: Department of Trade and Industry.

DTI. (Department of Trade and Industry) 2006a. *Strategy towards an efficient national technical regulatory framework for South Africa*. Available online: <http://www.thedti.gov.za/ntrf/ntrf.htm> [Accessed 1/11/2006].

DTI. (Department of Trade and Industry) 2006b. National industrial policy framework. Unpublished. Pretoria: Department of Trade and Industry.

Dunn, W.N. 1981. *Public policy analysis: an introduction*. New Jersey: Englewood Cliffs, Prentice-Hall.

Dunn, W.N. 1994. *Public policy analysis: an introduction*. New Jersey: Englewood Cliffs, Prentice-Hall.

Dunn, W.N. 2004. *Public policy analysis: an introduction*. 2nd ed. New Jersey: Prentice-Hall.

Dye, T.R. 1978. *Understanding public policy*. New Jersey: Englewood Cliffs, Prentice-Hall.

Dye, T.R. 1984. *Understanding public policy*. 2nd ed. New Jersey: Englewood Cliffs Prentice-Hall.

Dye, T.R. 1987. *Understanding public policy*. 2nd ed. New Jersey: Englewood Cliffs, Prentice-Hall.

EC. (European Commission) 1990. Council Resolution of 21 December 1989 on a global approach to conformity assessment (90/C10/01). *Official Journal of the European Communities*, No C 10 of 16 January 1990. Luxembourg: European Union Office for Publications.

EC. (European Commission) 1999. Standards and Regulations in International Trade. Geneva, Switzerland.

EC. (European Commission) 2000. Guide to the Implementation of Directives Based on the New Approach and the Global Approach.

Available online:

<http://europa.eu.int/comm/enterprise/newapproach/newapproach.htm>.

[Accessed:10/01/ 2008].

ECA. (Economic Commission for Africa) 2007. Economic Report on Africa 2007. Addis Ababa: Economic Commission for Africa.

ECA. (Economic Commission for Africa) 2008. African and Monterrey consensus: tracking performance and progress. Addis Ababa: Economic Commission for Africa.

ERMA. (Environmental Risk Management Authority of New Zealand) 2006.. Trans Tasman Mutual Recognition Arrangement. Available online:

www.ermanz.govt.nz/InternationalObligations/TTMRA.htm.

[Accessed:10/01/ 2008].

Etzioni, A. 1967. Mixed Scanning: A Third Approach to Decision Making. Public Administration Review, December 1967. In: Shafritz J.M. Layne. K.S. and Borick. 2005 (eds). *Classics of Public Policy*. Pearson Education.

Fox, W. Schwella, E. and Wissink, H. 1991. *Public Management*. Cape Town: Juta.

Fox, W. and Meyer, I.H. 1995. *Public Administration Dictionary*. Cape Town: Juta

Friedman, T.L. 2005. *The world is flat. The globalized world in the twenty- first century*. London Penguin Books.

Gilbert, N. and Specht, H. 1986. *Dimensions of social welfare policy*. Englewood Cliffs, NJ: Prentice-Hall.

Grobbelaar, N. 2006. The Trading and Investment Environment in Africa. In: Luiz. J. 2006. (ed). *Managing business in Africa. Practical management theory for an emerging market*. Oxford: Oxford University.

Gulick, L.1937. Notes on the Theory of Organisation. In: Shafritz, J.M. Hyde, A.C. and Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed.Wadsworth / Thomson Learning.

Heineman, R.A. Bluhm, W.T. Peterson, S.A Kearny, E.N. 1997. *The World of the Policy Analyst: Rationality, Values, and Politics* New York: Chatham,

Hanekom, S.X. 1987. *Public policy: framework and instrument for action*. Halfway House: Southern Book.

Hanekom, S.X. Rowland, R.W. and Bain, E.G. 1987. *Key aspects of Public Administration*. Halfway House: Southern Book..

Hanekom, S.X. and Thornhill, C. 1986. *The functions of the public administrator*. Durban: Butterworth.

Henry, N. 1992. *Public Administration and Public Affairs*. 2nd ed.Englewood Cliffs, NJ: Prentice-Hall.

Hill, C.W.L. 2002. *International business*. 3rd ed. New York: McGraw-Hill/Irwin.

Horowitz, D.L. 1989. Is there a Third World policy process? *Policy Sciences*, 22:197-212.

IAF. (International Accreditation Forum) 2006. Certified once, accepted everywhere. <http://www.iaf.nu/> [Accessed: 14/072006].

IEC. (International Electrotechnical Commission). 2006. *International Electrotechnical Commission System for Conformity Testing and Certification of Electrical Equipment (IECEE)*. Available online: www.iecee.org. [Accessed: 14/07/2007].

IEC. (International Electrotechnical Commission). 1990. *IEC's different conformity assessment schemes* (IECQ, IECEE, IECEX). Available online: www.iec.ch/conf_assess-e.htm [Accessed: 14/07/2007].

Iida, K and Schonfeld, R. 2000. *International standards and regulations: Improving the link*. ISO Bulletin, July 2000. Geneva: International Standards Organisation.

ILAC. (International Laboratory Accreditation Co-operation) 2006. *How does laboratory accreditation assist international trade and development?* Available online: <http://www.compad.com.au/cms/ilac/sitearticles/45> [Accessed: 14/072006].

IMF. (International Monetary Fund). 2003. *Report on the World Economic Outlook : Growth and Institutions*. Available online: www.imf.org/external/pubs [Accessed: 2/10/2006].

ISO. (International Organisation for Standardisation) 1992. *ISO Development Manual 7 – Participation in international standardisation*. Geneva, International Standards Organisation.

ISO/IEC. (International Organisation for Standardisation and International Electrotechnical Commission) 1996. *ISO/IEC Guide 2:1996. Standardisation and related activities – General vocabulary*. Geneva: International Standards Organisation.

ISO/IEC. (International Organisation for Standardisation and International Electrotechnical Commission) 1998. *ISO/IEC 17020:1998, General criteria for the operation of various types of bodies performing inspection*. Geneva: International Standards Organisation .

ISO. (International Organisation for Standardisation) 2001. *WTO TBT Standards Code Directory*. 6th ed. Geneva: International Standards Organisation .

ISO. (International Standards Organisation) 1999. *Brushing up on conformity assessment – A layman's ten-point guide to understanding the concept and reality*. ISO Bulletin, May 1999. Geneva: International Standards Organisation

ISO(a). (International Standards Organisation) 2000. *Aligning intentions and implementation in conformity assessment*. ISO Bulletin, June 2000. Geneva: International Standards Organisation

ISO(b). (International Standards Organisation) 2000. *Facilitating recognition of conformity assessment activities in the 21st century*. CASCO/DEVCO Workshop. ISO Bulletin, November 2000. Geneva: International Standards Organisation

ISO. (International Standards Organisation) 2005. *ISO in Brief*.

Available online: www.iso.org [Accessed: 14/07/2006].

ISO. (International Standards Organisation) 2006. *Metrology, standardisation and conformity assessment. Building an infrastructure for sustainable development*.

Available online: www.iso.org [Accessed: 12/07/2006].

ISO. (International Standards Organisation) 2008. *National standards bodies in developing countries - fast forward*. Geneva: International Standards Organisation

ITC. (International Trade Centre) 1998. An overview of international conformity assessment systems. Export Quality Bulletin. No. 61, January 1998. Geneva: International Trade Centre. Available online:

www.intracen.org [Accessed: 12/07/2006].

ITC. (International Trade Centre) 2004. Export quality management: an answer book for small and medium-sized exporters in South Africa. Pretoria: Department of Trade and Industry.

ITC. (International Trade Centre) 2005. *Innovations in Export Strategy: A strategic approach to the quality assurance challenge*. Geneva: International Trade Centre.

ITU. (International Telecommunication Union) 2007. *Committed to connecting the world*. Available online:

<http://www.itu.int/net/about/index.aspx> [Accessed: 2/10/2007].

Jooste, A. Kruger, E. AND Kotze, F. 2003. Standards and trade in South Africa. Paving pathways for increased market access and competitiveness. In: Luiz, J.

2006. (ed). *Managing business in Africa. Practical management theory for an emerging market*. Oxford: Oxford University.

Jreisat, J.E. 2002. *Comparative public administration and policy*. Boulder, CO: Westview.

Kammer, R.G. 2000. The role of standards in today's society and in the future. Statement by the director of the National Institute of Standards and Technology before the House Committee on Science on 13/9/2002. Washington, DC.

Katz, D. and Kahn, R.L. 1966. The Social Psychology of Organisations. In: Shafritz, J.M. Hyde, A.C. and Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed. Canada: Wadsworth / Thomson Learning.

Katz, D. and Kahn, RL. 1966. Organisations and the Systems Concept. In: Shafritz, J.M. Hyde, A.C. AND Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed. Canada: Wadsworth / Thomson Learning.

Kiggundu, M.N. 1989. *The importance of organisations for developing countries*. West Hartford: Kumarian Press

Kingdon, J.W. 1995. *agendas, alternatives, and public policies*. 2nd ed. New York: Harper Collins.

Kiragu, K. and Mutahaba, G. 2005. *Public service reform in eastern and southern Africa – issues and challenges*. Tanzania: Mkuki na Nyota.

Kuye, J.O. and Mukamunana, R. 2005. Revisiting the African Peer Review Mechanism: The case for leadership and good governance in Africa. *Journal of Public Administration*, 40 (4.1): 590-604. December 2005.

Kuye, J.O. Thornhill, C. and Fourie, D. 2002. *Critical perspectives on Public Administration: Issues for consideration*. Sandown: Heinemann

Landes, D.S. 1998. *The wealth and poverty of nations: why some are so rich and some so poor*. New York: W.W. Norton.

Lasswell, H.D. 1958. *Politics: who gets what, when, how?* New York: Meridian Books.

Lasswell, H. 1933. *Propaganda: Encyclopaedia of the social sciences*. New York: Macmillan.

Leedy, P.A and Ormrod, J.E. 2005. *Practical research. Planning and design*. 8th ed. New Jersey: Pearson Education Ltd.

Lindblom, C.E. 1959. The Science of Muddling Through. *Public Administration Review*, 1959. In: Shafritz, J.M. Hyde, A.C. AND Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed. Canada: Wadsworth / Thomson Learning.

Lipsky, M.1978. Standing the study of public policy implementation on its head. In: Burnham, W.D and Weinburg, M.W. (eds). *American politics and public policy*. Cambridge: Massachusetts Institute of Technology.

Lötter H. 2005. The process of research. In: Rossouw, D. 2005. (ed). *Intellectual tools skills for human sciences*. 2nd ed. Pretoria: Van Schaik.

Lowi, T.J. 1964. American business, public policy case studies and political theory. *World Politics*, 16 (July 1964): 677-715

Luiz, J. 2006. Challenges and prospects for economic and business development in Africa. In Luiz, J. 2006. (ed). *Managing business in Africa. Practical management theory for an emerging market*. Oxford: Oxford University.

Lynn, L.E. 1980. *Designing public policy: A casebook on the role of policy analysis*. Santa Monica, CA:Goodyear.

Massamba, G. Kariuki, S.M. and Ndegwa, S.N. 2004. Globalisation and Africa's regional and local responses. *Journal of Asian and African studies*. 39 (1-2): 29-45.

Maur, J. 2000. Regionalism and trade facilitation. A primer. *World Bank Policy Research Working Paper*. No 4464.

Available online:<http://go.worldbank.org/GY1CVGR6HO> [Accessed: 2/11/2006].

Mills, G. 2000. *The wired model: South Africa, foreign policy and globalisation*. Cape Town: Tafelberg.

Mouton, J. 1996. *Understanding social research*. Pretoria: Van Schaik.

Mouton, J. and Marias, H.C. 1988. *Metodologie van die geesteswetenskappe: basiese begrippe*. Pretoria: Raad vir Geestelike Navorsing.

Nef, J. 2003. Public administration and public sector reform in Latin America. In: Peters, B.G. and Pierre, J. (eds) *Handbook of public administration*. London: Sage.

Neuman, W.L. 2002. *Social research methods*. 5th ed. Boston: Allyn and Bacon.

NEPAD. (New Partnership for Africa's Development) 2003. *The African Peer Review Mechanism. Objectives, standards, criteria and indicators for the African Peer Review Mechanism.*

Available online: www.nepad.org/2005/files/documents/49.pdf

www.nepad.org/2005/files/documents/110.pdf

[Accessed: 9/11/2006]

NEPAD. (New Partnership for Africa's Development) 2006. *Countries Recount APRM Experiences.*

Available online: http://www.nepad.org/2005/files/tempnews_10.php

[Accessed: 2/11/2006].

North, D.C. 1990. *Institutions, institutional change and economic performance.* New York: Cambridge University Press.

NRCS. (National Regulator for Compulsory Specifications) 2009. *Food-Inspections and health guarantees.*

Available online: www.nrccs.org.za [Accessed: 18/09/2009].

Nzwei, O.I. and Kuye, J.O. 2007. The development state and conceptual interpolations: a comparative policy- targeting for South Africa within a global context. *Journal of Public Administration*, 42 (3):195-210.

O'Brien, P. 2003. Technical regulations in SADC: Towards a realistic approach in a changing world. Prepared by the Service Group TSG for USAID Regional Center for Southern Africa (RCSA). Unpublished. Gaborone: SADC Secretariat.

OECD. (Organisation for Economic Co-operation) 1995. Recommendation of the Council of the OECD on improving the quality of government regulation. Paris: OECD.

OECD. (Organisation for Economic Co-operation) 1997. Report on Regulatory Reform. Paris: OECD.

OECD, 2000. (Organisation for Economic Co-operation and Development) An Assessment of the Costs for International Trade in Meeting Regulatory Requirements. Paris: OECD.

OECD. (Organisation for Economic Co-operation) 2002a. OECD Reviews of Regulatory Reform. Regulatory Reform in the United Kingdom. Paris: OECD.

OECD. (Organisation for Economic Co-operation) 2002b. Improving service delivery through public sector reform: lessons of experience from selected sub-Saharan African countries. Room document 8, DAC Network on Good Governance and Capacity Development. 14-15/02/2002.

OECD. (Organisation for Economic Co-operation) 2003. Integrating market openness into the regulatory process: emerging patterns in OECD countries. Paris: OECD.

OECD. (Organisation for Economic Co-operation) 2005. OECD Guiding principles for regulatory quality and performance. Paris: OECD.

OECD, (Organisation for Economic Co-operation) 2006. *African Economic Outlook 2005/2006*. OECD Development Centre and the African Development Bank. Available online:
www.oecd.org/dev/publications/africanoutlook [Accessed: 13/11/2006].

OIML. (International Organisation of Legal Metrology) 2009. *OIML: Introduction and Structures*
<http://www.oiml.org/about/presentation.html> [Accessed: 13/09/2009].

Olsen, J.P. 2006. Maybe it is time to rediscover bureaucracy. *Journal of Public Administration Research and Theory*. 16(1), 1-24. Available online: ABI/INFORM Global database. (Document ID: 947224311)[Accessed: 10/01/ 2008].

OXFAM INTERNATIONAL. 2002. *Make trade fair. Rigged rules and double standards. Trade, globalization, and the fight against poverty*. Available online: www.maketradefair.com [Accessed: 14/11/2006]

Patton, C.V. and Sawicki, D.S. 1986. *Basic methods of policy and planning*. Englewood, New Jersey: Prentice-Hall.

Pressman, J.L. and Wildavsky, A. 1973. *Implementation*. California: The Regents of the University of California.

Quade, E.S. 1975. *Analysis for public decisions*. New York: Elsevier.

Rainey, HG. 2003. *Understanding and managing public organisations*. San Francisco: Jossey- Bass.

Rielly, W. 1979. *Training administrators for development*. London: Heinemann Educational Books.

Rossouw D. 2005. The analysis of arguments. In: Rossouw, D. 2005 (ed). *Intellectual tools skills for human sciences*. 2nd ed. Pretoria: Van Schaik.

Randinelli, D.A. 1982. The dilemma of development administration. *World Politics*, Volume 34(1).

Rothchild, D AND Curry, R.L. 1978. *Scarcity, choice and public policy in middle Africa*. Berkeley: University of California Press.

Roux, N.L. 2000. Policy Design. In: Cloete, F. and Wissink, H. (eds). *Improving public policy. From theory to practice*. Pretoria: Van Schaik.

Roux, N.L. 2002. Public policy-making and policy analysis in South Africa amidst transformation, change and globalization: views on participants and role players in the policy analytic procedure. *Journal of Public Administration*, 37(4).

Sabatier, P.A. 1986. Top-down and bottom –up approaches to implementation research: a critical analysis and suggested synthesis. *Journal of Public Policy*, 6(1).

SADC. (Southern African Development Community) 2004. Support to SADC member states in standardisation, quality assurance, accreditation and metrology (SQAM) Report. Gaborone: SADC Secretariat.

SADC. (Southern African Development Community) 2004. Inventory of regional non tariff barriers: Synthesis report. November 2004. Unpublished. Gaborone: SADC Secretariat.

SADC. (Southern African Development Community) 2006. Project management for EC project to support SADC member states in standardisation, quality assurance, accreditation and metrology (SQAM). Unpublished. Gaborone: SADC Secretariat.

SADC. (Southern African Development Community) 2008. SADC Technical Barrier to Trade Annex. July 2008. Unpublished. Gaborone: SADC Secretariat.

SADCA. (Southern African Development Community Accreditation Co-operation) 2008. Approaches towards an integrated accreditation framework for addressing technical barriers to trade (TBTs) and market access issues in Africa. 27/10/2008. Unpublished paper. Pretoria: SADCA Secretariat.

SADCMET. (Southern African Development Community Metrology Co-operation) 2003. Establishment of internationally credible national metrology institutes in SADC as the basis for other regional conformity assessment activities. August 2003. Pretoria: SADCMET Secretariat.

SADCMET. (Southern African Development Community Metrology Co-operation) 2006. *Approaches towards an integrated framework for addressing technical barriers to trade and market access issues in Africa: The Inter-Africa Metrology System (Afrimets)*. Available online:

<http://www.sadcmnet.org/Events/AFRIMETS%20proposal.htm>

[Accessed: 17/07/2006].

SADCSTAN. (Southern African Development Community Standards Co-operation) 2003. Establishment of a standards development and standards information infrastructure in SADC member countries that meets national, regional and international demands. August 2003. Pretoria: SADCSTAN Secretariat.

SADCSQAM. (Southern African Development Community Standards, Quality Assurance, Accreditation and Metrology) 2006. *Information on the SADC Programme in standardisation, quality assurance, accreditation and metrology (SQAM)*. Available online:

<http://www.sadc-sqam.org/regionalsqam/sqaminfo.html> [Accessed 17/07/2006].

SAIIA, 2006. *African Peer Review Mechanism: A progress report*. eAfrica, December 2005. Available online: <http://www.saiia.org.za>. [Accessed 9/11/2006].

Shafritz, J.M. Hyde, A.C. and Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed. United States of America: Wadsworth / Thomson Learning.

Shafritz, J.M. Layne, K.S. and Borick, C.P. (2005). *Classics of public policy*. New Jersey: Pearson Education Inc.

Shafritz JM and Russell EW. 2005. *Introducing Public Administration*. 4th ed New Jersey: Pearson Education Inc.

Simon, H A. 1946. The proverbs of administration. In: Shafritz, J.M. Hyde, A.C. and Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed. Wadsworth / Thomson Learning.

Soko, M. 2004. Regionalism and the WTO: opportunities and dangers for Africa. *South African Journal of International Affairs*, 2(39).

South Africa. 2007. Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, No. 19 of 2006. Pretoria: Government Printers.

South Africa. 2007. National Measurement Standards and Measurement Units Act, No 18 of 2006. Pretoria: Government Printers.

South Africa. 2008. Standards Act, No. 8 of 2008. Pretoria: Government Printers.

Stahl, G.O. 1976. *Public personnel administration*. New York: Harper and Row.

Stiglitz, J.E. and Charlton A. 2007. *Fair trade for all: how trade can promote development*. New York: Oxford University Press.

Stokey, E. and Zeckhauser, R. 1978. *A primer for policy analysis*. New York: WW Norton.

Taylor E. 2005. Public Service Reform in Namibia. Initiatives, rationale, scope and impact. In: Kiragu, K. and Mutahaba, G. Editors. *Public service reform in eastern and southern Africa – Issues and challenges*. Tanzania: Mkuki na Nyota.

Taylor, E.S. 2003. *Debt, poverty and compliant Africa: the classics of regression, in debt relief initiatives and poverty alleviation. Lessons from Africa*. Africa Institute of South Africa, South Africa: African Century Publications.

Taylor, F.W. 1912. Scientific management. In: Shafritz J.M. Hyde, A.C. and Parkes, S.J. 2004. (eds). *Classics of Public Administration*. 5th ed. Wadsworth / Thomson Learning.

Tsiakals, J. 2001. ISO 9001 and regulatory compliance in the medical device industry. *Quality Progress*, April 2001.

Umar, K. and Kuye, J.O. 2006. Rationalism and the problematique in policy-making and analysis: the case of public policy targeting in Africa. *Journal of Public Administration*, 41 (4.1).

UNIDO. (United Nations Industrial Development Organisation) 2001. *The NEPAD markets access initiatives*. Available online: http://www.unido.org/file-storage/download/?file_id=11340 [Accessed 16/07/2006].

UNIDO. (United Nations Industrial Development Organisation) 2002. *Enabling developing countries to participate in international trade: strengthening the supply capacity*. Vienna: UNIDO.

UNIDO. (United Nations Industrial Development Organisation) 2003. *African productive capacity initiative. From vision to action*. Available online: <http://www.unido.org/doc/39552> [Accessed 7/07/2006].

UNIDO. (United Nations Industrial Development Organisation) 2005. Industrial development report, capacity-building for catching up. Historical, empirical and policy dimensions. Vienna: UNIDO.

UNIDO. (United Nations Industrial Development Organisation) 2006. Capacity-building to meet international standards and public goods Vienna: UNIDO

UNIDO. (United Nations Industrial Development Organisation) 2007. Assessing the specific needs of African countries in the field of quality infrastructure with a focus on key export sectors. Vienna: UNIDO.

Van Rooyen, E.J. and Peet, M. 2007. The role of developmentally focus institutions and agencies in creating sustainable infrastructure for regional and sub regional trade facilitation. *Journal of Public Administration*, 42 (1).

Verwey, S. 2005. Content analysis. In: Rossouw, D. 2005 (ed). *Intellectual tools skills for human sciences*. 2nd ed. Pretoria: Van Schaik.

Walker, W.E.1993. *Policy analysis and public infrastructure*. Santa Monica:RAND

Warwick, D.P. 1982. *Bitter pills: population policies and their implementation in eight developing countries*. Cambridge: Cambridge University Press.

Weimer, D.L. and Vining, A.R. 1989. *Policy analysis: Concepts and practice*. Upper Saddle River, New Jersey: Prentice Hall.

Weimer, D.L. and Vining, A.R. 1999. *Policy analysis: Concepts and practice*. 3rd ed. Upper Saddle River, New Jersey: Prentice Hall.

Welman, J.C. Kruger, S.J. Mitchell, B.C. 2001. Research methods for business and administrative sciences. 2nd ed. Cape Town: Oxford University Press

Welman, J.C. Kruger, S.J. Mitchell, B.C. 2005. *Research methodology*. 3rd ed. Cape Town : Oxford University Press.

Wikipedia. 2009. *The free encyclopedia*.
<http://en.wikipedia.org/wiki/Tariff> [Accessed: 17/9/2009]

Wilson, J.S. and Abiola, V.O. 2003. Editors. Standards and global trade. A voice for Africa. Washington, DC: The World Bank.

Wissink, H. and Melnyk, A. 2004. Globalisation, African Unity and a New Partnership for Africa's Development: working towards the creation of an environment for sustainable development. In: Fox, W. and Van Rooyen, E. 2004. (eds). *The quest for sustainable development*. Cape Town:Juta.

Wissink, HF. 2006. History and development of policy studies and policy analysis. In: Cloete, F. Wissink, H. and De Coning, C. 2006 (eds). *Improving public policy. From theory to practice*. 2nd ed. Pretoria: Van Schaik.

WB (World Bank) 2001. *Evaluating Public Sector Reform. Guidelines for assessment at country level. Impact of structural reform and capacity-building in the Public Service*. Girishankan, N. Washington: World Bank. Available online: <http://www.worldbank.org/html/oed> [Accessed 23/07/2006].

WB. (World Bank) 2005. *Doing Business in 2005*. Available online: <http://www.doingbusiness.org/> [Accessed 1/11/2006].

WTO. (World Trade Organisation) 2006. *Legal text: Technical Barrier to Trade Agreement*. Available online: http://www.wto.org/english/docs_e/legal_e/ursum_e.htm#dAgreement [Accessed 14/07/2006].



WTO. (World Trade Organisation) 2008. *Tri-annual Reviews*. Available online: http://www.wto.org/english/tratop_e/tbt_e/tbt_e.htm [Accessed 18/8/2008].

Yin, R.K. 1994. *Case study research: Design and methods*. 2nd ed. London: Sage.