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Developing the Shale Gas Industry in South Africa: An Analysis of the Environmental Legal Framework

by

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Submitted in partial fulfillment of the requirements for the degree

LLM INTERNATIONAL TRADE AND INVESTMENT IN AFRICA

in the

Faculty of Law

at the

University of Pretoria

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May 2014

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Declaration

I declare that this Mini-Dissertation which is hereby submitted for the award of Legum Magister (LL.M) in International Trade and Investment Law in Africa at International Development Law Unit, Centre for Human Rights, Faculty of Law, University of Pretoria, is my original work and it has not been previously submitted for the award of a degree at this or any other tertiary institution.

Zwelethu Sibiya

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Dedication

To uBaba no Mama,

For everything,

Ngiyabonga.

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Acknowledgements

I would like to start off by extending a heartfelt word of gratitude to my mother and father whose physical, moral, emotional, spiritual and financial support throughout my life has made me who I am. Your continued love and support sustains my determination to be a better person. Without you two I would not be where I am today. I continue to draw inspiration from your actions every day. Thank you!

I wish to acknowledge the support of various members of my family both immediate and extended. In particular I would like to acknowledge my sisters who have never been afraid to extend a helping hand when I needed it most. Thank you.

To the members of what my mother calls 'Club 17': you young men have become more than just friends to me, you have become my brothers. I thank you gents for the continued love and support. Shakespeare could have been describing our friendship when he wrote: 'We few, we happy few, we band of brothers!'

To my supervisor, Dr Femi Olusoyeju, I thank you for your patience and kind words.

To the LLM International Trade and Investment class of 2013/2014 (UP) I have taken away a lot from the interactions I have had with each and every one of you. During our many discussions and debates in class you played a role in shaping and changing my perspectives of the world and Africa in particular. A simple thank you will never be enough, but it will have to do for now. Thank you!

To Lonias Ndlovu and Tersia Ooosthuizen two of my undergraduate lecturers at the University of Zululand who identified my interest in academia at a time when I could not identify it as such. Your belief in my abilities has assisted me in making the correct decisions about my future. Thank you!

To my good friend Viola Mbhele thank you for all the input you gave to my work and the memories of the time spent in library will be cherished forever.

A special word of thanks to my sponsors the National Research Foundation for the financial assistance.

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List of Acronyms

AfDB – African Development Bank

AU – African Union

CBD – Convention on Biological Diversity

CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora

EIA – Energy Information Agency

GATT – General Agreement on Tarriffs and Trade

GDP – Gross Domestic Product

ICJ – International Court of Justice

IEA – International Energy Agency

NDP – National Development Plan

NPC – National Planning Commission

SADC – Southern African Development Community

tcf – trillion cubic feet

UN – United Nations

UNCCD – UN Convention to Combat Desertification

UNCED – UN Conference on Environment and Development

UNCLOS – UN Convention on the Law of the Sea

UNFCCC – UN Framework Convention on Climate Change

USA – United States of America

WCED – World Commission on Environment and Development

WCS – World Conservation Strategy

WSSD – World Summit on Sustainable Development

WTO – World Trade Organization

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Chapter One

Introduction

1.1 Background to the study

On the 15th of August 2012 South African Minister in the Presidency Trevor Manuel presented to the nation the National Development Plan (NDP).[1] In his own words, Minister Trevor Manuel describes the NDP as "a plan for a better future; a future in which no person lives in poverty, where no one goes hungry, where there is work for all, a nation united in the vision of our Constitution".[2]

This plan details the South African government's programme of action for the next 20 years. It highlights government's plan to grow an inclusive economy by the year 2030 through 'higher levels of investment and economic growth'.[3] The National Planning Commission (NPC),[4] which was charged with preparing the NDP,sets out, amongst other things,[5] the objective to grow an economy that will create jobs and improve infrastructure through investment. It then suggests, amongst other things, that investment should be prioritised at and directed towards the building of the necessary infrastructure to accelerate the exploration of domestic gas in order to diversify the country's energy mix. This exploration for gas will include the exploration for shale gas in the Karoo region of South Africa.[6]

It is evident from the foregoing that the NPC recognises the need to accelerate the exploration of shale gas reserves in South Africa. In this regard, the South African government has

[1] 'National Development Plan: Vision 2030'. Text Available online at http://www.npconline.co.za/medialib/downloads/home/NPC%20National%20Development%20Plan%20Vision%202030%20-lo-res.pdf

[2] In a speech delivered to the Joint Sitting of both houses of Parliament, namely the National Assembly and the National Council of Provinces(NCOP).Transcript available at http://www.thepresidency.gov.za/pebble.asp?relid=6601

[3] NDP (n 1 above) 4.

[4] The NPC is chaired by Minister Trevor Manual and consists of 25 other commissioners who are 'appointed by the President of the Republic to advise on issues impacting on long-term development'. See generally http://www.npconline.co.za/.

[5] Other objectives that the NPC include: transitioning to a low-carbon economy, an inclusive and integrated rural economy, reversing the spatial effects of apartheid, improving the quality of education, training and innovation, quality healthcare for all, social protection and building safer communities

[6] NDP (n 1 above) 14 -15. Emphasis added.

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responded by lifting the moratorium which was placed on the use of hydraulic fracturing[7] for the exploration of shale gas in the Karoo.[8]

But what is this shale gas and why is it important that South Africa explore its reserves? The US Energy Information Agency (EIA) defines shale gas as a"natural gas that is trapped within shale formations.Shales are fine-grained sedimentary rocks that can be rich sources of petroleum and natural gas."[9] In a study conducted in 2011, the EIA estimates that there is about 485 Tcf (trillion cubic feet) of recoverable shale in the Karoo.[10]An Econometrix Report on the subject estimates that the recovery of only about 10% (around 50 tcf) of shale gas could create of over 800 000 direct and indirect jobs and a contribution to the economy equivalent to 83% of South Africa's overall GDP in 2010.[11]

However, with all its economic promise, this type of exploration does not come without its own environmental risks.The African Development Bank (AfDB) identified the large use of water, water contamination, seismic events and venting and flaring of gas as the four key issues that governments have to consider when making a decision about developing this sector.[12] These concerns are echoed by South Africa's Department of Mineral Resources in its Investigation of Hydraulic Fracturing in the Karoo.[13]

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[7] This process is defined in section 1 of the *Proposed Technical Regulations for Petroleum Exploration and Exploitation* to the Mineral and Petroleum Resources Development Act 28 of 2002 (the MPRDA) as a process that involves 'injecting fracturing fluids into the target formation at a force exceeding the parting pressure of the rock to induce fractures through which petroleum can flow to the wellbore'. This is commonly referred to as 'fracking'

[8] 'Cabinet lifts moratorium on shale gas fracking in Karoo' *Business Day* 07 September 2012. Article available online at: http://www.bdlive.co.za/business/energy/2012/09/07/cabinet-lifts-moratorium-on-shale-gas-fracking-in-karoo

[9] U.S Energy Information Administration'Energy in Brief' http://www.eia.gov/energy_in_brief/article/about_shale_gas.cfm

[10] *World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the United States*. Page X-13 Released April 2011. It should however be noted that these estimates are disputed. The Petroleum Agency of South Africa (PASA) estimates the recoverable reserves of shale gas in the Karoo is only about 40 tcf, a fraction of the estimate provided by the EIA see 'SA petroleum agency's Karoo shale-gas estimate far lower' Business Day 21 February 2014 http://www.bdlive.co.za/business/energy/2014/02/21/sa-petroleum-agencys-karoo-shale-gas-estimate-far-lower

[11] Econometrix (Pty) Ltd *Karoo Shale Gas Report: Special Report on Economic Considerations Surrounding Potential Shale Gas Resources in the Southern Karoo of South Africa* 67.

[12] African Development Bank *Shale Gas and its Implication for Africa and The African Development Bank* 13. The Global Warming Policy Foundation points out the following criticisms of shale gas exploration : the shale gas industry uses dangerous chemicals in the fracking process that might contaminate groundwater; poorly cased wells allow gas to escape into underground aquifers; waste water returning to the surface during production, contaminated with salt and radon, may pollute streams; the industry's use of water for fracking depletes a scarce resource; the exploitation of shale gas damages amenity and landscape value. See The Global Warming Policy Foundation *The Shale Gas Shock 2011*

[13] Department of Mineral Resource*Report of the Working Group on the Investigation of Hydraulic Fracturing in the Karoo Basin of South Africa* 16

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In this regard the International Energy Agency (IEA) has developed a list of 'golden rules' for the exploration of unconventional gas, including shale gas. It lists the golden rules as follows:

- Measurement of resources, disclosure of information and engagement with various stakeholders;
- The careful selection of drill sites to decrease the environmental and socio-economic effects of hydraulic fracturing;
- The isolation of wells and the prevention of leaks;
- The responsible treatment of water;
- The elimination of venting, the minimization of flaring and other emissions;
- The readiness to think big; and
- Ensuring the consistency of high level environmental performance.[14]

These 'golden rules' set by the IEA look to address the risks associated with unconventional gas exploration in an environmentally sustainable manner. In promoting an effective and efficient energy sector by 2030 the NDP sets out economic growth, social equity and environmental sustainability as the cornerstones of the development of the energy sector in South Africa.[15]

The NDP further outlines South Africa's plans to diversify its energy mix not only for supply security in South Africa, and the SADC region, but also to mitigate the effects of climate change caused by carbon emissions and consider other power generation sources such as shale gas.[16]It is evident that in meeting its national developmental goals South Africa will need to strike a balance between developing the environmentally risky shale gas industry and preserving the country's natural resources.

The questions to be explored in this study concern whether, firstly, in achieving its national developmental goals, South Africa can develop the shale gas industry and, secondly, whether the environmental laws and regulations in place are sufficient to mitigate the environmental risks associated with shale gas exploration.

In the first instance the balancing act consists mainly of a balance between the economic, social and environmental development of the country's natural resources. Faure puts it clearly that "the balancing of interests in environmental law hence consists mainly of a balance between economic interests (including social interests such as the protection of employment) and the protection of environmental interests".[17]

[14] *World Energy Outlook Report on Unconventional Gas: Golden Rules for the Golden Age Report* 14
[15] NDP (n 1 above) 140
[16] NDP(n 1 above) 44
[17] M Faure "The Balancing of Interests: Some preliminary (economic) Remarks" in "*The Balancing of Interests in Environmental Law in Africa*"

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With the South African unemployment rate sitting at 24.1%[18] and high levels of inequality and poverty,[19] the economic development and social uplift of the general population become the country's top priorities. However, balancing this much needed development with environmental protection is not, by any means, an easy task for the government. It requires a delicate balance between developing the extractive industries which have the potential to contribute to South Africa's economy against the protection of the natural resources from unfettered exploitation which has the potential to negatively impact upon the environment.

Faure goes on to state that "the outcome of this balancing process will then be laid down in environmental legislation". This, in essence, forms the basis for the second part of the question which seeks to examine whether the environmental legislation in respect to shale gas exploration in South Africa firmly strikes that balance.

It is apparent from the above that two issues become important for the current discussion. From the first question it can be deduced that the South African government acknowledges the need to encourage the development of the shale gas industry in a holistic manner which encompasses the economic, social and environmental aspects of development without allowing one of these aspects to supersede the others. With regards to the second question, the need to protect the environment through enforceable legislation that is specifically aimed at environmental protection comes to the fore. However, such protection of the environment involves an integrated approach to environmental protection without sacrificing economic and social development in the process. Simply stated, the above seeks to address the issues of (1) development and (2) environmental protection.

It should however be noted that the approach to these issues seems to be an all-encompassing approach to both development and environmental protection incorporating economic, social and environmental interests in the process. This is evidenced by the repeated usage of phrases like 'economic growth, social equity and environmental sustainability' in the NDP with emphasis being placed on an approach that sees these interests being treated equally.[20] The question however arises whether these two separate and seemingly opposing interests can be reconciled and implemented to function in harmony with each other and the other various factors that surround development and the environment.

These two issues of development and environmental find common ground in, and are both incorporated into, the now widely accepted international environmental law principle of

[18]Statistics South Africa. Available at: http://beta2.statssa.gov.za/?page_id=737&id=1 (last accessed 26 February 26, 2014)
[19] With an income Gini co-efficient of 0.7 being amongst the highest levels in the world. See http://www.worldbank.org/en/country/southafrica/overview
[20]NDP (n 15 above) 140

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'sustainable development'. This principle came to the attention of the international environmental law fraternity after the release of what is now known as the Brundtland Report.[21] The Report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[22] The Report goes further to state that the principle of sustainable development entails within it two concepts:

> (1) 'the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
> (2) the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.'[23]

These concepts require that, on one hand, the needs of the most vulnerable in society be met and that they be afforded the opportunity to aspire to a better existence for themselves.[24] Recognising that these needs are determined by the social and cultural context in which people live the Report requires, on the other hand, that consumption standards should remain within the limits of what the environment can provide and that all nations should be in a position to strive to keep their consumption within these limits.[25] These requirements seek to ensure that a good balance is struck between development and environmental protection taking into account the social, economic, cultural and environmental dimensions involved which surround development and environment protection.

This makes the concept of sustainable development the ideal principle with which to analyse the potential development of the shale gas industry in South Africa. It is for this reason that concept of sustainable development will be used in this work as a lens through which to analyse the effectiveness of environmental legislation in South Africa with particular reference to the legislation affecting shale gas exploration.

1.2 Research Problem

When it comes to shale gas exploration, South Africa finds itself in between two opposing, seemingly irreconcilable, views. On one hand, South Africa needs to meet its national developmental goals as outlined in its National Development Plan while, on the other hand, it needs to ensure that such development is sustainable in the long run. Alternatively, South Africa may want to exploit its natural resources for the benefit of the South African economy and ensure that such exploitation of the natural resources does not result in the depletion of

[21] *World Commission on Environment and Development Our Common Future*
[22] WCED: Our Common Future (n 20 above) Chap 2 para 1
[23] WCED: Our Common Future (n 21 above) 43
[24] WCED: Our Common Future (n 21 above) para 4
[25] WCED: Our Common Future (n 21 above) para 5

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other natural resources associated with the exploitation of shale gas reserves or the degradation of the environment.

The problem confronting South Africa with regards to shale gas, and the central thesis of this study, is: whether there exists a legal framework sufficient to deal with the environmental concerns associated with the exploration of shale gas?

1.3 Research Question

The overarching question that this study seeks to answer is:

> Whether there exists a legal framework in South Africa sufficient to deal with the environmental concerns associated with the exploration of shale gas?

In pursuit of a response to this central question attempts will be made to answer the following specific questions:

1) What are the competing interests with in the development of the shale gas industry in South Africa?
2) Whether there exists a concept in international or domestic law which could assist in the reconciliation of the competing interests?
3) Whether the domestic legal framework, in respect of shale gas exploration, is equal to the requirement of the concept identified above?

1.4 Thesis Statement

This study argues that there are purported socio-economic benefits that could result from the development of the shale gas industry in South Africa, but that environmental protection and development, which are at the heart of the exploration of shale gas, are the two competing interests that must be reconciled and this reconciliation must be used to guide the industry laws in order for such laws to be sufficient and appropriate

1.5 Significance of the Study

The EIA estimates that there is about 1042 Tcf of recoverable shale gas in Africa spread around the continent in countries such as Algeria, Libya, Tunisia, Morocco, Mauritania, Western Sahara and South Africa.[26] In an analysis of the situations in each of these countries the AfDB finds that South Africa is a relatively newcomer in this sector (natural gas production) with far inferior expertise in gas production and insufficient infrastructure for the sector. These issues are

[26] *World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the United States* (n 10 above) VIII – X

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further exacerbated by the environmental impacts of hydraulic fracturing.[27] South Africa must ensure that the regulations in place, both technical and legal, are sufficient to protect the environment while assisting in reaching the nations developmental goals.

The study will contribute to the on-going and ever expanding body of literature on the environmental protection laws in South Africa and Africa as a region as they relate to shale gas exploration and the use of hydraulic fracturing.

1.6 Literature Review

As stated above, the effectiveness and efficiency of the energy sector by 2030 rests on economic growth, social equity and environmental sustainability as the cornerstones of the development of the energy sector in South Africa.

It is evident that the NPC has put economic growth, social equity and environmental sustainability on equal footing with regards to developing an efficient energy sector by 2030. Achieving this ideal would require a delicate balance meeting the developmental goals set by the NDP which include economic growth and employment while on the other hand ensuring that this growth takes into account the social and environmental aspects of development. This raises the question of the type of development South Africa should consider. Whether this development will only be economic or will it focus on the environment while the economic growth continues to slow down?

A reading of the literature presents two views in this respect. The first traditional view advocates for development which is focused on the economic dimension as being at the centre of development while viewing the other surrounding factors, whether positive or negative, as mere consequences of the development. The more modern view of development speaks of an integrated approach to development that encompasses the social, environmental and cultural aspects of development into the development process essentially placing them on an equal footing with the economic side of development.[28]

The ideal of sustainable development which was first articulated in the Brundtland Report commissioned by the United Nations (UN) is the closest concept that seeks to balance these two seemingly conflicting goals. The concept looks to promote use of natural resources in such a way that even future generations can benefit.

[27] African Development Bank (n 12 above) 34 – 39

[28] D Bradlow 'Differing Conceptions of Development and the Content of International Development Law' *South African Journal on Human Rights Law* 21 (2005) 47

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However Bosselmann argues that the greatest misconception of sustainable development is perceiving environmental, economic and the social components of sustainable development as being equally important. This perception, he avers, is the greatest obstacle to achieving social and economic justice.[29]

1.7 Research Methodology

The research will mainly be desk and library based. The approach to the study will be descriptive and analytical. The primary sources to be consulted will be domestic South African legislation such as the National Environment Management Act, the Mineral and Petroleum Resources Development Act, the National Water Act and the Proposed Regulations for Petroleum Exploration and Exploitation to the extent that they apply.

The secondary sources of information will include, but are not limited to, relevant journal articles, papers and/ or articles written on the topic by the relevant institutions and academics in the field. The study relies also heavily on internet public sources. Speeches and daily newspapers containing information relevant to the issues under discussion will also be considered.

1.8 Overview of Chapters

The study will consist of 5 chapters set out as follows:

Chapter 1

This chapter introduces the study, outlines the background to the study, the research problem, research questions, thesis statement, justification of the study, literature review and the methodology.

Chapter 2

This chapter will consider the two competing interests, namely environment and development. The discussion of each of these interests will consist of a brief exploration of the origins of environmental and development law at the international, regional and national levels. This will be followed by the human rights perspective on these interests and then an exploration of the South African experiences and approaches will conclude the discussions

Chapter 3

In this chapter, the concept of sustainable development will be explored. The exploration will include the origins of this concept, its meaning, the international, regional and national

[29] *The Principle of Sustainability: Transforming Law and Governance* 23

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approaches to sustainable development and the legal implications of sustainable development at these levels.

Chapter 4

In this chapter, the analysis of the South African environmental legislation, as it relates to shale gas exploration, will consist primarily of an analysis of NEMA followed by the analysis of other legislation.

Chapter 5

This chapter gives concluding remarks and makes recommendations on how best South Africa can protect the environment while at the same time exploiting its natural resources so as to meet its national development goals and take its rightful place on the African continent

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Chapter 2

Two Competing Interests: Environment and Development

2.1 Introduction

The levels of poverty and inequality confronting South Africa elevate the need for economic development as the top priority for the country. However this development may come at huge environmental costs especially as it relates to the development of the shale gas industry.

The environmental costs of the development of the shale gas industry, however, may be mitigated through the use of effective and enforceable environmental legislation that promotes the ideals of the now internationally recognised and accepted concept of international environmental law called sustainable development.

It is clear that the two competing interests that must be balanced against each other, in essence, are the exploitation of natural resources to advance the economic development of the country and the protection of the environment against uncontrolled degradation. The United Nations General Assembly realized, as far back as 1962, that there is a need to balance these two competing interests.[30]

In this chapter the two competing interests, namely environment and development, will be discussed in turn. The discussion of each of these interests will consist of a brief exploration of the origins of environmental and development law at the international, regional and national levels. This will be followed by the human rights perspective on these interests and then an exploration of the South African experiences and approaches will conclude the discussions.

2.2 Environment

2.2.1 History of International Environmental Law

In the early nineteenth century, there was a growing concern and awareness by many in developed countries about the global nature of environmental issues as environmental degradation and deterioration do not respect boundaries and may have devastating effects in neighbouring countries.[31] This necessitated the development of international environmental

[30] UN General Assembly Resolution 1831
[31] J Thornton & S Beckwith *Environmental Law* 2nd ed. (2004) 29

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laws, standards and norms which would govern the actions of states with regard to shared resources and the environment in general.[32]

Sands argues that there are four distinct periods in the development of international environmental law.

The first period began with bilateral fisheries treaties and concluded with the creation of the new international organisations in 1945. Sands posits that during this period nations began to understand that the process of development required limitations on the utilization of certain natural resources. This would be supported by the adoption of appropriate legal documents.[33] The main natural resources which were targeted for conservation at this time were fisheries, flora and fauna resulting in the negotiation and adoption of conventions such as the International Convention for the Prevention of Pollution of the Sea by Oil in London, the Convention on Fishing and Conservation of the Living Resources of the High Sea in Geneva and the Convention on International Trade in Endangered Species of Wild Fauna and Flora in Washington(commonly referred to as CITES).

The second period began when the UN was created and culminated with the UN Conference on the Human Environment that was held in Stockholm, Sweden in 1972. According to Caldwell the Stockholm Conference 'enlarged and facilitated means toward international action previously limited by inadequate perception of environmental issues and by restrictive concepts of national sovereignty and international interest.'[34] Sands explains that this period was characterised by the creation of a number of international organisations with the necessary jurisdiction to oversee and preside over environmental matters and disputes. These organisations also had the capacity to preside over the adoption of legal instruments which were targeted at addressing sources of pollution and the conservation of general and particular environmental resources.[35]

The third period lasted from the Stockholm Conference to the UN Conference on Environment and Development (UNCED) in 1992. Sands posits that during this period, the UN tried to harmonise responses to international environmental issues at a regional and global level

[32] Sands is of the opinion that the rise of international environmental law was brought about by the fact that States began to realize that environmental concerns are no longer the prerogative of one negatively state. The mere fact that ecological degradation does not respect national boundaries requires a joint effort from States to confront environmental issues. See P Sands *Principles of International Environmental Law* 2003 2nd ed
[33] Sands (n 32 above) 25
[34] LK Caldwell *International Environmental Policy: Emergence and Dimensions* 2nd ed 1990 55
[35] Sands (n 32 above) 25-26.

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through the adoption of conventions which culminated in, for the first time, the banning of the production, consumption and international trade in certain products.[36]

The fourth period, which Sands names the period of integration, was triggered by the UNCED and is characterised by the integration of environmental concerns into international law and policy making. This period saw increased attention being paid to compliance with international environmental obligations which resulted in a forever expanding body of international environmental law jurisprudence.[37]

Between the second and the fourth period there was growth in the number of people and international organisations that recognised the interconnectedness of environmental issues. It began with the recognition contained in Principle One of the Stockholm Declaration that reiterated the long established rights to freedom, equality and adequate conditions of life. The Principle envisages that life should be supported by a quality environment that promotes the well-being and dignity of all humans. However the Principle still thrusts upon the current generation of humans the responsibility to take care of the environment not only for their own benefit but also for the benefit of future generations. This growth was furthered by the recognition of international environmental law in the mid-1990s by the International Court of Justice (ICJ) when it acknowledged the existence of a general duty on States to make sure that actions within their borders or control do not impact negatively on the environment of other States or areas beyond their national control which, the court stated, 'is now part of the corpus of international law relating to the environment'.[38]

This recognition by the ICJ had been preceded by a number of other cases which built the international environmental law jurisprudence. In the nineteenth century, for example, a dispute between the United States of America (USA) and Great Britain which concerned the exploitation of seals for fur established an important principle which is still relevant to this day. This principle essentially restricts the rights of states to exercise control over natural resources which are outside their territory in order to ensure their preservation.[39]

Another example came in the first half of the twentieth century in the case known as the *Train Smelter* case between the USA and Canada[40] over emissions of sulphur fumes from a Canadian smelter which was causing damage to crops and vegetation in the American state of

[36] Sands (n 32 above) 26
[37] Sands (n 32 above) 26
[38] (1996) ICJ Reports 226 242. This obligation is consistent with Principle 21 of the Stockholm Declaration which guarantees States the right to exploit their natural resources in accordance with their own environmental policies with the only stipulation being that the concerned State bears the responsibility to ensure that this exploitation does not cause damage to the environment of another State.
[39] *The Pacific Fur Seals Arbitration* (1893) 1 *Moore's International Arbitration Awards* 755
[40] *United States v Canada* 3 RIAA (1941) 1905

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Washington. The tribunal which was tasked with settling the matter held that 'no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory' of another state or the properties or persons in that other state, where there exists clear and convincing evidence of serious injury caused by such actions.[41] This finding by the tribunal is described by Sands as representing a 'crystallising moment for international environmental law which has influenced subsequent developments in a manner which undoubtedly exceeds its true value as an authoritative legal determination.'[42]

The expansion of the international environmental law jurisprudence was furthered by the International Court of Justice (ICJ) in cases such as the *Corfu Channel* case which, although it did not concern an environmental issue, developed the 'no harm' rule. The court emphasised every state's obligation not to actively allow its territory to be used in such a way that it infringes upon the rights of other states.[43]Another case decided by the court limited the rights of states where shared watercourses are concerned.[44]

The development of international environmental law has seen environmental concerns make their way into different other areas of international law over the last three decades. Part XII of the UN Convention on the Law of the Sea (UNCLOS) obliges signatories to the convention to 'protect and preserve the marine environment.'[45] It compels states to initiate measures to stop, diminish and manage pollution of the marine environment and to also ensure that developments within their national jurisdiction or control do not cause damage by pollution to other states and their environment.[46] In the international trade context article XX of the General Agreement on Tariffs and Trade (GATT) allows contracting state parties to impose measures which are 'necessary to protect human, animal or plant life or health' provided that such measures are not arbitrary or unjustifiable.' Such measures should also not, however, constitute a disguised restriction on trade.

2.2.2 Human Rights and Environmental Protection

The permeation of environmental concerns in other fields of international law has included a human rights approach to environmental protection. However, the human rights approach to environmental protection still remains controversial. As Rodriguez-Rivera reveals 'this controversy stems from inherent conflicts raised by traditional or classical international law

[41]35 American Journal of International Law 716 (1941); 9 ILR 317
[42]Sands (n 32 above) at 30
[43]*United Kingdom v Albania* ICJ (9 April 1949) (1949) ICJ Reports 244
[44]*France v Spain* (1957) 24 ILR 101
[45]Article 192 UNCLOS
[46]Article 194 UNCLOS

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doctrine, whereby the concept of state sovereignty and the international protection of human rights are to be incompatible.'[47]

Rodriguez-Rivera outlines two specific reasons for this incompatibility. Firstly, the understanding that international law is 'a legal regime whose primary function is the regulation of relations between states' and therefore 'the application of international law is limited to issues pertaining to interstate relations' and, to this end excludes the individual, highlights the difficulty of extending human rights to environmental protection.[48] Secondly, the consensual doctrine which is to be found in the traditionalist's proposition that 'international norms are required to evince state consent, either through binding treaties or state practice, poses another form of incompatibility with the human rights approach to environmental protection.[49] What is clear from these two reasons outlined above is that both reasons heavily rely on the concept of state sovereignty which would then limit the development of new human rights since those challenged, the states, have exclusive control over the legitimacy of the complaints made against them by their own victims[50]

The obvious question that flows from the continued assertion of a human rights approach to environmental protection is 'whether a human right to live in an environment of such a quality as is consistent with a life of dignity and well-being is recognized under international law.'[51] Higgins is of the view, although stated in the context of general human rights, that the answer to this question depends on the approach one takes to the nature and sources of international law.[52] She presents two views in this regard. She posits that:

> Some will answer that the source of human-rights obligations is to be found in the various international instruments; and that whatever rights they contain and designate as human rights are thereby human rights, at least for the ratifying parties. They may in time become reflected in customary international law, and thus become human rights more generally. Others will say that the international instruments are just the vehicle for expressing the obligation and providing the detail about the way in which the human right is to be guaranteed. It is an interaction of demands by various actors, and state

[47] LE Rodriguez-Rivera 'Is the Human Right to Environment Recognized Under International Law? It Depends on the Source' *Colorado Journal of International Environmental Law and Policy* 1. Rodriguez-Rivera further explains that traditional or classical international law doctrine is 'the view that international law exclusively governs the relations between States, and that a State's consent is required, explicitly or implicitly, as a pre-condition for an international norm's binding effect over a particular State' at 2
[48] Rodriguez-Rivera (n 47 above) 2
[49] Rodriguez-Rivera (n 47 above) 2-3
[50] Rodriguez-Rivera (n 47 above) 3
[51] Rodriguez-Rivera (n 47 above) 4
[52] R Higgins *Problems & Process : International Law and How We Use It* (1994) 99

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> practice in relation thereto, that leads to the generation of norms and the expectation of compliance in relation to them.[53]

Merrils is of the view that, effectively, the human rights approach to environmental protection is dependent on and related to other established human rights. Merrils states that:

> On the one hand, since the future of humanity depends on maintaining a habitable planet, effective measures to protect the environment are crucial to any project for advancing human rights. In this sense, then, human rights rely ultimately on achieving a secure environment. On the other hand, because human rights law already protects interests such as those concerned with life and the home, claims at the international level relating to a variety of environmental matters are now possible by those affected. Accordingly, the exercise of established human rights is already contributing something to environmental protection.[54]

What this means is that the advancement of other human rights relies on the protection of the current human environment and that the current regime of human rights contributes significantly to protecting the human environment. It is therefore clear that there exists a complimentary relationship between the established human rights and environmental protection. This relationship recognises that the fundamental rights to freedom, equality and adequate conditions of life should be enjoyed in 'an environment of a quality that permits a life of dignity and well-being' as envisaged by the Stockholm Declaration.[55] This kind of approach to environmental protection involves the 'reinterpretation of existing human rights to give effect to environmental protection'[56]

Some other approaches[57] to this question involve seeing the right to environment as a third generation fundamental human right on its own. This approach recognises a distinct right to the environment. It is articulated in international documents such as the Proposed Legal Principles for Environmental Protection and Sustainable Development that was adopted by the World Commission on Environment and Development (WCED)where Principle 1 confers upon all humans beings the 'fundamental right to an environment adequate for their health and well-

[53] As above
[54] J Merrils 'Environmental Rights' in D Bodansky et al *The Oxford Handbook of International Environmental Law*(2007) D. Bodansky et al 664
[55] Principle 1
[56] L Feris& D Tladi 'Environmental Rights' in *Socio-economic Rights in South Africa* D Brand & C Heyns (eds) 2005 251
[57] For a discussion of the existence of this right and the possible approaches used in international law see generally JD van der Vyver 'The criminalisation and prosecution of environmental malpractice in international law' (1998) 23 *South African Yearbook of International Law*.

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being'[58].This approach finds further expression in Principle 2 of the of the Draft Principles on Human Rights and the Environment which accords to all people the right 'to a secure, healthy and ecologically sound environment'[59]

The third approach to the question involves using established procedural rights which a person would be entitled to which would be necessary for the implementation of their 'substantive rights that are part and parcel of the expansive right to environment'.[60]Rodriguez-Rivera includes in this list of rights procedural rights such as the right to access information regarding the environment, the participation of the affected communities in the decision making process concerning environmental practices and making available legal remedies, through due process rights, to redress environmental harm.[61]

What is evident from the foregoing is that the debate concerning the human rights approach to environmental protection remains highly controversial and unsettled. As explored above the answer to the quandary which manifests itself at the point where human rights and the environment intersect depends entirely on the approach one takes in terms how they choose to perceive human rights and the environment. Rodriguez-Rivera summarises the response to the question of whether the human right to environment is recognized under international law in two words: 'It depends!'[62]

2.2.3 The Regional Approach to the Right to Environment

One of the objectives of the African Union (AU) listed in the Constitutive Act of the African Union is to 'promote and protect human and Peoples' rights in accordance with the African Charter on Human and Peoples' Rights and other relevant human rights instruments'.[63] The relevant article in the Charter in respect of the promotion and protection of environmental rights is article 24 of the African Charter on Human and Peoples Right (hereafter the African Charter or Charter) which confers on everyone the right to a 'generally satisfactory environment favourable to their development'.

The expression of the right to a 'generally satisfactory environment' in the Charter has prompted African countries to include within their constitutions environmental provisions. This trend is seen particularly in those African constitutions which were adopted or amended in the

[58]See *Proposed Legal Principles for Environmental Protection and Sustainable Development* adopted by the WCED Experts Group on Environmental Law annexed to WCED: Our Common Future (1987)
[59] See Draft Principles on Human Rights and the Environment in the UN Sub-Commission on Prevention of Discrimination and Protection of Minorities *Human Rights and the Environment*, Final Report of the Special Rapporteur UN Doc E/CN.4/Sub 2/1994 19
[60]Rodriguez-Rivera (n 47 above) 15
[61]As above
[62]Rodriguez-Rivera (n 47 above) 45
[63]Article 3(h)

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mid-1990s. Bruch, Coker and VanArsdale observe that 'at least thirty-two African Countries have express environmental provisions in their constitutions'.[64] As the authors observe, this is in response to the growing awareness of environmental issues and the protection that is needed towards the environment.

Feris and Tladi note that the African Charter, in using the word 'peoples', proclaims a collective right to a generally satisfactory environment.[65]This argument is in line with the general letter and spirit of the Charter as solidarity rights are a distinct feature of the Charter.[66] This view had been emphasised much earlier in *The Social and Economic Rights Action Centre for Economic and Social Rights v Nigeria*[67] (SERAC Decision) where the African Commission held that the African Charter in Articles 20 to 24 clearly provide for peoples to claim this right as collectives. The Commission stressed the importance of community and collective identity in African culture which is a mainstay of the African Charter. The right to a generally satisfactory environment therefore is not only an individual right in this regard but is a right that a group of people can claim as a collective.

2.2.4 The South African Approach to the Right to Environment

Section 24 of the South African Constitution contains the environmental right accorded to everyone in the country. Section 24 (a) of the Constitution accords to everyone the right to an environment that is not harmful to their health or well-being. While section 24 (b) grants everyone the right to have the environment protected through legislative and other measures. Kidd identifies two parts to this right. Paragraph (a), he avers, is a fundamental right, while paragraph (b) is a directive to the state to take measures to attain this right contained in paragraph (a).[68] The first question that arises from this constitutional provision is to ask 'what is the environment in this sense and what does it entail?'

Although the 'environment' is not explicitly defined in the Constitution, a definition of the 'environment' can be found in the National Environmental Management Act (NEMA).[69]Section 1 (xi) of the NEMA defines the 'environment' as:

> 'the surroundings within which humans exist and that are made up of –
>
> (i) the land, water and atmosphere of the earth;

[64]C Bruch et al 'Constitutional Environmental Law: Giving Force to Fundamental Principles in Africa' *Columbia Journal of Environmental Law* (2001) 26 131 145
[65]Feris&Tladi (n 56 above) 256
[66] EA Ankumah*The African Commission on Human and Peoples' Rights: Practice and Procedures*(1996) 161
[67]Communication 155/96, *The Social and Economic Rights Action Centre for Economic and Social Rights v Nigeria*, Fifteenth Annual Activity Report para 40
[68]M Kidd 'Environment' in I Currie & J de Waal (eds) *The Bill of Rights Handbook* 6th ed. (2013) 518.
[69]Act 107 of 1998

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(ii) micro-organisms, plant and animal life;

(iii) any part or combination of (i) and (ii) and the interrelationship among and between them; and

(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.'

There is consensus among South African scholars that the definition of 'environment' contained in the NEMA is not sufficient and a wider meaning would not unreasonably limit the right.[70] Kidd notes that while the definition of environment in the NEMA is not too wide it also does not limit itself to the physical environment only.[71]It takes an anthropocentric approach by placing human beings at the centre of the environment and then 'includes the physical environment and the interactions between components of the physical environment and between those components and humans'.[72]Du Plessis adds that the space where people live and work, in other words the built environment, could be included within the scope of the definition of the environment.[73]Feris incorporates within this definition both the socio-economic and cultural dimensions of the interrelationships between human beings and between humans and the natural environment.[74]She argues that this wide definition could be invoked to 'prevent the displacement and relocation of indigenous groups on the basis that the loss of culturally or historically significant sites violates s 24'.[75] It can be concluded therefore that this definition is in conformity with the central concept of sustainable development as expressed within the environmental right in the Constitution and South Africa's environmental law generally.[76]

2.2.5 Interpretation of the Environmental Right in South Africa

In understanding the nature of the human right to a healthy environment it is prudent to briefly explore the nature of rights in general. Traditionally, human rights have been divided into three separate and distinct categories or generations of rights. The first generation of rights are civil and political rights of individuals such as the right to life, equality and freedom of association. The manner in which these rights are usually enforced is in a negative way by not forcing the state to act and consequently preventing the state from infringing upon these rights. The second generation of rights are social, economic and cultural rights which include the right to work, healthcare and housing. These rights require the state to act positively and progressively

[70] M Kidd 'Environment' in Currie & de Waal (n 68 above) 519
[71]M Kidd *Environmental Law* 2nd ed. (2011) 4
[72] M Kidd (n 68 above)
[73]A du Plessis 'South Africa's Constitutional Environment Right (Generously) Interpreted: What is in it for Poverty' *South African Journal on Human Rights* (2011) 27 279 292-293
[74] L Feris 'Environment' in I Currie & J de Waal (eds) *The Bill of Rights Handbook* 5thed (2005). Kidd refers to this as the 'social environment' See n 68 above 519
[75]Feris (n 74 above)
[76] M Kidd 'Environment' in Currie and de Waal (n 68 above) 519

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in order for these rights to be realised. The third generation of rights refer to collective rights or what is known as 'people's or solidarity rights' as they are rights that exist to protect the public as a whole and are not assigned to specific individuals. This includes environmental rights and the right to development[77].

Unlike the way in which international and regional instruments speak of environmental rights, section 24 of the Constitution has been expressed as an individual right and not a collective one.[78]However, environmental issues often affect people as a collective and not as individuals. Feris and Tladi conclude therefore that because of the widened scope for representative, class and public interest litigation, groups of people may utilise the broadened *locus standi* offered in section 38 of the Constitution to enforce environmental rights where the infringement of an environmental right is a collective one in nature.[79]

As pointed out earlier, section 24 of the Constitution consists of, firstly, a fundamental right to an environment that is not harmful to the health and well-being of people and, secondly, a directive to the state to ensure that this right is attained. In the first instance, with regard to the provision contained in paragraph (a), distinction must be made between the right to an environment which is not harmful to a person's health and the right to an environment which is not harmful to a person's well-being. In the second instance, with regard to the provision contained in paragraph (b), an examination of the environmental right 'to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures' will be undertaken in this respect.

Concerning the right to an environment that is not harmful to one's health, Glazewski is of the view that the right contained in section 24 (a) of the Constitution goes beyond the coverage of section 27, which guarantees the right of access to health services, as a particular environment can be harmful to a person's health and yet not infringe their right to access health care services in terms of section 27.[80]The health aspect of this right is not particularly new as an applicant may possibly have a claim under the common law of nuisance where their health is affected.[81]The more ground-breaking aspect of this right, however, is the right to an environment that is not harmful to a person's wellbeing.

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[77] M. Kidd (n 71 above) 21. Glazewski echoes the point that section 24 (a) is a fundamental right. However he highlights the fact that by imposing a constitutional imperative on the state to secure the right of individuals section 24 (b) is a socio-econmic right in nature. See *Environmental Law in South Africa* 2nd ed. J Glazewski (2005) 75

[78]Feris and Tladi (n 56 above) 258

[79]Feris and Tladi (n 56 above) 258-259.

[80]Glazweski (n 77 above) 76

[81]See *Verstappen v Port Edward Town Board and Others* 1994 3 SA 569 577H

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The meaning and scope of what exactly 'well-being' entails is not entirely clear however. This admission was made by the court in *HTF Developers (Pty) Ltd v The Minister of Environmental Affairs and Tourism*[82]where it was stated by the court that 'the term 'well-being' is open-ended and, manifestly, is incapable of precise definition.'[83]Glazewski describes the potential ambit of the right to 'well-being' as being 'exciting but potentially limitless'[84]

Glazewski suggests that this term implies that the environment is not only influential to human life in that it secures benefits such as good health, food and tourist-related income but, he also adds that, certain aspects of the environment have an inherent worth and are deserving of conservation for their inherent value.[85]He argues, in conclusion, that what makes up the content of 'well-being' depends on the perspective of the person who is claiming that right and will be adjudicated upon based on the facts of the case that have been brought to the attention of the court.[86]

The right to have the environment protected contained in section 24 (b) imposes on the state a positive obligation to guard against environmental degradation. This provision implies that in order to achieve this ideal, government must enact reasonable legislative and other measures that meet the criteria set out in section 24 (b) (i)-(iii). The protection of the environment in this regard is done so as to benefit present and future generations.

There are two elements which can be extrapolated from this section. The environmental protection which is envisaged must(1) be for the benefit of present and future generations and (2) be enacted through reasonable legislative and other matters. The first instance espouses the ideal of intergenerational equity which, Brown-Weiss argues, is an ideal that seeks to promote the proposition that the current generation holds in trust the earth for future generations and accordingly must be managed effectively to meet the needs of future generations.[87] In the South African context, the court, while echoing the provisions of section 24 (b) of the Constitution and recognising the benefits due to future generations, has held that the idea of balancing environmental interests against the much needed socio-economic development that can be justified must provide for the inclusion of future generations in the developmental plans.'[88]

2.3 Development

[82]2006 5 SA 512 (T)
[83]As above 518H.
[84] J Glazewski '*Environmental Law in South Africa*' (2000) 86
[85]Glazweski (n 77 above) 77
[86]As above
[87]E Brown-*Weiss In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity* 1989
[88]BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation and Land Affairs 2004 5 SA 124 (WLD)

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2.3.1 History of International Development Law

Even after many countries were decolonized, the remnants of colonial rule remained in that the economic order of the world continued to benefit the more developed economies of the former colonial powers at the expense of their former colonies.[89]It was therefore prudent that a new international economic order be established to address these imbalances. Prompted by the realisation that the international economic order, which is governed by international law, works to the disadvantage of developing countries (which had no input in drafting the 'rules of the game')the newly independent countries and sympathetic legal commentators constructed legal arguments to justify their proposed changes to the economic interactions with other states as well as to 'gain greater control over their economic resources'.[90] These efforts resulted in the adoption by the UN General Assembly of a series of declarations such as the UN Declaration on Permanent Sovereignty over Natural Resources in 1962,[91] the UN Declaration on the Establishment of a New International Economic Order in 1974[92] and, perhaps more importantly and more relevant to the current discussion, the UN Declaration on the Right to Development 1986.[93]

When adopting the Declaration on the Right to Development, the UN General Assembly recognised, as the preamble states, that 'development is a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and in the fair distribution of benefits resulting there from'. It is evident from this definition that a multi-dimensional integrated process of development encompassing economic, social, cultural and political factors was envisaged by the drafters of the text. Therefore Bradlow correctly concludes in this respect that development projects and policies cannot continue to be viewed as individual events but should rather be viewed as a continuous process that involves social, economic and environmental change.[94]

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[89] M Bulajic *Principles of International Development Law* (1986) 15. Bulajić goes on to state that 'the developing countries, which contain 70 per cent of the world's population, account for only 30 per cent of the world's income.'

[90]For an exposition of a brief history of international development law see D Bradlow Differing Conceptions of Development and the Content of International Development Law *South African Journal on Human Rights Law* 21 (2005) 48 - 52

[91]UN Doc A/5217 (1962)

[92]UN Doc A/Res/S-6/3201 (1974)

[93] Un Doc A/Res/41/128

[94]D Bradlow (n 89 above) 67. In explaining what this means Bradlow continues to state that 'to assess fully the desirability of a particular project or policy proposal it is necessary to account for all the ways in which the project will affect the social and physical environment in which it is to be located and how this impact will evolve during the life cycle of the project or policy'

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This definition in the Declaration provides the dimensions which need to be taken account of when a development project or policy is being contemplated. It further provides for the ideal outcome of the development process which would entail an equal distribution of the results which flow from development.

Another important aspect of development in this respect is the view that 'development is a process from one point of time to another'[95], which seeks to improve the socio-economic conditions of the people it is targeted at. This process must not only generate economic growth but it should distribute the benefits of this growth equitably, regenerate the environment, empower people and give 'priority to the poor, enlarging their choices and opportunities' and also provide for their effective participation in the decisions that have the potential to change their lives.[96] Once again focus is also placed on the other facets of development such as economic growth, environmental protection, social justice and equity.

The modern multidimensional approach to development in this regard is a deviation from the traditional view of development which sees development as primarily an economic process that consists of separate projects and specific economic policies.[97] Proponents of this view acknowledge that development may have social, environmental and political implications but argue that 'these can be dealt with separately from the economic aspects.'[98]For as long as the economic and financial benefits of a project outweigh the costs, the project will be justified and the broader policy issues, i.e. social and environmental issues, will be treated as necessary outcomes from the process of development.

2.3.2 The Right to Development

Even after considering the different approaches to development, the question as to whether development can be considered a right is however still left unanswered. A response to this question is partly found in article 1 paragraph 1 of the UN Declaration on the Right to Development which boldly declares the right to development an inherent human right in which everyone is entitled to participate in, contribute to, and enjoy development in the economic, social, cultural and political spheres of their lives and thereby creating an enabling environment to fully enjoy other fundamental rights and freedoms that they are entitled to. This links development to other surrounding factors which are interdependent on each other i.e. the economic, social, cultural and political dimensions of development emphasising the multi-dimensional or all-encompassing approach to this right.

[95] P Baehr et al *Human Rights in Developing Countries: Yearbook* (1996).
[96] *Human Development Report* 1994 page iii
[97] Bradlow (n 90 above) 53
[98] As above

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What is clear from the above is that the right to development is a synthesis of other political and social rights which seeks to contribute to and promote the overall well-being of human beings. As Mbaye put it, it is a 'right of all men' and 'each man has the right to live and the right to live better'.[99]Salcedo expands on the definition and scope of the right to development. He concludes that that the right to development is both an individual human right and a collective right which recognises the right of every man to be free and live a worthy life. This development, he continues, is only justified as long as it 'serves to improve the economic, social and cultural level of every human person'.[100]Mbaye captures the essence of this right succinctly by stating that 'without development there can be no human rights and without human rights there can be no development'.[101]

2.3.3 Regional Approaches to Development

At a regional level this right is more explicitly pronounced. The African Charter on Human and Peoples Rights states that

> '1. All peoples shall have the right to their economic, social and cultural development with due regard to their freedom and identity and in the equal enjoyment of the common heritage of mankind.
>
> 2. States shall have the duty, individually and collectively, to ensure the exercise of the right to development.'[102]

While the dimensions of development i.e. economic, social and cultural are again found in the article, an interesting inference that can be drawn from this article is that the right to development is almost completely a collective one. This is consistent with the general letter and spirit of the Charter as the people element which features solidarity rights as a distinctive feature of the Charter.[103]

In the Southern African Development Community (SADC) Treaty reference is made to ensuring 'the progress and well-being of the peoples of Southern Africa' in the preamble. A people-centred approach to development in the region reverberates throughout the treaty. Article 5of the SADC Treaty states that the objectives of SADC, amongst others, shall be to 'achieve development and economic growth, alleviate poverty, enhance the standard and quality of life of the peoples of Southern Africa and support the socially disadvantaged',[104] 'promote self-

[99]EG Hector "The right to development as a human right' (1981) 16 *Texas International Law Journal* 192
[100]As above 193
[101] EA Ankumah (n 66 above) 165
[102]Article 22
[103]EA. Ankumah (n 66 above) 161
[104]Article 5 (1) (a)

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sustaining development on the basis of collective self-reliance'[105] and achieve the sustainable use of natural resources and effective protection of the environment.[106]

It is evident that a multi-faceted approach to development in the region was preferred by the heads of state who adopted this treaty in 1992 in Lusaka, Zambia. This approach is further seen in the various protocols of the regional body such as the Protocol on Mining particularly article 8 which encourages member states to promote the attainment of sustainable development by 'ensuring that a balance between mineral development and environmental protection is attained.'

2.3.4 The South African Approach to Development

The system of apartheid perpetuated by the National Party (NP) from the 1940s to the early 1990s resulted in an unequal distribution of the wealth of the country and the severe underdevelopment of various facets of the lives of the majority African population. These injustices of the past are recognised in the preamble of the 1996 Constitution that was adopted by a democratically elected National Assembly sitting as a Constitutional Assembly after the Multi-Party Negotiation Process (MPNP) resulted in a negotiated set of binding Constitutional Principles which produced the constitution in its final form.[107] A commitment is found within the preamble to 'improve the quality of life of all citizens and free the potential of each person'.

It followed that a number of socio-economic rights were introduced in the final constitution. Rights which included the right to an environment which is not harmful,[108] the right to housing,[109] and the right to health care, food, water and social security.[110] These rights seek to improve the quality of life of all citizens and not only a select minority.It is for this reason that the right to development has taken centre stage in the political and academic discourse within the country. In South Africa's latest long term development strategy, the National Development Plan (NDP), the National Planning Commission (NPC) acknowledges that South Africa has come a long way since the first democratic elections which were held in 1994. It does however also admit that poverty still remains rife and insufficient progress has been made in the attempts to reduce inequality[111].

These sentiments have been shared previously by the Constitutional Court in one of its seminal decisions when it admitted that these problems already existed when the Constitution of the

[105]Article 5 (1) (d)
[106]Article 5 (1) (g)
[107]For a brief history of the negotiation process and the adoption of the interim and final constitutions ('the constitutional revolution') see I Currie & J de Waal (eds) *The Bill of Rights Handbook* 6th edition 2013 4-7
[108]Section 24
[109]Section 26
[110]Section 27
[111]NDP (n 1 above) 1

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Republic was adopted. It did however recognise the persistence of these problems by stating that 'we live in a society in which there are great disparities in wealth.' It further pointed out that millions of people are living in atrocious conditions and are stuck in situations of immense poverty where 'there is a high level of unemployment and inadequate social security'.[112]

In another ground-breaking judgement, the court confirmed the constitutionally entrenched political, civil, social and economic rights. It pointed out that human dignity, freedom and equality[113] are denied to those who have no food, clothing or shelter. It concluded that the attainment of these rights is important to advancing equality and fostering the evolution of a society where men and women are equally able to achieve their full potential.[114] This view expressed by the court is consistent with the commitment which is found in the preamble of the Constitution to ensure that everyone's quality of life is improved and that everyone is afforded the opportunity to find and unleash their potential.

The NPC proposes the introduction of a new approach to development. The proposed approach would move the citizenry from being passive actors who merely receive services from the state to a situation where those who were previously socially and economically excluded would be included in the system, and would become active champions of their own development. The government would also have a role to play by ensuring that it effectively develops people's capabilities to lead the lives they desire.[115]

As stated above, development is not an ideal that can be achieved overnight. It is a continual process over a period of time that seeks to improve the socio-economic conditions of the general population with a particular focus on the poor.[116]Therefore, to get to a stage where, in the words of the NPC, 'people are the champions of their own development and where government works effectively to develop people's capabilities to lead the lives they desire'[117] concrete policy objectives will need to be taken by the state to ensure the realisation of this ideal. The constitution provides some direction in this regard. In both section 26(2) and section 27(2) the state is directed to 'take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation' of these rights. When setting out the limits and scope of the positive obligations imposed on the state to fulfil the socio-economic rights contained in the constitution in the *Grootboom* judgement, the Court set out the elements which need to be met. The Court stated that 'the State is obliged: (a) to take

[112]*Soobramoney v Minister of Health, KwaZulu-Natal* 1998 1 SA 765 (CC) 770-771
[113]The foundational basis of our society
[114]*The Government of the Republic of South Africa and Others v Grootboom and Others* 2001 1 SA 46 (CC)para 43
[115]NDP (n 1 above) 1
[116] (n 95 above)
[117]NDP (n 1 above) 1

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reasonable legislative and other measures; (b) within its available resources; (c) to achieve the progressive realisation of this right'.

Expanding on what these elements entail, in the context of the right to housing, the court held the following: with regard to reasonable legislative and other measures the court stated that 'the measures must establish a coherent public housing programme directed towards the progressive realisation of the right of access to adequate housing within the State's available means'. More importantly, it pointed out that 'the programme must be capable of facilitating the realisation of the right'.[118]However, the Court hastened to add that 'legislative measures by themselves are not likely to constitute constitutional compliance' and that 'the State is obliged to act to achieve the intended result, and the legislative measures will invariably have to be supported by appropriate, well-directed policies and programmes implemented by the Executive. These policies and programmes must be reasonable both in their conception and their implementation.'[119]

What this means in essence is that the legislative measures or the policies adopted by the government must be capable of being justified both in conception and implementation.

In reference to achieving the right within the available resources, the Court pointed out that this obligation does not require the State to do more than its available resources permit.[120] Referring to its earlier judgement of Soobramoney, the Court repeated the words delivered by Chaskalson P that the obligations imposed on the State, by sections 26 and 27 in regard to the socio-economic rights therein, 'are dependent upon the resources available for such purposes, and that the corresponding rights themselves are limited by reason of the lack of resources'.[121]

In dealing with the progressive realisation of the right, the Court firstly acknowledged that these rights could not realistically be realised immediately. It indicated that the goal of the Constitution is that 'the basic needs of all in our society be effectively met'. It explained that progressive realisation of these rights in effect 'means that the State must take steps to achieve this goal.' It pointed out that the hurdles to accessibility, namely: the legal, administrative, operational and financial hurdles, should be examined and lowered over time where possible.[122]

2.4 Conclusion

[118]*Grootboom*(n 114 above) para 41
[119]*Grootboom* (n 114 above) para 42
[120]*Grootboom* (n 114 above) para 46
[121]*Soobramoney*(n 112 above) para 11
[122]*Grootboom*(n 114 above) para 45

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This chapter examined, through a legal perspective, the two competing interests that lie at the heart of the development of the shale gas industry in South Africa, namely: environmental protection and development. The origins and evolution of these two areas of law where considered. The approaches and experiences with these areas of law were explored at three different levels which are the international, regional and national approaches and experiences. A summary of the above discussion will now follow.

The awareness surrounding environmental degradation began in the early 1900s because of the realisation that environmental degradation may have negative effects on citizens of neighbouring states. The four distinct periods of the growth of international environmental law were identified. These periods consisted, firstly, of the signing of bilateral and multilateral treaties by states, secondly, the creation of international organisations which could assist in the harmonizing of international policy, thirdly, the co-ordination of responses to environmental degradation and lastly, the integration of environmental concerns with other interests that that are connected to environmental concerns.

Parallel to the evolution and growth of international environmental law, the issue of development began to emerge from the developing countries as an issue which needed to be addressed as a matter of urgency. Because of their colonial past, most developing countries prioritised development above other concerns including environmental protection which was seen more as a concern of wealthier and more developed nations. The efforts to put development at the top of the international agenda resulted in the adoption of two declarations by the UN which have had somewhat of a debatable impact on the advancement of development as a global priority.

Seeing as there was a divergence of views between developed and developing countries, as to the global priorities and their content, compromises were reached on both issues. These compromises are evidenced in the inclusion of other interests into the content of both development and environment. These interests include the social, cultural and economic interests or concerns where a developmental project that may have an environmental impact is contemplated. These concerns must be addressed equally and not as unequal components of either development or environmental interests.

However the fact that the need for environmental protection and development respectively have been identified leave a question of whether these needs can be viewed as rights which individuals can claim under international law? The response to this question with regard to both issues rests on the approach that is used in advancing that particular interest. The modern approach to development views the economic, social, cultural and political dimensions of development as being equal to each other. This is in direct contrast to the traditional approach

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which sees economic development as being at the centre of development with less regard being paid to other dimensions that surround development.

The approach to environmental protection that has been adopted internationally is virtually identical to that adopted with regards to development. The prevailing view is that environmental protection must encompass other interests which a country may have. This means environmental protection must have regard to other factors such as the economic, social and cultural development. The approach to be taken will be determined by the national policy objectives of the particular country. South Africa is no different in this respect.

South Africa has a need to boost economic growth in the country which should ideally be accompanied by job creation in order to curb the growing unemployment rate. It is with this in mind and the fact that there may exist the potential to create over 800 000 direct and indirect jobs in the shale gas sector that the exploitation of this natural resource becomes particularly attractive. The potential financial benefits that could result from the exploitation of this resource could help the South African government in meeting the needs and improving the quality of life of the most vulnerable members in the South African society. However the environment costs which are attached to the exploitation of natural resources cannot be ignored.

In the South African context the right to a healthy environment is protected in the Constitution. Section 24 is clear about the ambit of the right and the measures which the government must take to ensure that this right is realised. This section is supported by legislation, like the NEMA, that seeks to give effect to its provisions such as preventing pollution and ecological degradation, promoting conservation and securing ecologically sustainable development and the use of the natural resources which the country has been endowed with. However the Constitution directs that such environmental protection must pay due regard to the economic and social dimensions of environmental protection and cannot be the most important factor considered.

There exists therefore a relationship between development and environment which cannot be ignored. In the next chapter, this relationship will be considered as part of an emerging international law norm which realises the need for development that does not excessively harm the environment. This emerging norm is known as sustainable development.

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Chapter Three

The Concept of Sustainable Development and its Legal Implications

3.1 Introduction

In the previous chapter the two seemingly competing interests with regard to the establishment of the shale gas sector, namely environment and development, were explored. It was concluded that the point at which these two interests meet, and could possibly be reconciled, is to be found in the international environmental law principle of sustainable development.

In this chapter the concept of sustainable development will be explored. The exploration will include the origins of this concept, its meaning, the international, regional and national approaches to sustainable development and the legal implications of sustainable development at these levels.

3.2 Sustainable development

3.2.1 Origins

The earliest record of an international report which addressed the relationship between the environment and development is the Founex Report released in 1971 in preparation for the Stockholm Conference on Human Development. The report attempted to draw international attention to the interrelationship between development and environment and to provide an

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overall framework within which environmental policies can be formulated.[123] The Stockholm Conference, which adopted the Stockholm Declaration on the Human Environment, led to the adoption of an integrated approach to economic, environmental and social justice issues however the term 'sustainable development' had not been explicitly mentioned in the Stockholm Declaration. Nevertheless, the various elements that define sustainable development were mentioned in the various Principles of the Stockholm Declaration.[124]

The principles contained in the declaration make explicit mention of general human rights,[125] economic and social development,[126] the consequences of environmental policies on development and international economies[127] and the sovereign right of states to exploit their natural resources.[128]

Although the central themes of sustainable development had come to the fore in the Stockholm Declaration, the term itself only appeared prominently in international documents in the 1980s. The earliest of these documents was the World Conservation Strategy (WCS) which examined the contribution of living resource conservation to human survival and sustainable development, identified the priority conservation issues and the main requirements for dealing with them and proposed ways for effectively achieving the strategy's aim.[129]

Inasmuch as the WCS introduced the term 'sustainable development' to the world, it was not until the release of what came to be known as the Brundtland Report[130] that the term gained international recognition, acceptance and prominence. The report emphasized the need to balance the needs of current and future generations against the protection of the environment. This report is of particular significance because it was after its acceptance that sustainable development began to permeate the international environmental discourse and influence policy and decision makers.

Evidence of this widespread acceptance can be seen in the adoption of sustainable development, by the leaders of various countries, as an aspect of the development paradigm at the UN Conference on Environment and Development (UNCED)[131] which was held in Rio de

[123] *Development and Environment: The Founex Report* para 5.1.
[124] On the origins and evolution of the phrase see generally D.B. Magraw and L.D. Hawke 'Sustainable Development' in D. Bodansky, J. Brunnée and E. Hey (eds*) The Oxford Handbook of International Environmental Law* (2007) 613
[125]Principle 1"
[126] Principle 8
[127] Principle 11
[128] Principle 21
[129]See D.B. Magraw and L.D. Hawke 'Sustainable Development' in Bodansky, Brunée and Hey (n 124 above) 615
[130]Officially known as *The World Commission on Environment and Development: Our Common Future*.
[131]Also referred to as the 'Earth Summit'.

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Janeiro, Brazil in 1992.The Conference produced six documents,[132] three of which were legally binding on signatory States.[133] The main document being the Rio Declaration, which focused on sustainable development, highlighted the 21 Principles to guide the integration of environment and development policies. Accompanied by this was Agenda 21 which provided for 'a comprehensive global plan for the implementation of sustainable development'.

The World Summit on Sustainable Development (WSSD) hosted in Johannesburg, South Africa reaffirmed the commitments made a decade earlier in Rio. The WSSD adopted a Plan of Implementation (PoI) which identified and promoted economic development, social development and environmental protection as the interdependent and mutually reinforcing pillars of sustainable development.[134]

3.2.2 Definition

As the first international document to phrase the term 'sustainable development', the WCS defined sustainable development as "the integration of conservation and development to ensure that modifications to the planet do indeed secure the survival and well-being of all people".

Fifteen years later the Brundtland Report would define sustainable development in a similar manner. Unlike the WCS, however, it expanded the definition that encapsulated two concepts. The Report defined the term as:

> "development that meets the need of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
>
> - The concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
> - The idea of limitations imposed, by the state of technology and social organization on the environment's ability to meet present and future needs"[135]

Although this definition has not been agreed to in any international binding legal document, it has been so widely accepted that it has become the quasi-official definition of sustainable development.

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[132] Namely the *Rio Declaration on Environment and Development* (Rio Declaration) , *Agenda 21*, the *UN Framework Convention on Climate Change* (UNFCCC), *The Convention on Biological Diversity*(CBD), *the Statement of Principles on Forests* and *the UN Convention to Combat Desertification* (UNCCD).
[133] The UNFCCC, CBD and the UNCCD
[134] *WSSD: Plan of Implementation*para 2
[135] *WCED: Our Common Future* (n 130 above) 43

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However divergent the opinions concerning sustainable development, there are common elements which can be identified as the building blocks of the concept of sustainable development.

3.2.3 Elements

Legal scholars are yet to agree on a concrete list of the elements that make up the concept of sustainable development. However, from an analysis of the literature, the notion that sustainable development encompasses both substantive and procedural presents would not be entirely incorrect. Sands identifies four interchangeable and recurring elements which he lists as follows:

1. The need to preserve natural resources for the benefit of future generations (the principle of intergenerational equity);
2. The aim of exploiting natural resources in a manner which is 'sustainable', or 'prudent', or 'rational', or 'wise' or 'appropriate' (the principle of sustainable use);
3. The 'equitable' use of natural resources, which implies that use by one state must take account of the needs of other states (the principle of intra-generational equity)
4. The need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, and that development needs are taken into account in applying environmental objectives (the principle of integration)[136]

These principles will be used in this research as the analytical tools in analyzing the sustainability of international standards and the national regulations with specific reference to the exploration of shale gas in South Africa.

In a similar fashion to Sands, albeit with the use of different words, Macraw and Hawke[137] identify the following core elements:

1. The needs of present and future generations must be taken into account (intergenerational equity);
2. The needs of the world's poor must receive priority, and abject poverty must be eliminated (intra-generational equity);
3. The environment needs to be preserved at least to a significant degree; and
4. Economic, social and environmental policies must be integrated.

[136] P Sands *Principles of International Environmental Law* 2nd ed. (2003) 253
[137] Macraw& Hawke 'Sustainable Development' in Bodansky*et al* '*The Oxford Handbook of International Environment Law*' (n 124 above) 613/9

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To these elements, Birnie and Boyle[138] add the right to development, sustainable utilization and conservation of natural resources and the 'polluter pays' principle as the other elements of sustainable development.

Birnie and Boyle list the procedural requirements of sustainable development as consisting of environmental impact assessments, access to information and public participation in decision making. These elements, they state, 'perform the function of legitimising decisions and, if properly employed, may also improve their quality.'[139]

For the purposes of this study, the analysis of sustainable development and the international and domestic guidelines will be limited to the substantive elements of intergenerational equity, sustainable use, intra-generational equity and integration. The analysis of the procedural elements will be limited to environmental impact assessments, access to information and public participation. Where any of these elements overlap and are discussed jointly, this will be pointed out.

3.2.3.4 Substantive Elements

(i) Intergenerational Equity

As earlier stated intergenerational equity seeks to promote the notion that there exists a need to preserve natural resources for the benefit of future generations. It is the idea that as 'members of the present generation, we hold the earth in trust for future generations'.[140] Shelton expresses it more succinctly by writing that humans that are alive today have an obligation as trustees of the planet to maintain the stability to ensure the survival of the human species.[141] Shelton explains further 'that meeting the obligation does not mean that no change is possible, but it does call for minimizing or avoiding long term and irreversible damage to the environment'.[142] It is submitted that this principle is one which seeks to promote proportional and sustainable use of natural resources by the current generation so that future generations may have equal or comparable use and access to the natural resources.

This ideal has also been referred to, in various ways, in a number of international environmental treaties. The first of these was the 1946 International Whaling Convention. Taking this into account, the laws that govern the environment in any given jurisdiction must

[138] P Birnie& A Boyle *International Law and the Environment* (2002) 86
[139] Birnie& Boyle (n 138 above) 95
[140] E Brown Weiss 'Our Rights and Obligations to Future Generations for the Environment' (1990) 84 American Journal of International Law 198 199
[141] D Shelton 'Equity' in Bodansky et al *The Oxford Handbook of International Environmental Law* (n 124 above)
[142] As above

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seek to advance the interests of the future generations when the exploitation of natural resources is contemplated.

(ii) Sustainable Use

The world's natural resources are not infinite. The exploitation of natural resources must be done in a way which would not allow for the complete depletion of the natural resources. It is this standard that governs the rate of use or exploitation so as to ensure their preservation for future generations. This is the basis upon which the element of sustainable use rests. It has been expressed in various treaties using different language. However, the fundamental principle stays the same.

(iii) Intra-generational Equity

Of fundamental importance to this principle is the notion that the eradication of poverty and the social, cultural and economic development of the world's poor must take overriding priority in the global developmental agenda as highlighted in the Bruntland Commission's report.[143]This principle operates on two separate but equal plains. In one plain is the right to development which is reflected in Principle 3 of the Rio Declaration.[144] The other is the common but differentiated responsibilities which take into account the needs and capabilities of different countries.

All countries have the shared interest and obligation of protecting the environment. However, since countries are at different levels of economic development and generally have different historic contributions to causing environmental degradation, the most developed countries carry the greatest burden of responsibility in this regard. Developing countries are given space to advance their right to development while ensuring that such right is exercised sustainably. This is expounded upon in Principle 7 of the Rio Declaration which places a greater burden of responsibility for environmental degradation on developed countries.

(iv) Integration

The need to integrate the three pillars of sustainable developments is the last element of sustainable development. Paragraph 5 of the Johannesburg Declaration on Sustainable Development reinforces the collective responsibilities of States to integrate these interdependent and mutually reinforcing pillars. This principle requires decision-makers to 'integrate environmental considerations into economic and other development, and to take

[143]*WCED: Our Common Future* 43
[144]Principle 3 states that "the right to development must be fulfilled so as to [equitably] meet developmental and environmental needs of present and future generations.

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into account the needs of economic and other social development in crafting, applying and interpreting environmental obligations'.[145]

3.2.3.5 Procedural Elements

(i) Environmental Impact Assessment

According to Wirth, an environmental impact assessment 'is a component of a planning process by which environmental considerations are integrated into decision making procedures for activities that may have adverse environmental effects'. [146] The purpose of the environmental impact assessment, Wirth states, is 'to facilitate informed decision making' after a thorough study of the anticipated environmental effects.[147] This assessment should not only assess the potential environmental impacts a development project may have on the surrounding environment, it should go further to consider the mitigating measures to reduce the risks associated with the project, contingency plans in the event of an unplanned accident and, more importantly, environmentally-friendly alternatives to the proposed action.[148]

(ii) Access to Information

This procedural element of sustainable development is 'a prerequisite to public participation in decision making and to monitoring governmental and private-sector activities.'[149] This aspect is necessary because of the potential impacts of environmental degradation when a project is undertaken by a government and can assist in the making of informed decisions by all stakeholders. Anton and Shelton are of the opinion that a right to access information can find meaning in two ways. First is the narrow meaning which is merely the freedom to seek information and second is the broader meaning which is the right to receive information.[150] As to how this right is exercised in individual countries remains the prerogative of that affected government.

(iii) Public Participation

This element of sustainable development, like that of access to information, is based on the fundamental human rights such as the rights of freedom of speech, expression and assembly.[151] It has found expression in principle in Principle 10 of the Rio Declaration which sought to

[145] Sands (n 136 above) 263
[146] DA Wirth 'Hazardous Substances and Activities' in D Bodansky, J Brunnée& E Hey (eds) '*The Oxford Handbook of International Environmental Law*' 420
[147] DA Wirth 'Hazardous Substances and Activities' in Bodansky et al (n 146 above)
[148] As above 421
[149] D Anton & D Shelton *Environmental Protection and Human Right* (2011) 357
[150] As above
[151] M CordonierSegger& A Khalfan*Sustainable Development Law: Principles, Practices & Prospects*(2004) 156

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promote the idea that environmental issues would be best handled with the participation of all concerned citizens. The participation of the public has the effect of legitimizing the final decision of the government body which seeks to embark on that particular programme.

3.3 The International Approaches to Sustainable Development

The acceptance of sustainable development as a concept of environmental law at the UN Conference on Environment and Development (UNCED) spread to other organisations beyond the UN. The UN, itself being at the forefront of these developments, through its General Assembly, endorsed the outcomes of the Conference. Further backing by the UN for the promotion of sustainable development as an internationally recognised concept happened at the World Summit for Social Development where the integration of social, economic and environmental considerations was reaffirmed.[152]

Five years after the first Earth Summit in Rio, the UN General Assembly held a special session in New York which adopted a Programme of Further Action to Implement Agenda 21. The Programme sought to review the progress made over the preceding five years and to reaffirm the commitment made in Rio 'to further action on goals and objectives set out by the Earth Summit'.

Sustainable development gained further acceptance by the General Assembly when it adopted the UN Millennium Declaration in the year 2000 which, under millennium development goal 7, is to 'integrate the principles of sustainable development into country policies and programmes [and] reverse [the] loss of environmental resources.'

The wide spread acceptance of sustainable development as a principle of international environmental law can be seen in the widely quoted International Court of Justice (ICJ) decision of Gabčíkovo-Nagymaros. The court highlighted, in its own words, the 'need to reconcile economic development with protection of the environment which is aptly expressed in the concept of sustainable development'.[153]This was the first time in which the ICJ recognised the importance of sustainable development as a concept of international environmental law and the role it could play in fostering the economic, social and environmental cohesion that is greatly needed.

In the multilateral trade context the World Trade Organization (WTO) has accepted the concept of sustainable development as one of its core principles that govern trade. Although there is no specific definition of sustainable development in any of the agreements of the WTO, the preamble to the Marrakech Agreement, which established the WTO, makes specific mention of

[152] *Copenhagen Declaration*page 6
[153] *Case Concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgement of 25 September 1997, [1997] I.C.J. Rep. 92 para 140

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sustainable development as an objective of the trade body.[154] The incorporation of sustainable development in the preamble to the Agreement would later be used by the WTO Appellate Body in interpreting provisions of the General Agreement on Tariffs and Trade (GATT).

The *US – Shrimp*[155] case that was heard by both the WTO Panel and the Appellate Body is, according to Lowe[156], 'the best demonstration of the potential for sustainable development principles to permeate WTO law'. This case illustrated how, in the context of trade, environmental policies and development priorities can clash particularly where the parties involved are a developed country and developing country as the interests of the two different countries may be different.

3.4 Regional Approach to Sustainable Development

At a regional level, the Constitutive Act of the African Union (AU) lists the promotion of sustainable development as one of the objectives of the AU.[157] Article 24 of the African Charter on Human and Peoples Right (the African Charter or Charter) confers upon all peoples the right to a 'generally satisfactory environment favourable to their development'. The term sustainable development may not have been explicitly used but, as Du Plessis points out, the right to a 'general satisfactory environment', when read with the caveat that the environment should be favourable to people's development, implies at a minimum that an equilibrium should exist between peoples' natural environment and other factors necessary for development, including economic, social and cultural factors.[158]The caveat that the environment be favourable to the people's development is found when article 24 is read in conjunction with article 22 which guarantees the right to development in line with their economic, social and cultural development.

In what Shelton refers to as 'the first full exposition of a human rights approach to environmental protection',[159] the African Commission on Human and Peoples' Rights (the Commission) assessed the obligations of African states with regard to environmental protection in the well-known case of *Social and Economic Rights Action Centre for Economic and Social*

[154]The preamble states that the Parties to the agreement recognise the need to allow for the maximum usage of the world's resources in accordance with the ideal of sustainable development' but it goes further to acknowledge the different levels of economic development of various member states.
[155]*United States – Import Prohibition of Certain Shrimp and Shrimp Products* WT/DS58/AB/R
[156]V Lowe 'Does The WTO Dispute Settlement Understanding Promote Sustainable Development?' in M.W. Gehring and M.C Segger (eds) *Sustainable Development in World Trade Law*(2005)266
[157] Article 3(j) of the Constitutive Act
[158] A du Plessis 'Sustainability Interests from the perspective of the African Charter on Human and Peoples' Rights' in *The Balancing of Interests in Environmental law in Africa.* M Faure & W Du Plessis (eds) 38
[159]D Shelton et *al Yearbook of international environmental Law* (2002) 202

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Rights (SERAC) v Nigeria (the SERAC decision).[160] In finding violations of various articles, and in particular, article 24 of the ACHPR by the government of Nigeria, the Commission held that the ACHPR 'imposes clear obligations upon a government'.[161]It went further to state that the African Charter 'requires the state to take reasonable and other measures to prevent pollution and ecological degradation, to promote conservation, and to secure an ecologically sustainable development and use of natural resources.[162]

As a member of the Southern African Development Community (SADC) South Africa is bound by the provisions of the SADC treaty to which it is a signatory. In its objectives however the treaty does not explicitly mention the promotion of sustainable development. It does however list achieving 'sustainable utilisation of natural resources and effective protection of the environment.[163] In light of the developments in the 1980s and early 1990s with regards to the development and exploitation of natural resources that is environmentally sustainable, it may be inferred that this is just a different phrasing of sustainable development.

3.5 The South African Experience

The premise of environmental law in South Africa is set against the backdrop of section 24 of the Constitution which guarantees 'the right to have the environment protected, for the benefit of present and future generations, through legislative and other measures that, amongst other things, secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development'.[164]

The primary legislation with regards to the environment and environmental management in South Africa is the National Environmental Management Act[165] (NEMA). It is a framework legislation which intends to, as the preamble states,' integrate good environmental management into all development activities in the Republic'. It outlines the principles that

[160]*Social and Economic Rights Action Centre for Economic and Social Rights (SERAC) v Nigeria Comm No 155/96 (2001)*

[161] The Commission outlined the four levels of duties for states that adhere to a rights regime which are namely to respect, protect, promote and fulfil those rights. In this regard the Commission went further to state what these respective obligations entail. It held that, firstly, the obligation to respect entails that the state should refrain from interfering in the enjoyment of all fundamental rights. Secondly the state is obliged to protect right-holders against other subjects by legislation and provision of effective remedies. The Commission stated that this obligation corresponds largely with the obligation to promote the enjoyment of rights which places a duty on the state to make sure that individuals are able to exercise their rights and freedoms. The last obligation requires the state to fulfill the rights and freedoms it undertook under the human rights regimes. This, the Commission stated, involves a positive expectation on the part of the state to move its machinery towards the actual realization of these rights. In achieving the progressive actual realisation of these rights, the commission stated that this would require a 'concerted action from the state'. See SERAC decision (n 160 above) para 44-48.

[162]As above para 52

[163] Article 5(g) Treaty of the Southern African Development Community

[164] Section 24 (b)(iii) of the South African Constitution (hereinafter the Constitution)

[165] 107 of 1998

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govern environmental decision-making in the country. These principles are substantively identical to the principles expressed in various international agreements in a number of ways. Firstly, section 2(1)(a) states that the principles set out in the Act apply alongside all other all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in the South African Bill of Rights. The responsibility of the state in respect of its obligations to respect, protect, promote and fulfil were highlighted in the SERAC decision.[166] Secondly, section 2(2) places people and their needs at the forefront of decision-making as environmental management must serve their various interests[167] equitably. This falls in line with the element of sustainable development which is known as intra-generational equity.[168] Lastly, section 2(3) seeks to ensure that development is social, environmentally and economically sustainable which is reflected as the fundamental basis for the element of integration in sustainable development.[169]

Unlike the international agreements and declarations on sustainable development the NEMA goes further to outline the factors which must be considered when actions of all state organs may significantly affect the environment.[170] According to the Act, sustainable development requires the consideration of factors such as minimising and remedying the loss of biological diversity where it cannot be altogether avoided,[171] avoiding the pollution and degradation of the environment,[172] avoiding waste or where it cannot be avoided, its minimisation and re-using or recycling it[173] and the adoption of a risk-averse and cautious approach where knowledge is limited.[174]

The NEMA makes provision for the creation of the National Environmental Advisory Forum which is tasked with advising the minister responsible for environmental affairs in relation to environmental management, governance and compliance with the principles set out in section 2[175]. Perhaps more importantly is the establishment of the Committee for Environmental Co-ordination by section 7. This committee is comprised of Directors-General of various government departments,[176] provincial heads of department and any other designee of the

[166]For a discussion about what the obligations to respect, protect, promote and fulfil entail refer to the SERAC decision para 45-47 n 29 above as summarized in n 30 above.
[167]Physical, psychological, developmental, cultural and social
[168]See para 2.2.3 above
[169]n 11 above
[170]Section 2(1)
[171]Section 2(4)(a)(i)
[172]Section 2(4)(a)(ii)
[173]Section 2(4)(a)(iv)
[174]Section 2(4)(a)(vii)
[175]Section 3
[176]Section 8(1) lists the Directors-General of the Water Affairs and Forestry, Minerals and Energy, Land Affairs, Constitutional Development, Housing, Agriculture, Health, Labour, Arts , Culture, Science and Technology with the Director General of Environmental Affairs and Tourism designated as the chairperson of the Committee. Bearing in

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Committee or appointments made by the designated minister in terms of the Act.[177] This inter-ministerial Committee is tasked with promoting the integration and co-ordination of environmental functions by the relevant organs of state and to promote the achievement of the purpose and objectives of environmental implementation plans.[178]

The continued engagement across these bodies as well as other government bodies is important to ensure that effective policies and sustainable practices are a priority for government when implementing development projects.

3.5.1 Judicial Interpretation

The South African courts have been seized with the interpretation of sustainable development in a number of cases. In *BP Southern Africa (Pty) Ltd v MEC for Agriculture, Conservation and Land Affairs*[179](BP Southern Africa), the High Court echoed the sentiments of the ICJ[180] with regard to the delicate balance that lies at the heart of sustainable development as the need to 'balance the competing demands of development and environmental protection'.[181] Concerning the continued clash between development and environmental protection, High Court Judge Claasen said that strict economic principles will longer be the sole determining factor when considering a development. Even though a development may be economically justifiable, it will have to be balanced against the potential environmental impact it may have, taking into account the various elements of sustainable development and the surrounding socio-economic concerns. By making the right to a healthy environment a constitutionally protected and justiciable right South Africa has embarked on a journey to integrating all surrounding factors when a development project is contemplated.[182]

The learned judge highlighted an important point with regards to the goal that the South African constitution seeks to achieve: an integrated approach to development taking into account all the relevant factors including economic and social development as envisaged in section24 (b) (iii).

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mind that the composition of the South African cabinet has changedsince the promulgation of the Act, with various departments either being merged or separated, the chair of the Committee is now reserved for the Director-General of the Water and Environmental Affairs department.

[177] See section 8(1) (l) and (m)

[178]Section 7 (2)

[179]2004 5 SA 124 (W)

[180]*Gabčíkovo-Nagymaros* (n 153 above)

[181]*BP Southern Africa* (n 179 above) 144A

[182]*BP Southern Africa* (n 179 above) 144 B-D

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Sustainable development was examined in greater detail by the Constitutional Court in the case of *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others*[183](*Fuel Retailers* case). In his analysis of sustainable development, Ngcobo J stated that the Constitution recognises the interrelationship between the environment and development.[184] In the same paragraph, Ngcobo J expanded on this interrelationship between the environment and development by stating that the constitution 'recognises the need for the protection of the environment while at the same time it recognises the need for social and economic development. It contemplates the integration of environmental protection and socio-economic development'.[185]With this, Ngcobo J placed sustainable development and sustainable use of natural resources at the centre of the South African environmental protection legislation and policy[186].

The incorporation of sustainable development in international agreements and the South African Constitution however leaves the question of the legal implications which flow from this recognition unanswered. The next question will explore the legal implications which flow from the recognition of sustainable development at an international and national context.

3.6 The Legal Implications of Sustainable Development

There exists a variety of opinions with regard to the legal status of sustainable development. The starting point of the analysis however would be to consider the influence of this concept on international agreements and declarations. As observed from the discussions above, sustainable development first appeared in a different form at the Stockholm Conference, which adopted the Stockholm Declaration on the Human Environment. This Conference concluded with the adoption of an integrated approach to economic, environmental and social justice issues, however, the term 'sustainable development' had not been explicitly mentioned in the Stockholm Declaration. Nevertheless, the various elements that define sustainable development were mentioned in the various Principles of the Stockholm Declaration. It was only in the early 1990s after the adoption of the Rio Declaration and the Conventions on Climate Change and Biological Diversity, where sustainable development is a recurring theme throughout these agreements, that it made its mark on the international stage.

The influence of sustainable development is seen further in the subsequent agreements and mandates of international organisations such as the WTO, the Food and Agriculture Organisation of the United Nations (FAO), the World Bank and the UN Development

[183] 2007 6 SA 4 (CC)
[184] *Fuel Retailers* (n 183 above) 22
[185] As above
[186] *Fuel Retailers* (n 183 above) para 42 and 59

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Programme (UNDP). The influence of this concept of international environmental law found its way to the jurisprudence of international courts and tribunals such as the ICJ and the WTO's Dispute Settlement Body (DSB). These bodies acknowledge that development cannot continue to go on unchecked and must be balanced against the social and environmental interests which should be seen as equal to the economic advantages of development. These acknowledgements redefine the way in which countries exercise their rights to exploit their own natural resources and force states to manage their domestic environment in a way which meets international standards and emerging norms such as sustainable development.

It must be noted that two consequences become apparent when sustainable development becomes a legal principle at an international level. Firstly, the exercise of oversight by international bodies over state implementation of sustainable development can become very limited where states have taken it upon themselves to apply and achieve the ideals of sustainable development at a national level. Secondly, if sovereign states are to be held accountable at an international level then the requirements, scope and evidentiary burden of the legal principle must be made clear so as to facilitate better implementation by states and also assist in the process of assessing the implementation.

It was shown above that South Africa has incorporated sustainable development into its own domestic policy and environmental legal framework. Although stated differently to the language used in the Brundtland Report, the concept of sustainable development was incorporated into the final Constitution which was adopted in 1996 at the height of the concept's emergence. This concept was further elaborated upon in the in the NEMA which is South Africa's primary environmental framework legislation. It contains within it the principles that should govern decision-making in respect of projects which may have environmental consequences.

In the BP Southern Africa case, the court acknowledged that sustainable development and sustainable use of natural resources, as expressed in the over-arching piece of legislation called the NEMA, are at the centre of the South African environmental protection legislation and policy[187] and would therefore be a useful tool of interpretation in environmental law disputes. In this case, the court concluded that 'the concept of sustainable development must be construed and understood in our law'[188]

3.7 Conclusion

This chapter discussed in detail and at length the environmental law principle of sustainable development. The basic premise of this discussion was the relationship between development

[187] As above
[188] Fuel Retailers (n 183 above) para 56

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and the environment. The interrelationship between these two interests was identified in the lead up to the Stockholm Conference. It was noted that the integration of economic, environmental and social justice issues was highlighted at this Conference without the phrase 'sustainable development' being coined. It was however mentioned in the WCS although its level of prominence was still very low. This phrase only gained international prominence after the Rio Conference where it was the main theme of the Conference because of its repeated articulation in the Brundtland Report.

The Brundtland Report defined sustainable development as 'development that meets that needs of the present without compromising the ability of future generations to meet their own needs'. The Report then went on to add two other concepts. The first of these concepts being the concept of meeting the needs of the poor, which can be interpreted to speak of development and the second one being the imposition of limits on environmental degradation which speaks to the issue of environmental protection.

The realisation of the required balancing act between the environment and development, expressed in the concept of sustainable development, has permeated other international organisations like the WTO and has also made its way into the jurisprudence of the ICJ in the widely cited case of Gabčíkovo-Nagymaros where the court stated that the ideal of sustainable development as the 'need to reconcile economic development with protection of the environment'.

The African region was not exempted from the influences of sustainable development. It was noted that a generous reading of Article 24 of the African Charter requires that an equal balance should exist between people's natural environment and other factors necessary for development such as the economic, social and cultural dimensions of development. This emphasised the ecological sustainable development of the natural resources which Africa is endowed with. This ideal can also be found in different words in the objectives of SADC. This objective looks to promote the idea of sustainable use of natural resources and the protection of the environment so as to meet the needs of the people of Southern Africa.

At a national level, sustainable development has found expression not only in the supreme law of the land, that being the Constitution of the Republic, but has also influenced the drafting of the environmental legislation which was promulgated in the democratic dispensation and has emerged as a leading principle in the interpretation of environmental disputes. The interpretation of the environmental law has led to the placing of sustainable development at the centre of the South African environmental protection legislation and policy.

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It is with this in mind that the analysis of the South African environmental legal framework in the following chapter will use sustainable development as a lens through which to analyse its effectiveness in relation to the development of the shale gas industry in South Africa.

Chapter Four

Legal Framework for Shale Gas Exploration in South Africa

4.1 Introduction

In the preceding chapter it was found that the concept of sustainable development forms an integral part of the South African environmental law regime. It was concluded that, although not specifically mentioned, sustainable development in South African law finds its roots in section 24 of the Constitution. This has translated into sustainable development occupying a central position in the environmental framework legislation and other pieces of legislation that deal with specific areas of environmental law in South Africa.

The overarching piece of legislation that lies at the heart of the South African environmental law and its environmental management policies is the National Environmental Management Act (NEMA). The NEMA is supported by other pieces of legislation that deal with specific areas of environmental law in South Africa. In this chapter the analysis of the South African environmental legislation, as it relates to shale gas exploration, will consist primarily of an analysis of NEMA followed by the analysis of other legislation.

4.2 The National Environmental Management Act 107 of 1998

The primary legislation with regards to the environment and environmental management in South Africa is the National Environmental Management Act which is the first piece of legislation in the democratic South Africa that dealt specifically with, and laid the groundwork for, environmental management in the country. This Act was preceded by two Acts in the mid-

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1980s, namely: the Environment Conservation Extension Act[189] which was later replaced by the Environment Conservation Act (ECA),[190] in the pre-democratic dispensation. However, these Acts, according to Glazewski, were far from optimal and 'merely paid lip-service to the environment'.[191] It was therefore necessary for the newly elected South African government to enact a law which has enforceable substantive provisions that went beyond mere lip-service. This need led to an extensive public consultative process known as the Consultative National Environmental Policy Process (CONNEPP) which, as a result, produced the *White Paper on an Environmental Management Policy for South Africa*. An essential feature of the White Paper was the recurrence, in some form or other, of the concept of sustainable development throughout the document. This trend is reflected in the text of the NEMA and will be illustrated below.

The NEMA is a framework legislation[192] which intends to, as the preamble states, 'integrate good environmental management into all development activities in the Republic'. This is obvious from the overall purport of the Act which, according to Glazewski, is to 'fashion an environmental management system on organs of state rather than impose a set of regulatory commands on the private sector'.[193]

The preamble to NEMA sets out the general themes which reverberate throughout the Act. The preamble does this by first highlighting an environment which is not harmful to the health of everyone as a fundamental right as guaranteed in section 24 (a) of the South African Constitution. The preamble goes further to echo the provisions of section 24 (b) of the Constitution by placing the NEMA as the leading legislative measure that seeks to protect the environment 'for the benefit of present and future generations' by seeking to prevent pollution and ecological degradation, promote conservation and, perhaps a more relevant provision for the current discussion, 'secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development'.

At a more conceptual level, some elements of sustainable development make their first appearances in the preamble of the NEMA. These include: the elements of intra-generational equity, intergenerational equity and integration. This can be seen from the use of phrases like 'inequality in the distribution of wealth and resources' and the poverty that follows from this unequal distribution, which are identified as the primary causes of environmentally harmful practices and the emphasis on the 'integration of social, economic and environmental factors in

[189] 100 of 1982
[190] 73 of 1989
[191] J Glazewski J *Environmental Law in South Africa*(2013)7-3
[192]Section 2(1) (b)
[193]Glazewski (n 191 above) 7-7

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the planning, implementation and evaluation of decisions' which will 'ensure that development serves present and future generations'.

Even before delving deeply into a detailed analysis of the Act, it is evident from the above that the elements of sustainable development are easily discernible from the preamble itself. Traces of these elements continue to be seen in various provisions of the Act which will further analysed below.

An interesting feature of the NEMA is that it defines the environment differently and, perhaps arguably, more thoroughly when compared to the definition contained in the ECA. The definition of 'environment' contained in the NEMA is a more comprehensive definition than that contained in its predecessors. Although the definition of 'environment' in the NEMA is very wide, South African scholars are of the opinion that it could be wider and more meaning could be read into it.[194]

The definition of environment in the NEMA supports the general nature of the NEMA as a framework Act encompassing a variety of surroundings in which humans exist to address all types of environments as the NEMA does not provide for specific environmental issues [195] but rather seeks to promote co-operative governance in environmental management.[196] In promoting such effective co-operative governance, the NEMA sets out a number of principles that seek to guide environmental management in the country.

4.2.1 Principles of NEMA

The principles that govern environmental decision making in the country are set out in section 2 of the NEMA. These principles form the basis upon which environmental decisions are to be taken in the country. The underlying international environmental law concept that underpins these principles is that of sustainable development.

The first two principles in section 2 of the NEMA[197] illustrate that sustainable development is the environmental management imperative that should ideally guide decision making in areas of development. There is no ambiguity on the obligation placed upon organs of state in environmental management. It is stated clearly in section 2 (2) that 'environmental management *must* place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably'. However, the

[194] See discussion contained in Chapter 2 above, para 2.2.4
[195]Section 1 of the NEMA however does provide for the enactment of 'specific environmental management Acts' namely the Environment Conservation Act 73 of 1989, the National Water Act 36 of 1998, the National Environmental Management: Protected Areas Act 57 of 2003, the National Environmental Management: Biodiversity Act 10 of 2004, the National Environmental Management: Air Quality Act 39 of 2004.
[196] As envisaged in chapter 3 of the Constitution
[197]Section 2 (2) – (4)

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development envisaged in subsection 2 is conditional upon it being socially, environmentally and economically sustainable.[198]

The South African Courts have pointed out that the principles in the NEMA reflect the broad international consensus which acknowledges the need to protect the environment on one hand and, on the other hand, ensure that human development is realised.[199] With the above in mind, it can be concluded that a decision to allow hydraulic fracturing in the Karoo therefore must be based on the needs of the people, the socio-economic impact of the exploration and the environmental implications of the exploration. This balance of the different considerations to be taken into account must be interpreted using the concept of sustainable development as articulated in the Act. The question that flows from this conclusion is: what constitutes sustainable development?

Section 2 (4) of the NEMA aides in the interpretation of what constitutes sustainable development in that it gives a list of factors which are to be considered when administrators and the courts are seized with the interpretation of sustainable development. The factors relevant for the current discussion include appreciating the fact that environmental management must be an integrated process where the realisation that all the surrounding aspects of the development are linked and interrelated will lead to the selection of the best available option to protect the environment and the people in the environment.[200] Another factor to be considered is the participation of all interested and affected parties in the development project. This participation must be done through making available the relevant information and capacitating the people affected by and interested in the project.[201] Where a decision is to be reached concerning a development project, the NEMA directs that the decision must take into account the interests, needs and values of the people interested in and affected by the development project including their traditional knowledge system.[202]This decision must take into account the social, economic and environmental impacts of the development project including a consideration of the advantages and disadvantages of the project.[203]

4.2.2 Implementation of the Principles

Having considered what sustainable development means in the context of the proposed hydraulic fracturing in the Karoo, the implementation of the principles expressed in section 2 (4) must be examined. Section 24 of the NEMA is helpful in this respect. It provides that the possible impact of a development project which may adversely affect the environment must be

[198] As seen in subsection (3)
[199] Sasol Oil (Pty) Ltd and Another v Metcalfe NO 2004 171G
[200] Section 2(4) (b)
[201] Section 2(4) (f)
[202] Section 2(4) (g)
[203] Section 2(4) (i)

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considered, investigated and assessed before it is implemented. This process of investigation and assessment must take into account the potential impact on the environment, the socio-economic conditions of the people affected by the project and their cultural heritage.[204]

It is clear that the NEMA envisages an integrated approach to managing development projects which may have environmental consequences. Section 23 of the NEMA clearly identifies the general objectives of the integrated environmental management principles as set forth in section 2. Section 23 provides that the general objective of integrated environmental management is to, amongst other things, promote the integration of the principles expressed in section 2 of the NEMA and identify, predict and evaluate the actual and potential impact on all the surrounding factors around the development project.[205]

Having explored the various provision found in the environmental framework Act which are applicable to the development of the shale gas sector in South Africa it is now sensible to turn to the provisions of other pieces of legislation which have a bearing on the development of the shale gas sector. Unlike the NEMA, however, the Acts are specific to particular environmental concerns and will be dealt with as such.

4.3 The Minerals and Petroleum Resources Development Act 28 of 2002

4.3.1 Objectives of the Act

The object of this Minerals and Petroleum Resources Development Act (MPRDA) is to give effect to the principle that the State is the custodian of the mineral and petroleum resources found within the Republic.[206] This it seeks to give expression to the internationally accepted right of the State to exploit these minerals as it pleases.[207] In terms of the MPRDA, the exploitation of these minerals must promote economic growth, employment and the advancement of social and economic welfare.[208] The MPRDA also seeks to promote equitable access to these mineral resources with a particular focus on the historically disadvantaged so as to spread the benefits from the exploitation of these mineral resources equitably.[209] However, the MPRDA also seeks to ensure that the development of the mineral and petroleum resources

[204]Section 24 (1)
[205]Section 23(2) (a) – (b)
[206]Section 2 (b)
[207]Section 2 (a)
[208]Section 2(e) – (f)
[209]Section 2 (c) – (d)

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are done in conformity with the provisions of section 24 of the Constitution which advances the ideal of sustainable development.[210]

4.3.2 Environmental Obligations

As highlighted in the first chapter, the exploration of shale gas has the potential to affect the environment adversely. Section 37 of the MPRDA reiterates the principles set out in section 2 of the NEMA as the guiding principles which should apply to all mining and prospecting operations. The approach of integrating the social, economic and environmental factors into natural resource exploitation is echoed in section 37 (2) of the Act.

Section 38 of the MPRDA places a responsibility on the parties which have been given permission to exploit the natural resources to adhere to the objectives of integrated environmental management which are laid out in the NEMA, manage the environmental impacts of the exploitation by following their environmental management plan and take responsibility for environmental degradation caused by the exploitation if they are unable to repair the damage caused as a result of the exploitation.

4.4 The National Water Act 36 of 1998

Section 27 (1) (b) of the Constitution provides for the right of everyone to have sufficient food and water. This is a socio-economic right which obliges the government to act in a positive manner so as to achieve the attainment of this constitutional right. The National Water Act seeks to not only give expression to this right but to also, amongst other things, meet the basic needs of the present and future generations, promote equitable access to water, promote the efficient and sustainable use of water and also facilitate social and economic development.[211]

It is clear that that the Act articulates the elements of sustainable development by seeking to ensure that that everyone has water and that the efficient use of this resource would promote development.

Because of the use of large amounts of water in the exploration of shale gas, section 21 of the Act is relevant in this respect. This section defines what ‘water use’ means and the actions which constitute ‘water use’. For the purposes of the current discussion paragraph (j) of section 21 becomes important. This paragraph addresses the use of underground water and its disposal to ensure that the development project is continued without impediment or to ensure the safety of the people. This means that there exists environmental obligations placed on companies and the State by various pieces of legislation including the National Water Act to ensure that the environmental rights of maintaining a healthy environment is realised. As

[210] Section 2 (h)
[211] Section 2 (1)

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stated by the court in *Minister of Water Affairs and Forestry v Stilfontein Gold Mining Co Ltd and Others*[212] these obligations cannot be flouted as they are repeated in the Constitution, the NEMA and the National Water Act.

4.5 Proposed Technical Regulations for Petroleum Exploration and Exploitation

Realising that there exists a gap in the South African law with regards to the exploitation of shale gas, the Department of Mineral Resources commissioned the drafting of technical regulations which would guide the companies that had applied for prospecting licenses. The proposed regulations were made available in October of 2013 and contain the technical aspect of the operations which will be undertaken and some relevant information for environmental protection.

Section 3 speaks to the issue of conducting an environmental impact assessment where exploration of the petroleum resources of the country is contemplated. The environmental impact assessment must include a comprehensive analysis of the potential environmental effects, the acceptable limits to be placed on the environment and the alternative ways in which the exploration can take place that would reduce the harm on the environment. The appointment of suitably qualified persons to oversee the operations and the design of responses to potential environmental damage are also mentioned as being key in the process of writing up the environmental impact assessment.

An important requirement in the proposed regulations is that the final assessment that is to be submitted to the Department of Mineral Resources and/or the Petroleum, Oil and Gas Corporation of South Africa (Pty) Ltd (PetroSA, which would be the relevant agency listed in section 3(4) of the proposed regulations) must be accompanied by an independent report compiled by another body which is not affiliated to the company or body applying for the license to explore for the natural resource.

Section 5 of the regulations gives direction as to conducting an assessment on the effect the exploration will have on the underground water sources. This analysis may also be accompanied by independent analysis of the water by various agencies including the government bodies like the Department of Water Affairs.

It should be noted that the general outline of the regulations is more procedural than it is substantive. The regulations look to give expression to the procedural elements of the environmental right. They also seek to ensure that the exploitation of natural resources takes place only after a thorough examination of the impact on the environment as has been conducted.

[212] 2006 (5) SA 333 (W)

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4.6 Conclusion

In this chapter, the relevant provisions of various environmental pieces of legislation, or those pieces of legislation with a bearing on the exploration of shale gas, were considered. From the forgoing discussion, it can be concluded that the balancing of the social, environmental and economic needs of the nation are an integral part of the environmental law regime in South Africa. As seen through the NEMA, the main principle that must guide decision making in the environmental space is that of sustainable development.

Unlike many other international and regional agreements, the NEMA defines what sustainable development means. Because the NEMA is the framework Act governing environmental interests in the country, its influence on other pieces of legislation are visible. The various elements of sustainable development, as discussed in chapter 3, can be seen in both the substantive and procedural form.

The only question that is left to be answered, which is the central question that informs this study, is whether the environmental laws are sufficient to deal with the potential impacts the exploration of shale gas may have on the environment? And if not, what then can be recommended to close the gaps that exist in the environmental law regime?

The following chapter will seek to bring closure to this question and recommend appropriate action in this regard.

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Chapter Five

Summary of Findings, Conclusions and Recommendations

5.1 Introduction

This chapter will summarise the findings of this study and make concluding remarks this will then be followed by the recommendations that will seek to add on to the environmental laws of the country.

5.2 Summary of Findings

In chapter two it was found that, although environmental and developmental interests may seem to be directly opposed to each other, a more modern integrated approach to both interests can assist international bodies, regional blocs and national governments in meeting their developmental goals without necessarily putting undue strain on the environment. It was further found that the continued clash of these two interests could possibly be solved with the aid of the concept of sustainable development as the theoretical basis upon which development projects must be based. This concept was elaborated upon in chapter three.

In chapter three it was found that the now widely accepted concept of sustainable development could be used to solve the clash of interests between the much needed development for South Africa and her people and the protection of the environment, not only for the current generation of inhabitants but also, for the benefit of future generations. It was found that the elements of the concept of sustainable development feature prominently in section 24 of the Constitution and that this has influenced the way in which environmental

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disputes are adjudicated and settled in South Africa. It was seen that it is precisely because of its prominence that sustainable development is used as a tool to assist in the weighing of the competing interests in a particular case.

In chapter four the various pieces of legislation that have a bearing on the exploration of shale gas in South Africa were explored. It was found that sustainable development is a recurring theme in various forms throughout the pieces of legislation and elements of sustainable development manifest themselves in various ways in a variety of legislation. It was further found that the concept of sustainable development remains central to the environmental law regime of South Africa and the principles outlined in the NEMA, along with the requirements to achieving sustainable development, are the pillars of the decision-making process where a developmental project could result in adverse environmental consequences

5.3 Conclusions

It was found through the study that there exists a need to reconcile the two competing interests that lie at the heart of the development of the shale gas industry in South Africa, namely environmental protection and development. It was noted that other interests must be incorporated into the content of both development and environment. These interests include the social, cultural and economic interests or concerns where a developmental project that may have an environmental impact is contemplated. These concerns must be addressed equally and not as unequal components of either development or environmental interests.

The approaches to environment and development were explored. It was found that the prevailing view is that environmental protection and development must encompass other interests which a country may have. This means environmental protection and development must have regard to other factors such as the economic, social and cultural development. The approach to be taken will be determined by the NDP.

The NDP acknowledges that South Africa has a need to boost economic growth in the country which should ideally be accompanied by job creation in order to curb the growing unemployment rate. It is with this in mind and the fact that there may exist the potential to create over 800 000 direct and indirect jobs in the shale gas sector that the exploitation of this natural resource becomes particularly attractive. The potential financial benefits that could result from the exploitation of this resource could help the South African government in meeting the needs and improving the quality of life of the most vulnerable members in the

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South African society. However the environment costs which are attached to the exploitation of natural resources cannot be ignored.

It was found that the integration of economic, environmental and social justice issues can be summarised in the term 'sustainable development'. This phrase only gained international prominence after the Rio Conference where it was the main theme of the Conference because of its repeated articulation in the Brundtland Report.

It was noted that sustainable development can be located not only in the supreme law of the land, that being the Constitution of the Republic, but has also influenced the drafting of the environmental legislation which was promulgated in the democratic dispensation and has emerged as a leading principle in the interpretation of environmental disputes. The interpretation of the environmental law has led to the placing of sustainable development at the centre of the South African environmental protection legislation and policy.

It can be concluded therefore that the balancing of the social, environmental and economic needs of the nation are an integral part of the environmental law regime in South Africa. As seen through the NEMA, the main principle that must guide decision making in the environmental space is that of sustainable development.

Unlike many other international and regional agreements the NEMA defines what sustainable development means. Because the NEMA is the framework Act governing environmental interests in the country, its influence on other pieces of legislation are visible. The various elements of sustainable development as discussed in chapter 3 can be seen in both the substantive and procedural form.

It was further revealed that the various elements of sustainable development, both substantive and procedural, have influenced other environmental pieces of legislation in South Africa.

The question as to whether the environmental laws are sufficient can be answered in the affirmative considering the above. However, as noted in other environmental disputes that have come before the courts, there remains a tendency on the part of various role players not to apply strictly the provisions of the NEMA as the framework Act and the other Acts which may be relevant in this regard.

5.4 Recommendations

Realising that the needs of the people of South Africa, particularly the most vulnerable in society, need to be met the economic benefits of shale gas exploration cannot be ignored any further. However, preserving the ecological beauty and cultural heritage associated with the

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Karoo is just as important as the economic benefits and should not be viewed as any less important. In this respect the following recommendations are made:

Firstly alternative sources of petroleum and gas which would have less of an environmental impact should be sought and pursued. The exploration of shale gas should be seen as a last resort and only pursued after all other cleaner alternatives have been canvassed and failed.

In the event that alternative sources of cleaner energy are not considered ideal or are not seen to add value to the economy of South Africa, the exploration of shale gas should be conducted only after rigorous environmental impact assessments have been conducted.

Due regard must be paid to the use of water and the disposal of the waste of water by the companies involved and the government departments in charge of environmental protection and water use so as to preserve the Karoo for future generations.

The participation of the community of the Karoo and all other interested parties is of paramount importance. This means that all information in regard to the exploration of shale gas must be made available and the views and concerns of these participants must be noted by the decision makers and reflected in the decision that is to be made

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